

**Force and Objectivity:
On Impact, Form, and Receptivity to Nature in Science and Art**

by

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ABSTRACT

I argue that scientific and poetic modes of objectivity are perspectival duals: 'views' from and onto basic natural forces, respectively. I ground this analysis in a general account of objectivity, not in terms of either 'universal' or 'inter-subjective' validity, but as receptivity to basic features of reality. Contra traditionalists, bare truth, factual knowledge, and universally valid representation are not inherently valuable. But modern critics who focus primarily on the self-expressive aspect of science are also wrong to claim that our knowledge is or should be ultimately mediated by ourselves.

In objective science, we represent nature as a *field* of phenomena determined by and within explanatorily-basic *physical structures* that encode the causal impact of *elemental physical forces*. These causally-basic forces hence ground the possibility of objective scientific theory, even though (I argue) they are systematically excluded from its representational contents. I show how my notions of force and field emerge partly through my effort to naturalize concepts of 'God' and 'Laws' in 17th-century natural philosophy. In science, we use the structure of basic forces' impact to see corresponding objects. We do not see these forces themselves—and this relates to the 'transcendence' of 'God'. I supplement this historical analysis by critiquing standard accounts of objectivity, and by synthesizing elements from neo-Kantian epistemology and current 'structural' realism into a view that I call 'dynamic structuralism'. Finally, I argue that physics systematically relies on passive characterizations of phenomena like inertia and impressed force. Dynamic alternatives that are just as empirically adequate are possible, but they are non-scientific.

Poetic objectivity involves a direct presentation of nature as an order of interacting forces. I elaborate first by developing a novel theory of the relation between beauty and sublimity, mediated by a basic category of 'sensory force' (e.g. a 'singing' tone in a beautiful melody). I then describe the interaction between sensory and affective dimensions of aesthetic experience, in relation to an original historical analysis of passion and 'disinterestedness' in Kant, Schiller and Nietzsche. I synthesize these lines of analysis into a critique of the role of 'expression' in art. I

also resist 'spectator'-centric aesthetics, in this connection, by developing an account of *artistic objectivity* in dialogue with Ruskin's critique of the 'pathetic fallacy'. I contrast artistic objectivity with Romantic ideals of self-expression, while elaborating its positive relation to certain currents within Victorian and Modernist aesthetics, including Imagists' stress on 'exteriority'.

My project creatively extends Nietzsche's view that philosophical and scientific theories are 'perspectival' expressions of theorists' drives. It is a virtue of Nietzsche's account that he takes the outlet of strong human drives in creative acts of theorizing to be just one among many higher modes of 'will to power' in nature—many of which are totally impersonal. But Nietzsche is still too focused on self-expression or willing one's own power. Objective science involves external forces' 'expression' in and through us, not just 'expressing' our own powers. And Nietzsche's vitalistic 'will to power' must be replaced by a basic ontology that better accommodates inorganic phenomena, like the 'lawful' order of celestial motions. Thus I aim to de-anthropomorphize and 'de-organicize' post-Kantian notions of willful striving and organic development, while preserving for *force* the primary ontological and evaluative status that theorists from Schiller and Goethe to Schelling and Schlegel to Emerson and Nietzsche attributed to will or to life.

CHAPTER I

Introduction

1. Objectivity and Nihilism in Modern Scientific Culture

Objectivity is under systematic assault. This modern attack on older ideals of objectivity has often been fairly well targeted. But it has also clearly exacerbated tensions, adding to what is by now the conspicuous resurgence of frank tribalism in once-'polite' liberal societies. “Why is it not *good* for our view of reality to reflect who we are and what we care about?,” warring factions seem increasingly inclined to wonder out loud. “Why shouldn't we affirm our unique identities by embracing our 'subjectivity'? Why should we believe that 'bare facts' get at the real nature of things, more so than does the way that the world looks through the 'lens' of our basic values, our cultures, our languages, our history, our quest for recognition, our life experiences, our truth? Haven't we learned that all knowledge is value-laden and perspectival? So why not drop the pretense of neutrality that underlies old-fashioned accounts of objectivity, and instead try to create new knowledge that is as 'laden' as possible with our own standpoint, not other people's?”

But the modern assault on objectivity remains largely unnoticed, even so, because objectivity is now often misunderstood, even where it has not been cast aside. Moderates who lament the loss of faith in the ideal of universally valid representations—the ideal of reaching claims about the world which are just as true 'for' one person or culture as 'for' any other, because they presuppose no particular 'point of view' at all, or at least nothing beyond a generically human point of view—moderates who cling to this ideal are grasping at straws. Fractured liberal societies now care less and less about this sort of neutrality, and, regardless, it should not be our basic goal. Equally misguided, though, are recent attempts to replace older notions of objectivity with overtly politicized appeals to liberal democratic regulation of knowledge production, or to the putatively deeper insight possessed by groups occupying marginalized social 'standpoints', etc. Objectivity is neither a matter of open and inclusive deliberation nor of any privileged

insight that subordinated groups may have into the social structures that reinforce their subordination. Objectivity is essentially related to power—not to social power, per se, let alone to unjust social hierarchy, as some of its critics claim; but to power in a more fundamental sense.

Objectivity is best understood as a state of focused and focalizing outwardness: as the drive and ability to understand elemental reality; as genuine receptivity, not to everything, but to those things which are of greatest power and ultimate value—to the impersonal forces that are highest above us. We achieve this kind of exteriority in part by understanding ourselves in terms of the arational 'cultural' and 'natural' forces that ground our own individual or collective identities. But self-understanding of this sort is only one aspect of objectivity. Objectivity is a systematic orientation away from inwardness, including myopic focus on truth or facticity, and outwards towards the elemental. Self-involvement and anthropocentrism are subjective. But a bare drive to truth is also subjective, as a reflection of indifference to real hierarchies of being. We will not be 'saved' from return to barbarism by a new 'fact-based liberal consensus'. And we will only be degraded by a new identitarian ethos on Left and Right which exalts childish forms of self-affirmation. We must recall the world beyond ourselves. We still require inhuman gods.

Modern science offers one path to objectivity, but not the only one. Scientific objectivity involves adopting the 'standpoint' of elemental reality, or its 'perspective' onto the less real. Thus we achieve a more objective vision of the solar system by adopting the 'point of view' of the Sun, and not that of Earth or Jupiter. The Sun determines the motions of the planets in its orbit, and in this respect the Sun is more real than the planets—its mere satellites. However, the Sun is also affected to an extent by the planets' gravity. Hence, we attain a still more objective view of the solar system by adopting the 'perspective' of its center of mass, within which the Sun and planets are all given their due. What is this objective 'standpoint'? It is not the standpoint of any object in space. It is the standpoint of gravity itself, a view from mass-energy insofar as it is the locus of gravity. It is a pure dynamical space in which all gravitationally-impacted objects in the solar system—the Sun, the planets, asteroids, electrons, and human beings alike—are located. It is the 'view' from one basic aspect of physical reality, onto the manifold objects through which it appears. Scientific objectivity is an outward orientation towards elemental reality, achieved by adopting the 'standpoint' of fundamental natural forces: causally basic, arational, amoral forces.

Aesthetic experience and poetic understanding offer a second basic path to objectivity. In genuine aesthetic experience we immediately behold elemental reality, in its sensuous aspect.

Beautiful and sublime forms appear before us. Colors glow and tones sing out. The thunderhead is illuminated blood-red and fire-orange with the arcing rays of the setting sun. It overwhelms us, as pure sensory force. In this sensory confrontation with reality, we are pulled back down to earth from the suffocating heights of moral idealization and rational speculation. But we are equally pulled up from the mire of base particularity, elevated out of hedonistic desire, self-seeking individualism, and crass chauvinism, into higher forms of creative passion. This mode of objectivity is not the moralist's appeal to an idealized standpoint of 'universal humanity', let alone a still more abstract 'view from nowhere', or a 'God's-eye view' from pure Mind. It is the direct presentation of elemental reality—the experience of directly perceiving real, telluric force.

Nor is this mode of objectivity restricted to aesthetic experience. The objective religious believer, too, immediately beholds his gods' presence in the world. The 'transcendent God' of Abrahamic monotheistic faith thus reflects, in part, a falling-away from an older kind of objective religious experience. The modern 'death of God' and rise of secular humanism have in turn only amplified this falling-away, rendering its nihilistic dimension even more explicit. Genuine myth, art, and 'pre-modern' religion are all forms of poetic understanding. Poetic objectivity, including aesthetic objectivity, is outwardness achieved through the direct experience of elemental reality. This is the obverse of scientific objectivity, whereby we only have direct experience of *objects*: mere appearances of elemental reality, or things insofar as they are impacted by higher forces whose 'perspectives' we take. In science we adopt the 'point of view' of elemental forces—the standpoint of the gods beholding mankind and other lower orders of being. In poetic understanding we instead adopt the 'perspective' of things impacted by higher forces—the standpoint of man beholding the gods, for instance, or consciously acting under their influence. Both are true objectivity. But scientific and poetic objectivity are perspectival duals. Science represents nature as a field of mere objects, or phenomena determined by and within forces' fields-of-effect. Poetry presents the same nature directly as an order of interacting forces.

The modern attack on objectivity has been ongoing in more or less subtle forms at least since Kant's 'Copernican revolution' in the late 18th century.¹ Its first major casualty was the earlier modern ideal of a literal God's-eye view, or the way that things appear to the infinite Mind of Judeo-Christian theology, but not to naive human perception. As part of a broader

1 Daston and Galison (2007) chart the emergence of objectivity as an epistemological ideal in 19th-century science. Perhaps, then, it would be fair to say that objectivity has been under attack from the moment of its inception. More deeply, perhaps it would be fair to say that objectivity could only have been under attack from the moment of its inception, given that it emerged in relation to modern theories of the moral-rational *subject* and its value.

process of secularization, this religious ideal developed into the now more familiar aspiration to a 'view from nowhere': a globally or universally valid perspective on the world, beyond all local reference-frames and particular subjects' idiosyncratic points of view. But at the sociological level, even this secular ideal has now lost much of its prior force. Public discourse is riddled with skeptical charges that our representations of the world can never really be 'detached from the contingencies of the self,' or made fully 'independent of specific subjective capacities.'² And even if it were still widely accepted that this kind of detached vision is possible, there is clearly also waning social faith in its value.

This loss of faith in the value of bare truth or factual knowledge is the more fundamental challenge to standard accounts of objectivity. For even if we can learn countless facts about the world as it is 'in itself'—not as it merely appears to us from our own individual, cultural, or human 'standpoint'—this does not entail that it is inherently or even instrumentally valuable to do so. And many now doubt that it is. Hence, in part, the 'echo chambers' and 'information siloing' proliferating in tandem with modern information technology and new media forms. And hence, in part, the ongoing normalization of 'alternative facts' among political partisans of all stripes.

The principal battle line in this modern contest over knowledge is best framed in terms of an opposition that is more often applied to art, between mimesis and expression. Mimesis (roughly, 'imitation') is associated with traditionalistic accounts of representational art, in terms of a basic impulse to 'copy' the world—to accurately reproduce natural forms, and especially to capture things' sensible appearances. Expressive theorists counter that it is no great virtue to reproduce things that already exist. Rather, they claim, the real dignity of art lies in giving outlet to creative impulses which yield new forms, never before seen in nature. And truly artistic forms are *meaningful*, expressive critics add, in that they signify the feelings, values, or experiences of their individual creators, if not the broader cultural attitudes, material social conditions, or generic human traits that condition their creative activity. Thus for Wordsworth, very simply, "Poetry is the spontaneous overflow of powerful feelings."³ Likewise, but at the species level, for Schiller poetry is "nothing but *giving mankind its most complete possible expression*."⁴

2 As opposed to Thomas Nagel's standard notion of objectivity: "A view or form of thought is more objective than another if it relies less on the specifics of the individual's makeup and position in the world, or on the character of the particular type of creature he is. The wider the range of subjective types to which a form of understanding is accessible—the less it depends on specific subjective capacities—the more objective it is" (Nagel 1986, 5).

3 Quoted in Abrams 1953, 21.

4 *On Naive and Sentimental Poetry* (Schiller 1966, 111) (original emphasis).

M. H. Abrams maps this distinction onto different orientations towards four basic “elements in the total situation of a work of art”: the work, the artist, the audience, and the universe (i.e. the “existing things” from which the work's “subject” is taken to “derive”).⁵ Namely, mimetic theories privilege the universe, whereas expressive theories privilege the artist. (Abrams calls orientations towards the audience or work 'pragmatic' or 'objective', respectively.) Of course, “any reasonably adequate theory takes some account of all four elements.” But still “a critic tends to derive from one of these terms his principal categories for defining, classifying, and analyzing a work of art, as well as the major criteria by which he judges its value.”⁶

So too, then, we can identify 'mimetic' and 'expressive' strains in the theory of knowledge. Traditionalists who invoke the ideal of a 'view from nowhere' think that science should provide a true 'copy' of the world, accurately reporting facts about mind-independent reality. But many modern critics counter that scientific knowledge is inevitably expressive, in the sense that it reflects individual scientists' experiences or values, if not broader cultural attitudes, social conditions, or human capacities—even when it purports to be neutral copying. Many modern critics also believe that scientific theory *should* be expressive, whether at the individual, cultural, or species level. Moreover, much as Abrams argues that the expressive orientation to art emerged as a “comprehensive approach to art, shared by a large number of critics” only in the early nineteenth century,⁷ an analogous claim is plausible with respect to the rise of expressive theories of knowledge. It is not my central goal to defend this historical claim, however, I will show that Kant and Nietzsche (among others) played major roles in this developmental process.

Standard 'expressive' theories of art presuppose that it is the *artist* who expresses himself in the artwork, or at most a broader artistic tradition, culture, or total 'Spirit'. Likewise, standard 'expressive' theories of knowledge presuppose that it is the *human knower* who expresses herself in systems of knowledge, or at most a broader epistemic community, culture, or total 'Spirit'. This is a profound mistake. In truly objective forms of art and science, the creative artist or scientist genuinely 'expresses' himself only insofar as he is also determined from without by inhuman natural forces, higher than any mere cultural force of historical determination.

Contra mimetic theorists of science, bare truth or factual knowledge is not inherently valuable. (As Deleuze rightly observes, “[t]here are imbecile thoughts, imbecile discourses, that

5 Abrams 1953, 6 *et passim*.

6 Abrams 1953, 6.

7 Abrams 1953, 3.

are made up entirely of truths,” namely the “base” truths of a “base, heavy and leaden soul.”⁸) But it is also perverse always only to be 'expressing' ourselves in our knowledge of empirical reality. The expressive theorist is wrong to claim that our representations of the world are or should be ultimately mediated by ourselves, whether individually or collectively. Rather, truly objective scientific knowledge is a vision of observable phenomena, systematically mediated by the 'expressive' forms of causally basic, often entirely impersonal, natural forces.

By contrast, consider the role that the Kantian 'transcendental' turn in metaphysics and epistemology has played in the modern assault on objectivity. Again, objective representation has been widely construed in terms of seeing things as they are 'in themselves', not just as they appear to specific kinds of subjects. And Kantians famously insist that we cannot achieve this sort of 'unconditioned' vision. According to Kant and his followers, rather, we can only experience things as they appear to us mediated by the basic 'forms' of our own cognitive powers: space and time construed as forms of our sensible intuition, or faculty for being affected by things through sensation; the pure 'categorical' forms of understanding, e.g. causality and substance, which delimit the basic structure of all possible experience insofar as it can be taken up in acts of objective judgment; and pure concepts of reason that can never show up as real empirical objects, or features thereof, but which nevertheless provide rationally-necessitated 'regulative ideals' for our practices: God, human freedom, and the systematic unity of nature. Orthodox Kantians claim that while these 'forms' block our access to reality 'in itself', they at least transcend cultural and historical boundaries. Kant claims that all humans experience the same causal relations among the same objects in the same space, and are rationally obligated to act as if we are free and equal subjects before one God. (In the Kantian sense, 'humanity' is a generic term for theoretically and practically rational beings who sensibly apprehend objects in space and time, not a term for a biological kind, *per se*.) All human knowledge thus becomes an *expression* of human powers. Hence, Kant gave birth to the Romantic epistemological tradition.

But objectivity's modern critics often deny the possibility or value of any such standpoint that (putatively) depends only upon capacities or ideas shared by all human beings or rational subjects. Many of the same critics who are skeptical of 'disinterested' inquiry are equally skeptical that there are universal human interests, or at least that real inquiry is often truly grounded in them. Many of the same critics who cast aspersions on the idea of judgments valid

8 Deleuze 1983, 105.

for *all* beings, rendered from nowhere by no-kind-of-being-in-particular, equally disdain theories of human nature meant to ground judgments valid for all *human* beings—apparently without regard for the influence of local historical and cultural context on all real systems of thought. These sorts of quasi-Kantian considerations have contributed greatly to the growth of modern skepticism regarding the cross-cultural and trans-historical validity of scientific knowledge. This is starkly opposed to Kant's own intent in arguing that subjects actively impose certain generic cognitive 'forms' on all the possible objects of their experience. Nevertheless, modern critics who view concepts or representation in general as an insuperable epistemic barrier between us and reality 'in itself', in a way that (they claim) precludes the possibility of knowledge valid for all human beings, are perhaps the most influential inheritors of Kant's 'Copernican' insight that "objects must conform to our cognition."⁹ Thus the modern assault on objectivity has targeted both the 'view from nowhere' and weaker Kantian ideals of species-wide *inter-subjective validity*.

Kant's 'Copernican revolution' also sheds light on the relationship between the 'God's-eye view' and the secularized 'view from nowhere'. The fact that we cannot know things as they are in themselves clearly remained problematic, for Kant. He may have officially insisted that inter-subjective validity is enough, that we can find genuine satisfaction in knowing things as they appear to us via universal forms of human experience. Likewise, contemporary 'critical' epistemologists who balk at the prospect of universal forms of human experience may even insist that it is enough to be able to know things as they appear mediated by culturally- and historically-specific representational frameworks. But this all rings fairly hollow. In positing the thing-in-itself, Kant implicitly valorized objectivity construed traditionally as unmediated access to the thing-in-itself. While Kantians and latter-day 'critical' epistemologists insist that 'unconditioned' knowledge is impossible, that is, they often still implicitly treat it as desirable—an unrealizable ideal. Thus Kant allowed that a purely rational being with a non-sensible power of 'intellectual intuition' could have objective knowledge of things insofar as they are immediately given to them in purely conceptual form. This is what he meant by 'transcendent' knowledge of things qua *noumena* rather than empirical knowledge of sensible *phenomena* (*KrV* A248-250 / B305). And Kant described God's knowledge as intellectual intuition, in this sense (*KrV* B72). At least implicitly, then, Kant treated our intersubjectively-valid knowledge as *less valuable* than God's unconditioned knowledge of noumenal reality. Hence, more broadly, the

9 *Critique of Pure Reason* (*KrV*), B xvi. All translations are from the Guyer and Wood edition (Kant 1998).

claim that objectivity requires only inter-subjective validity is often made somewhat in bad faith.

Kant's account of God's intellectual intuition of 'things in themselves' amounts to a more complex version of a common trope in modern rationalistic philosophy. Kant complicated the relationship between his own version of the 'God's-eye view' and human scientific cognition, in a departure from earlier Enlightenment thought. But the resultant 'critique' was still essentially a triumphalist exaltation of human reason, according to which 'rational' ideas of God, freedom, and the systematic unity of nature are the aims that give all our action and inquiry its basic purpose.

Before Kant, the idea that science affords insight into divine Mind—albeit only of an incomplete or indirect sort, given human finitude—had captured the imaginations of many early modern natural philosophers and their followers. On a Newtonian view, for instance, the laws of nature were acts of divine Will.¹⁰ Thus Roger Cotes, Newton's colleague in mathematics at Cambridge, waxes pious in his editorial Preface to the second edition of the *Principia*:

Surely, this World—so beautifully diversified in all its forms and motions—could not have arisen except from the perfectly free will of God, who provides and governs all things. From this source, then, have all the laws that are called laws of nature come, in which many traces of the highest wisdom and counsel certainly appear, but no traces of necessity. [...] He must be blind who does not at once see, from the best and wisest structures of things, the infinite wisdom and goodness of their almighty creator; and he must be mad who refuses to acknowledge them.

Newton himself tended towards greater circumspection about religious matters in his natural philosophical writings, apparently for methodological reasons. But he still wrote in his *General Scholium* that “[t]his most beautiful system of the sun, planets, and comets, could only [*non nisi*] proceed from the counsel and dominion of an intelligent and powerful Being,” and in Query 31 of his study on *Opticks* that “the wonderful Uniformity in the Planetary System must be allowed the Effect of Choice.” For Newton, in short, “active Principles such as is that of Gravity” were “general Laws of Nature,” by the “help” of which “all material Things seem to have been composed of the hard and solid Particles[...], variously associated in the first Creation by the Counsel of an Intelligent Agent.” And this ultimately reflects the fact that “it became him who created them to set them in order.”¹¹ Like his followers, then, Newton took his theory of gravity

¹⁰ Compare Harrison 2013, 144.

¹¹ *Opticks* Query 31.

to illuminate “such Principles as might work, with considering Men, for the Belief of a Deity,”¹² and in particular the God of his own Christian faith.¹³ The Newtonian world was thus a Christian cosmos, freely ordered into a lawful system by an almighty and rational God. (See Appendix A.)

Newtonians took the laws of nature to be accessible only through extensive empirical investigation, as opposed to *a priori* reflection, on the grounds that the laws of nature are the decrees of a God who is all-powerful and so unconstrained in the exercise of his will.¹⁴ Hence, they did not claim that we could access a God's-eye view of the world through rational introspection. But they did still clearly believe that empirical inquiry could provide us with some kind of real insight into God's Intellect or Wisdom, not just his Power. Hence, in a 1712 issue of the influential *Spectator* magazine, Joseph Addison extols the virtues of “[a] Sir *Isaac Newton*” who can “look through a whole Planetary System[...]and draw from it as many Demonstrations of infinite Power and Wisdom, as a more confined Understanding is able to deduce from the System of an Human Body.”¹⁵ In fact, Addison maintains, to the extent that “Reason” is “more extended” and “more able to grapple with immense Objects,” as in the Newtonian system, it makes “greater still” discoveries “of Wisdom and Providence in the Work of the Creation.”¹⁶

Kant lost faith in our ability to gain any access to the God's-eye view that earlier modern natural philosophers thus associated with scientific knowledge of natural law. Hence, for Kant

12 Newton 1958, 280.

13 See the *General Scholium* for Newton's characterization of God as 'Pantokrator' and 'Lord God', whereby he places special emphasis on God's power and 'true', all-encompassing dominion.

14 Immediately after maintaining that in the laws of nature “many traces of the highest wisdom and counsel certainly appear, but no traces of necessity,” Cotes adds that “[a]ccordingly we should not seek these laws by using untrustworthy conjectures, but learn them by observing and experimenting[...]All sound and true philosophy is based on phenomena, which may lead us—however unwilling and reluctant—to principles in which the best counsel and highest dominion of an all-wise and all-powerful being are most clearly discerned; these principles will not be rejected because certain men may perhaps not like them.” So John Henry summarizes the dominant view among historians of the period: “the defence of empiricist approaches was often associated with a theological position that can be characterized as voluntarist” (Henry 2009, 84). On the connection between empiricism and theological voluntarism, see also Foster 1934, 1935, and 1936; Oakley 1961a, 1961b, and 1966; McGuire 1972; Klaaren 1977; Heimann 1978; Milton 1981 and 1998; Osler 1985, 1991, and 1994; Malet 1997; and Henry 2004. Cf. Harrison 2002, 2004, and 2009.

Regarding Harrison-style worries about positing a strong historical connection between empiricism and theological voluntarism, I consider the following response by John Henry to be extremely reasonable: “There may be intellectual historians out there who have talked in terms of the inexorable logic of particular positions, but if there are, I can’t imagine them holding this position for long. Indeed, I can imagine myself, or other intellectual historians, using the example of Descartes precisely to show that there is no necessary connection between voluntarism and empiricism, there is no inexorable logic which connects them. Nevertheless, I would want to go on, it remains true to say that the defence of empiricist approaches was often associated with a theological position that can be characterized as voluntarist” (Henry 2009, 84).

15 *Spectator* no. 543.

16 *Ibid.*

the God's-eye view became a real yet inaccessible view from nowhere onto things as they are 'in themselves', apprehended intellectually without any mediation by sense. But Kant supplemented this inaccessible 'noumenal' view with an accessible 'transcendental subject's-eye view' that he thought could still perform many core epistemological functions. However, many 20th- and 21st-century critics have in turn lost faith even in this Kantian 'view from generic human rationality'.

Nietzsche anticipated the basic arc of this ideological development, almost a century and a half ago, in diagnosing a genealogical relationship between modern nihilism and the ongoing historical defeat of Christian metaphysical belief at the hand of 'scientific conscience'.¹⁷ Modern history reveals an extended “self-overcoming of morality, out of truthfulness” (*EH* “Destiny” 3), Nietzsche argued,¹⁸ encompassing several interrelated phenomena: post-Enlightenment societies' growing disillusionment with attempts to view nature as 'proof of the goodness and governance of a god' (or even *as if* it were such proof); a concomitant increase in societal “faith in science” (*GS* 344; *GM* III:24); and finally the ensuing collapse into radical “nihilism” (*GM* P 5)¹⁹ as this secularized form of “Christian truthfulness” (*GM* III:27),²⁰ too, ultimately turns against itself.

Nietzsche thus viewed the modern loss of faith in truth as the apotheosis of the very same 'self-overcoming of morality out of truthfulness' that previously involved exalting truth and scientific knowledge at the expense of faith and religious revelation. The “unconditional will to truth” ultimately undermines itself, precisely because it is a recapitulation of the perversely ascetic “will to death” that has always been the rotten core of Judeo-Christian moral conscience (*GS* 344). Moralized asceticism first denies itself the metaphysical solace²¹ afforded by belief in

17 I cite Nietzsche's texts by section and part number using the standard English abbreviations: *A* = *The Antichrist*, *BGE* = *Beyond Good and Evil*, *BT* = *The Birth of Tragedy*, *EH* = *Ecce Homo*, *GM* = *On the Genealogy of Morals*, *GS* = *The Gay Science*, *NCW* = *Nietzsche Contra Wagner*, *TI* = *Twilight of the Idols*, *WP* = *The Will to Power*, *Z* = *Thus Spoke Zarathustra*. I use the Kaufmann and Hollingdale translations. For some notes, I cite *KSA* = *Kritische Gesamtausgabe*, edited by Colli and Montinari, by volume, fragment and aphorism number.

18 Similarly: “The priest too knows[...]that there is no longer any 'God', any 'sinner', any 'Redeemer'—that 'free will' and 'moral world order' are lies: seriousness, the profound self-overcoming of the spirit, no longer permits anybody not to know about this” (*A* 38).

19 See also *KSA* 12:7[64], *KSA* 12:10[42], *KSA* 13:14[86], *KSA* 12:10[192], *KSA* 12:9[35], *KSA* 13:11[108].

20 More fully: “All great things bring about their own destruction through an act of self-overcoming[...]In this way Christianity *as a dogma* was destroyed by its own morality; in the same way Christianity *as morality* must now perish, too: we stand on the threshold of *this* event. After Christian truthfulness has drawn one inference after another, it must end by drawing its *most striking inference*, its inference *against* itself” (*GM* III:27). Consider also: “[...]in us the will to truth becomes conscious of itself as a *problem*[...]As the will to truth thus gains self-consciousness[...]morality will gradually *perish* now” (*GM* III:27); “It is not the victory of science that distinguishes our nineteenth century, but the victory of scientific method over science” (*KSA* 13:15[51]); “... [H]istory *must* itself resolve the problem of history, knowledge *must* turn its sting against itself” (*HL* 8).

21 On 'metaphysical solace' and the later Nietzsche's thoroughgoing skepticism thereof, see the prefatory “Attempt at a Self-Criticism” that he appended to *The Birth of Tragedy* (1772) in 1886.

Christianity's personal God. Correspondingly, in epistemology there is a rejection of objectivity construed literally as a 'God's-eye view' onto reality 'in itself'. Next, moralized asceticism denies itself the residual comfort of secularized belief in the moral purposiveness of history, let alone nature more broadly, and then even the comfort of secularized belief in the shared intelligibility of human experience. Correspondingly, there is a rejection of even a 'view from universal humanity' onto things insofar as they appear in and through generic Kantian 'forms' of human cognition or Marxian 'universal class interests'.²² Secularized Judeo-Christian morality thus triumphs over God, but then also over itself. The secular humanist recognizes his own ideals as unreal—as wishful thinking to be rejected by serious-minded adults, in the name of honesty. But the unconditional drive to honesty that (Nietzsche thinks) leads us to reject both God and objective morality is itself a “*metaphysical faith*” in the value of truth, and an expression of moralized asceticism in its own right (*GS* 344). The unconditional will to truth thus rejects itself, as mere subjective preference in a world devoid of all objective value. “*What* in us really wants 'truth'?” we therefore finally ask ourselves (*BGE* 1), partly in thrall to nihilistic despair. What is the *value* of our will to truth?

Nietzsche also understood, however, that the will to truth is not *just* a sign of modern societal collapse into nihilism. For he sees this 'self-overcoming of morality out of truthfulness', including the self-overcoming of truthfulness that is its negative apotheosis, as producing a world-historical crossroads. On the one hand, again, the 'self-overcoming of morality out of truthfulness' gives rise to pandemic nihilism. On the other hand, though, the 'self-overcoming of morality' also amounts to a destruction of slavish Judeo-Christian values, which may yet facilitate the creation of new and more 'life-affirming' values. Thus in the latter respect—but not the former—the self-overcoming of morality constitutes “that long secret work which has been saved up for the finest and most honest, also the most malicious, consciences of today” (*BGE* 32).²³ Correspondingly, intellectual conscience can be ascetic in a pejorative sense, a sign of self-

22 Thus György Lukács, the Marxist progenitor of modern standpoint theory, writes that “[t]he self-understanding of the proletariat is [] simultaneously the objective understanding of the nature of society,” adding that “[w]hen the proletariat furthers its own class-aims it simultaneously achieves the conscious realisation of the —objective —aims of society (Lukács 1923/1971, 149). Marx himself sometimes expressed skepticism about 'general interests'—claiming in the *Grundrisse*, for instance, that “[t]he general interest is precisely the generality of self-seeking interest” (see Heller 1976, 62–4). However, this apparent skepticism must be reconciled with Marx's account in the *German Ideology*, where he does seem to view proletarian interests as truly general or universal. What is at issue here is likely just what Marx means by 'interest', more than any deep disagreement with Lukács.

23 “...the self-overcoming of morality—let this be the name for that long secret work which has been saved up for the finest and most honest, also the most malicious, consciences of today” (*BGE* 32).

loathing and the festering resentment of the weak towards the power of superabundant life to 'retouch' and 'falsify' the world in its own image. But it can also be a mark of natural strength, and a path towards humanity's self-overcoming in the creation of a new and higher type.

Thus for “*genuine philosophers*,” Nietzsche insists, “knowing' is *creating*, [...and] will to truth is—*will to power*” (*BGE* 211). In the case of 'genuine philosophers', that is, the impulse “to assimilate the new to the old, to simplify the manifold, and to overlook or repulse whatever is totally contradictory” is not unconditional or selfless pursuit of truth. Rather, it expresses the “spirit's power to appropriate the foreign” precisely by “retouching and falsifying the whole to suit itself,” its drive to “growth, in a word—or, more precisely, the *feeling* of growth, the feeling of increased power” (*BGE* 230).²⁴ In short, the genuine philosopher's creative appropriation of reality in systematically 'falsifying' bodies of theory is for Nietzsche a mode of *artistic* representation. And here just as elsewhere, presumably, “[w]e possess *art* lest we *perish of the truth*” (*WP* 822 [1888]).²⁵ Nietzsche thus advances not only a common genealogical critique of the mimetic 'view from nowhere' and Kant's more Romantic-expressive notion of a mediated 'view from universal humanity', but also his own less moralistic version of an expressive theory of knowledge. (See Appendix B.)

Neither 'mimetic' nor Kantian or Nietzschean 'expressive' theories of knowledge are acceptable, however. Contra mimetic theories, it is not inherently valuable to 'copy' existence in thought, however accurately we may do so. But contra expressive theories of knowledge, it is also perverse always only to be 'expressing' ourselves, whether as a 'sensuous-rational' species or as individual 'genuine philosophers'—especially perverse, indeed, in the domain of knowledge or world-representation. After all, is there not more to reality than ourselves? Do we not close ourselves off to the broader world if we always only 'express', impressing our 'inner' lives onto 'external' nature, and never instead act in the name of something beyond ourselves?

Knowledge should be neither 'fact-reporting' nor 'self-expression'. Knowledge should provide us with genuine understanding. The Romantic-expressive theorist of knowledge is right that science does not provide unmediated *representational* access to mind-independent reality. But she is wrong to claim that our access to mind-independent reality is always mediated by *ourselves*, whether individually or collectively. Insofar as it is objective, rather, science is a

24 The context here is not explicitly cognitive or epistemological—i.e. Nietzsche is discussing a general impulse towards simplification. But he would presumably endorse the connection I am drawing.

25 There is no mention of science in this context, so I am quoting quite freely.

formal representation of the *objective appearance of fundamental aspects of reality*—i.e., the way that which is fundamentally real manifests in and through that which is less real, that which is essentially an object for its appearance. Objective representational knowledge is a vision of inessential phenomena, systematically mediated by the expressive 'forms' of more fundamental aspects of reality: higher, often entirely impersonal and inhuman, natural forces.

Thus I offer a 'poetics' of force for modern scientific culture: a philosophy of nature based in the ontological and evaluative priority of impersonal force, which provides a way to analyze science's impact as an objective cultural form, like great art or myth, rather than merely as subjective 'self-expression' or as listless 'fact-reporting'. If there is any hope for a kind of experience that is both truly modern and truly objective, then it rests upon our capacity for broadly 'poetic' receptivity to nature as it is disclosed by science—but only insofar as scientific explanation, like artistic creation, can be a cultural appearance of elemental natural forces. Only in this way can we hope to realize Schelling's vision of “a new mythology[...]which shall be the creation, not of some individual author, but of a new [culture], personifying, as it were, one single poet,”²⁶ without collapsing into an unduly inward or anthropocentric version of 'poetry'. Truly natural science is objective appearance: a pure image of elemental natural forces' impact.

Nature itself neither aims at nor achieves self-knowledge through this objective scientific 'self-imaging' of natural force. Quite the opposite: the human drive to objective scientific knowledge is essentially just one among many manifestations of natural force, most of which are entirely arational and impersonal. The development of scientific theory is often literally the impact of arational and impersonal natural forces manifesting, without aim or intention, through the mediating force of human cognitive powers. Nature itself is incapable of self-knowledge—contra the gross anthropomorphism of post-Kantian 'absolute' idealism and Romantic *Naturphilosophie*, in the vein of Hegel and Schelling. Nature is not a rational system or an organically-unified whole, but an order of hierarchically-related and agonistically-interacting forces, comprising relations of arational impact. Human activity, including scientific inquiry, is neither the goal of nature's largely inhuman force nor its highest manifestation.

But scientific theory does manifest the real impact of the arational natural forces that ground its own explanatory power. In science, these forces are channeled through human beings in acts of systematization and explanation. We concentrate and intensify the world, distilling it

²⁶ Schelling, *System of Transcendental Idealism* (Schelling 1978, 232-3). I have replaced 'race' with 'culture', to avoid the former's problematic associations in contemporary English.

down into its 'really real' fundamentals, and represent all other phenomena purely in the image of this elemental reality. This act of scientific abstraction is not essentially one of rationalization or universalization, any more than artistic abstraction is—although science does reveal universal law and conceptual form, in a way that art does not. The result of science is a veil of objective appearances: the world imagistically represented as a system of objects recapitulating the structure of underlying forces' impact. The objects of scientific representation are things insofar as they are determined by explanatorily basic dynamic structures. These structures in turn encode the real causal impact of elemental natural forces, which hence ground the possibility of objective representation even though they are systematically excluded from its contents.

We know force in pure empirical science through intellectual intuition—not by representing force itself, but by apprehending the explanatory power of the structures of forces' causal impact on empirical phenomena. In the limit of pure physical science, these real dynamic structures are purely intelligible, as opposed to the sensible forms that ground experiences of beauty. But the dynamic structures underlying physical scientific objectivity are not rational forms, or putative universal 'essences' of particular phenomena. Real dynamic structures are the individual fields of concrete natural forces' causal impact, insofar as these fields are described in terms of purely generic relations among measurable physical properties. As generic kinds, these relations are universal. But real dynamic structures are particular instantiations of these generic relations (they are perhaps a species of metaphysical 'trope'). And while dynamic structures necessarily comprise purely intelligible, universal relations, they are not essentially universal. Dynamic structures are essentially just causally-salient 'patterns' within observable phenomena. Some such 'patterns' are describable in terms of universal functional relations among measurable physical properties. Only such patterns are 'dynamic structures', in the sense relevant here. And physical science distinctively highlights these structures. But they are not essentially scientific.

By analogy, consider the common claim that we are all essentially human beings, and not members of different cultures. One might be a humanist, in this sense, and yet still believe that there is a legitimate place for 'cultural studies' departments within the academy. Hence, a humanist might believe that a given social phenomenon essentially concerns the lives or experience of a given cultural group *insofar as it is the distinctive object of a corresponding 'cultural studies' discipline*, while still believing that the given phenomenon is essentially an expression of 'human spirit', more broadly. Likewise, even if empirical scientists focus only on

generic patterns in 'the phenomena'—i.e. only on empirical structures which can be conceptualized—this does not entail that these patterns are essentially conceptualizable. It simply entails that these dynamic structures are essentially conceptualizable *insofar as they are the objects of a distinctively scientific mode of understanding*. But science is not the only source of understanding. Aesthetic experience of a volcano might go beyond the limits of conceptual description in a way that scientific description does not, and yet still yield real understanding. Hence, a scientific description of volcanic activity might not essentially involve concepts, if this description is only inessentially scientific. This is my basic claim regarding dynamic structures. They are essentially rational or 'universal' insofar as they are objects of scientific understanding. But they are not essentially objects of scientific understanding, because science is not privileged as a source of understanding, let alone as an element of reality. Hence, dynamic structures are not essentially characterized by those of their features which make them distinctively scientific.

Nor are our conceptual representations of these dynamic structures essentially universal forms—although they are universal forms. Rather, objective concepts of dynamic structure are universal 'pictures' of individual fields of concrete natural forces' causal impact. They are arational natural forces manifesting as intellectual images of their own impact. Purely ideal conceptual forms have no objective validity. Objective concepts are always pure natural forms, or structures of real forces' possible impact. By representing the world in the mode of scientific objectivity, as a field of objects determined by concepts of explanatorily basic dynamic structures, we creatively re-enact and in this way intuitively apprehend higher natural forces.

Objectivity is a systematic orientation towards elemental reality. Scientific objectivity, in particular, calls us to the 'standpoint' of explanatorily-basic aspects of the world—the real, amoral natural world, including real, amoral human beings and cultural formations. This is why scientific objectivity appears 'detached' or 'disinterested': not because it is a 'view from nowhere', but because it is a view from unsentimental, amoral forces. In objective scientific representation, things are reduced to 'objects' appearing for 'subjects'. But these need not be human, or even rational, subjects. Scientific objectivity treats explanatorily-fundamental aspects of the natural world as the 'subjects' for which observable things appear as 'objects'. The 'transcendental' forms of scientific objectivity are neither rational laws (as if) imposed by an intelligent God nor generic structuring principles of human cognition. They are mind-independent and explanatorily-basic physical structures, which are intelligible but not essentially rational, any more than the slope of

a mountain or the rotation of a hurricane is rational. They are *natural forms*.

To apprehend natural form is not to apprehend nature as rational or as essentially intelligible, therefore. Rather, insofar as nature is intelligible by us, in part (but not only) through scientific inquiry, it is because our own cognitive powers have been determined from without, by higher natural forces. Human intellect is in essence a power to be determined by mind-independent natural forces, by enacting corresponding natural forms' explanatory power.

Science is *systematic* knowledge. The systematicity of an objective theory, in turn, is its objective validity as an image of real dynamic impact. The systematicity of scientific theory is, roughly, an intellectual analogue of sublime aesthetic form. The systematic character of objective scientific knowledge is higher natural force impacting us, in the mode of pure objective appearance or field-of-effect. In objective scientific understanding, we are struck by the purely intelligible force of nature. Objective scientific representation essentially involves hierarchical interaction between the (superior) cognizing subject and the (inferior) objects it represents. But in and through this cognitive mastery over external nature, higher natural forces determine us. The systematic form of objective scientific theory *is* the impact of higher natural forces on us. Objective representation is a kind of human cognitive mastery over inferior natural objects, which we achieve only insofar as we ourselves are in turn determined by higher natural forces.

The highest reality is force, or the objective exercise of power. Force is not a coherent substance, and 'Nature' is not a real whole. This is not a pantheistic philosophy. Nature—the natural world—is a hierarchical order of forces, with an agonistically-interacting plurality of fundamental forces at its bedrock. If one were to call these gods, then this outlook is a kind of naturalized polytheism. But mine are not anthropomorphic deities. They are impersonal forces. I deify but do not anthropomorphize inhuman natural forces. Objective vision is not a singular God's-eye view, but a network of agonistically-interacting gods'-eye views reflecting the impersonal 'standpoints' of fundamental forces. My worldview is a naturalistic and polytheistic inhumanism—modern science reinterpreted as a suitable vehicle for re-appropriation in the name of *objective paganism*. This development is the self-overcoming of modern scientific naturalism.

This book is therefore religious, in the sense that it is an attempt to actively manifest an immediate receptivity to ultimate grounds of value. And because it is direct, not 'critical', it is out of step with academic norms. In this respect, little has changed since Nietzsche criticized the “great majority of industrious scholars and the other accessories of the universities” in his day:

On the basis of [the German scholar's] whole trade (and, as noted, on the basis of the tradelike industriousness to which he is committed by his modern conscience) he is inclined toward a superior, almost good-natured amusement in the face of religion, occasionally mixed with a dash of disdain for the 'uncleanliness' of the spirit which he assumes wherever a church is still acknowledged. The scholar succeeds only with the help of history (*not* on the basis of his own personal experience) to muster a reverent seriousness and a certain shy consideration in the face of religion. But even if he raises his feeling into real gratitude toward it, he still has not personally approached, not even by a single step, what still exists now as church or piety; perhaps even the opposite.

... [H]ow much naivete, venerable, childlike, and boundlessly clumsy naivete lies in the scholar's faith in his superiority, in the good conscience of his tolerance, in the unsuspecting simple certainty with which his instinct treats the religious man as an inferior and lower type that he has outgrown, leaving it behind, *beneath* him—him, that presumptuous little dwarf and rabble man, the assiduous and speedy head- and handiworker [*der kleine anmaassliche Zwerg und Pöbelmann, der fleissig-flinke Kopf- und Handarbeiter*] of 'ideas,' of 'modern ideas!' (BGE 58)

This disdain of 'uncritical' spirituality is a failing on the part of the scholar—the faux 'intellectual' who, in his effort to maintain an air of respectability, often only reveals himself to be unserious.

Can we muster a little more courage, in spite of the times? Can we finally overcome this nihilistic alienation, endemic to modern intellectual culture, that Emerson had already diagnosed by 1836? “Our age is retrospective,” he noted—at a point when a fresh start in the New World, with a more forward-looking ethos, still seemed to him and others like a realistic possibility:

[Our age] builds the sepulchres of the fathers. It writes biographies, histories, and criticism. The foregoing generations beheld God and nature face to face; we, through their eyes. Why should not we also enjoy an original relation to the universe? Why should not we have a poetry and philosophy of insight and not of tradition, and a religion by revelation to us, and not the history of theirs? Embosomed for a season in nature, whose floods of life stream around and through us, and invite us by the powers they supply, to action proportioned to nature, why should we grope among the dry bones of the past, or put the living generation into masquerade out of its faded wardrobe? The sun shines to-day also. There is more wool and flax in the fields. There are new lands, new men, new thoughts. Let us demand our own works and laws and worship.²⁷

27 Emerson 1983, 7. Compare Nietzsche (who read Emerson extensively, albeit not this particular essay): “[L]et us now picture the abstract man, untutored by myth; abstract education; abstract morality; abstract law; the abstract state; let us imagine the lawless roving of the artistic imagination, unchecked by any native myth; let us think of a culture that has no fixed and sacred primordial site but is doomed to exhaust all possibilities and to nourish itself wretchedly on all other cultures—there we have the present age, the result of that Socratism which is bent

Emerson's embrace of 'insight' and disdain for 'tradition' were (and are) American to the core, for better and worse. Mediated in part by Transcendentalists' uptake of British Romantic poetry—hence also, via poets like Coleridge, the indirect influence of early German Romanticism and post-Kantian idealism—the hard-headed 'common sense' of British empiricism gave way, in 19th-century American thought, to a more mystical notion of 'direct' or 'original' experience. Thus, on Emerson's view, 'experience' in the British sense offers mere 'details' that obscure a higher truth:

Every thing is beautiful seen from the point of the intellect, or as truth. But all is sour if seen as experience. Details are melancholy; the plan is seemly and noble. In the actual world—the painful kingdom of time and place—dwell care and canker and fear. With thought, with the ideal, is immortal hilarity, the rose of joy. Round it all the Muses sing. But grief cleaves to names and persons and the partial interests of to-day and yesterday.²⁸

While this characterization bears the unmistakable trace of modern philosophical idealism, the hyper-intellectualism of Continental rationalists and the lofty systematic speculation of post-Kantian metaphysicians also gave way, with Americans like Emerson, to a simpler, almost childlike enthusiasm for nature and a more primal elevation of 'insight' over high theory. Emerson's praise of vitality and creative expression is genuinely more wild—more 'coarse' and more ecstatic—than Schiller's or Goethe's, let alone Hegel's or Schelling's. This primitivist streak, more broadly, underlies the (partial) validity of the cliché that American culture idealizes a distinctively 'rugged' brand of individualism, relative to that of the European liberal tradition. (More pejoratively, of course, it also fosters our notorious anti-intellectualism and ahistoricity.)

Emerson's naturalism, this quintessentially American mode of half-secular and half-religious, almost-but-not-quite-primal exaltation of the 'floods of life' manifest in 'new lands, new men, new thoughts', was a major influence on Nietzsche's philosophical outlook. As part of a broader group of mediating figures, also including Schiller, Emerson developed post-Kantian

on the destruction of myth. And now the mythless man stands eternally hungry, surrounded by all past ages, and digs and grubs for roots, even if he has to dig for them among the remotest antiquities. The tremendous historical need of our unsatisfied modern culture, the assembling around one of countless other cultures, the consuming desire for knowledge—what does all this point to, if not to the loss of myth, the loss of the mythical home, the mythical maternal womb? Let us ask ourselves whether the feverish and uncanny excitement of this culture is anything but the greedy seizing and snatching at food of a hungry man—and who would care to contribute anything to a culture that cannot be satisfied no matter how much it devours, and at whose contact the most vigorous and wholesome nourishment is changed into 'history and criticism'?" (*BT* 23).

28 Emerson 1950, 211.

conceptions of life in a naturalistic direction that Nietzsche then dramatically extended into his own radical amorality and metaphysical vision of unending conflict among arational 'drives' [*Triebe*]. In Nietzsche's theory of universal will to power, the Romantic 'flood of life' was finally severed from its German idealistic associations (via notions of organic unity and growth) with moral-rational order and teleological development towards ideal forms. Neither Emerson nor Schiller embraced amorality, and both valued nature's 'elevation' into 'spirit' by way of intellectual form. But in their attempts to develop moralized interpretations of natural phenomena like vitality and organic growth, they unintentionally had the opposite effect: rather than convincingly bringing organic phenomena under the ambit of anthropocentric categories of rationality or freedom, they instead provided apt descriptions of human life and activity as truly natural, or *essentially* just expressions of superabundant life. For Nietzsche, this illuminated the real nature of human traits like 'freedom' and 'reason' that supposedly set us above the rest of the world. Namely, our appeals to 'moral equality', 'freedom', 'reason', and so on, are ultimately just sublimated expressions of amoral and arational drives. Some of these basic drives *appear* moral, like natural drives to love and friendship, but others are manifestly 'evil', like our drive to cruelty.

This is crucial yet often-misunderstood context for Nietzsche's expressive theory of knowledge—especially insofar as it bears on my own account of modern scientific culture. Nietzsche does not favor unsublimated 'natural passion' over sublimated 'higher culture', or vice versa, generally speaking. Rather, he is fundamentally *indifferent* to the distinction. Our basic drives *can* manifest in their full force as 'culture', or as refinement into 'culture', on his view. But Nietzsche ultimately values basic drives' powerful expression, without preferring either that this occur as sublimated 'higher culture' or as 'savage' natural impulse. Indeed, he is often precisely concerned to show how drives' attenuating 'vaporization' into the 'imaginative and spiritual' domain runs counter to higher forms of will to power or self-overcoming. Thus when he says that 'genuine philosophers' are those for whom 'knowing is creating', Nietzsche is indicating a kind of 'creativity' that he takes to be pervasive in the natural world—not a 'higher' or 'spiritual' mode of activity distinctive to human beings. This is part of the epistemological import of the metaphysics of will to power: even sublimated 'culture' like scientific theory is ultimately just a manifestation of *life*, construed in terms of a drive to continual self-overcoming.

I take this to be an attractive feature of Nietzsche's view, which I wish to appropriate for my own account of force. Force does not 'aim' to manifest in the form of 'higher culture' as

opposed to 'savage' impulse. Nor are 'high-cultural' manifestations of force *better* than 'unrefined' ones, generally speaking. Rather, the relative value of 'refined' and 'coarse' phenomena, just like anything else, is ultimately determined by the relative *degree or intensity of force* that they manifest. I say this directly by analogy to Nietzsche's view that “[w]hat determines rank, sets of rank, is only quanta of power, and nothing else” (*WP* 855). (Likewise, the “objective measure of value” is for Nietzsche “[s]olely the quantum of enhanced and organized power” [*WP* 674].)

Hence, even though Nietzsche is unduly preoccupied with *self*-expression, nevertheless his conception of *expression* is at least grounded in a metaphysical account of will to power that he takes to draw us into ontological relation with non-human animals and plants, if not all real things. We 'express' ourselves—we will our own power—in ways that other living things do not. And science is one of these uniquely human modes of willing power, clearly. But for Nietzsche science is *essentially* a way of willing power, and only *inessentially* a human way of doing so.

More recent analyses of 'power relations' or 'social values' in science ignore this deeper ontological and ethical foundation, reverting to more narrowly anthropomorphic or anthropocentric conceptions of (self-)expression. Thus commentators like Foucault, under the influence of his misreading of Nietzsche, treat 'power' as an essentially *social* phenomenon. Foucauldian 'archaeologists of knowledge' perform pseudo-Nietzschean 'genealogical analyses' of theories or concepts that we take for granted, which (they claim) always reveal the pervasive influence of social hierarchies, institutional power dynamics, and so on. On the affirmative side, this general interpretive framework also underlies now-fashionable appeals to overt and covert hermeneutic resistance by 'subalterns', “starting off thought' from the lives of marginalized peoples,”²⁹ and so on. Thus feminist 'standpoint' theorists argue that grounding knowledge in the standpoint of women (in sexist societies) is “epistemologically advantageous”³⁰ or “epistemically privileged in some crucial respects,”³¹ if not just in general “scientifically better.”³² Nor is this interpretive approach restricted to the political extremes—although centrists typically do not frame their analyses in terms of 'power', per se. Rather, many centrist and center-left theorists associate norms of well-functioning scientific inquiry directly with norms of well-functioning liberal democracy, while adopting a corresponding conceit of 'liberal neutrality'. According to this conceit, political 'self-expression' in the mode of liberal democracy is not *will to power* or

29 Harding 1993, 56.

30 Jaggar 2004, 57.

31 Wylie 2003, 26.

32 Harding 1993, 61.

self-assertion, per se, but rather just a way of impartially arbitrating disagreements among self-interested individuals or political factions. Hence, the liberal centrist may see empirical science as an epistemological expression of universal moral equality—insofar as it relies upon evidence available to all, kowtows to no political authority or religious prejudice, etc.—but not of power.

Modern analyses of 'social and political values in science' amount to a systematic regression from Nietzsche's more radical naturalism, back into moralized anthropocentrism. It is a major virtue of Nietzsche's epistemology that he interprets the 'creative' or 'artistic' activity involved in higher modes of 'will to truth' as essentially similar in kind to the 'self-overcoming' or 'superabundant' vitality that he values in the rest of the natural world. For Nietzsche, higher modes of knowledge are neither simply 'copies' of the world nor essentially human modes of self-expression. Rather, higher modes of knowledge are human self-expression construed as just one among many higher forms of will to power in nature—many of which are 'savage' and entirely impersonal. Thus science *is* part of nature insofar as it is inherently valuable, *is* reality and not just a 'picture' of it, for Nietzsche. This feature of his account should be retained. But two other basic aspects of Nietzsche's epistemology must be abandoned or seriously modified.

First, as I have already emphasized, Nietzsche's lingering Romantic insistence upon the value of *self-expression*, or (in his terms) willing *one's own* power, must be relaxed. Self-expression is often just self-indulgence. And even to the extent that it can be valuable, self-expression is clearly not the only valuable mode of 'willing power'. So too are self-sacrifice and obedience to genuine authority—including external authority, not just one's own 'master drives'. What does it mean to will *something else's* power, let alone to do so in the context of scientific inquiry? Here I take interpersonal relationships and religious devotion to provide two intuitive paradigms. Love and friendship both involve ennobling elevation above petty egoism and the crass pursuit of self-interest. In both love and friendship, this involves receptivity to determination from without—allowing one's actions to 'express' other people's essential traits, not just one's own positive disposition towards them. But at the same time, in healthy love or friendship one is clearly never *merely* an object for the outlet of another person's 'will to power'.

Even in worshipping a deity, we ought not submit in the mode of slavish self-abnegation. We do not throw ourselves into volcanoes or intentionally drown ourselves in the ocean, simply because we are impressed by their awesome power. But we do (or at least should) recognize powers higher than ourselves, and value them. The religious believer glorifies his gods, in part

by making sacrifices to them that have real cost for himself. He also takes his own most noble acts to glorify his gods, and indeed to be influenced by them. The gods then act in and through him. Yet there is still never any doubt that the divinely-inspired man is not himself a god. He is elevated into greatness under the influence of powers beyond and distinct from himself. Likewise, then, objective scientific theory involves higher forces' 'expression' in and through us.

Here the scientific naturalist will inevitably object: *Isn't this appeal to 'divine inspiration' just a metaphor, if not an outright fantasy?* But the answer depends on what one takes the 'gods' to be. What if one could genuinely worship 'gods' that the scientific naturalist should, as such, recognize to be real? And what if scientific theory itself could be a mode of worshipping them? This is the context in which I insist upon objective scientific understanding as human beings' determination by higher, impersonal and causally fundamental natural forces. The typical scientific naturalist, or even the typical 'social constructivist', will insist that bare physical force is ethically and politically inert, hence not 'higher' in any relevant sense. I take this dismissive attitude to reflect several interrelated phenomena: a radical misunderstanding of force, fueled by modern science and philosophy; a perverse humanistic faith in our own superiority relative to the rest of nature; and a widespread inability to see values as anything but human creations—a nihilistic misapprehension of reality as a field of inert 'facts' onto which we project 'meaning'. These are all profound mistakes, which a more satisfactory theory of science must leave behind.

Second, Nietzsche's metaphysics places too much emphasis on *life*. The natural world is constituted mostly by inorganic and entirely impersonal modes of force, like fundamental physical forces. Life is simply an occasional, specialized formation of physical force—physical force which does not 'aim' at or 'will' its own organization into living systems, even merely 'ideally'. And human activity, including scientific inquiry, is simply an occasional, specialized formation of life. Nietzsche is thus wrong to identify life, construed as will to power or a drive to continual self-overcoming, as metaphysically fundamental. Nietzsche's organicist conception of will to power must be replaced by a metaphysics of power that better accommodates inorganic natural phenomena—the weight of the boulder, the cold regularity and order of celestial motions, and so forth. My notion of *force* is meant in this spirit. I aim to de-anthropomorphize and 'de-organicize' post-Kantian notions of willful activity and organic development, in order to achieve greater explanatory scope and avoid merely figurative description, while still preserving for force the kind of fundamental ontological and evaluative status that post-Kantian theorists from

Schiller and Goethe to Schelling and Hegel to Emerson and Nietzsche attributed to will or to life.

Objective scientific knowledge is a formal manifestation of fundamental natural forces, in and through human beings. The higher forces 'expressed' in objective scientific theories need not be part of these theories' representational content. Rather, they dictate what is represented in these theories, and how. In this sense, the 'expression' of higher natural forces *grounds* objective scientific representation, without necessarily being *depicted* in or *described* by it. One cannot understand science without recognizing that its deepest grounds may thus lie beyond its contents.

Philosophy need not be dispassionate in order to be true, and scientific knowledge grounded in poetic vision need not thereby collapse into wild speculation or merely figurative description. Genuine philosophers have always overcome the petty scholarly impulse towards 'seriousness' at all costs—bourgeois intellectualism's last and most perverse bulwark against 'unenlightened' culture—where deeper understanding demands this. A modern and yet still truly objective culture must pass beyond the scholar's paralytic fixation on 'critique', to a deeper embrace of scientific knowledge as a locus of indirect mythopoetic insight into elemental reality.

2. Dynamism: On Force as Reality

2.1. Reality is force. To be real is to exercise power, to be a locus of force. A thing that is only determined by higher forces, as a mere object for their outlet, is unreal—nothing but an appearance, nothing but an image of underlying reality. Objective reality is the all-encompassing field of interacting forces. This basic field is not itself a force. It is an unreal but objectively valid space, or dimensional structure, that contains all things insofar as they are objects impacted by force. Objective reality is an unreal but objectively valid representation of nature as an all-encompassing field-of-effect. Nature is real, however. Nature is the real order of primitive forces, interacting prior to any containment by embedding spaces or unifying Forms. We directly apprehend nature in poetry. And we represent nature as objective reality in science.

Impact is the effect of force. To be real is to have impact. Reality is not subjective effort, but objectively impactful force. And reality is force with impact, not on mere objects, but on

other forceful things. Impact considered abstractly, apart from its own force, is only the effect of force. Abstract impact is pure appearance. Impact abstracted also from the force that determines it as impact is pure subjective appearance. The apparent motion of the Sun in the sky is a subjective appearance of the Sun's gravitational impact on the Earth. Viewed in relation to underlying force, impact is objective appearance. The plant's power of growth is an objective appearance of the Sun's illuminating force. Objective reality is force insofar as it objectively appears as real impact, in and through that which it determines as objects. The Sun's objective reality is manifest in and through the plant's power of growth, which is determined by the Sun.

Agon and hierarchy are two basic ways in which forces interact. Agon is interaction among well-matched forces, or reciprocal determination. Real friendship and enmity are both forms of agon, as is healthy romantic love. Hierarchy is the action of superior force on inferior force, or the unilateral determination of one force as merely an object for a higher force—merely an object, not in all contexts, but within this hierarchical interaction. 'Higher' forces are stronger, more forceful forces. The Moon is a higher force than the ocean insofar as the ocean's tides are dictated by the Moon's position, but almost not at all vice versa. Describing inferior force as a 'mere object' is an *abstraction*. Higher forces never really impact mere objects. But hierarchy is real. And in real hierarchies, inferior forces are mere objects for higher forces, to the extent that they are higher. Agon is dynamic equality, and hierarchy is dynamic inequality. Dynamic equality is *natural equality*. Dynamic inequality is *natural inequality*. Agon and hierarchy are the only real forms of equality and inequality.

The Sun and plant are naturally unequal insofar as the plant 'needs' the Sun in a way that the Sun does not 'need' the plant. Marx challenges this asymmetry, under the influence of Hegelian dialectics, claiming that “[t]he sun is the *object* of the plant[...]just as the plant is an object of the sun.”³³ But Marx is wrong. While the plant (or its energy and growth) is clearly an 'expression' of the sun's 'life-awakening power', as Marx says, the sun is not an 'expression' of the plant's power. This intuitive asymmetry is perfectly real, and is philosophically significant. Marxist-Hegelian dialectics involves an unrealistic denial of natural hierarchy, bound up with a broader drive to moralize even the basic categories of metaphysical analysis. (See Appendix D.)

Moralists, whether they are overt idealists or else crypto-idealistic advocates of moralized 'materialism', view the world *subjectively*, through the lens of will-power considered apart from

33 “Critique of the Hegelian Dialectic and Philosophy as a Whole” (Marx and Engels 1978, 116).

the impact that grounds its genuine reality. The moralist thus sees humans as 'rational wills' or as loci of purely 'passionate' or 'natural' drives to freedom and equality—as pure Mind or as Moralized Bodily Desire. But rational 'willing' and moralized 'passion' are only subjective effort: the internal feeling of striving towards a purely ideal or unnatural aim that cannot be realized in the actual world. The idea is treated as the ground of action. But the deed in fact determines the ethical ideal. 'Rational will' and 'moral passion' are subjective appearances of real will-power.

The real—the 'really real'—is that which explains and underlies appearances. The real is the fundamental, the basic, the elemental, the essential ground of all else. The real is that which determines things, whether it be other things or itself, as its mere appearances. The real is that which exercises power in relation to its objects, in this sense. And the reality of that which is real is this exercise of power. The real is force. Reality itself, the Being of beings, is force.

Force is amoral: neither morally good nor morally bad. Force is beyond good and evil, as Nietzsche says, but not therefore beyond all ethical value. We, as natural beings, live beyond good and evil. We value amorally. We know this, in many cases, although we often refuse to admit it. If we do acknowledge our instinctive amorality, we diagnose it as original sin, or (perhaps now more often) as the sign of artificially-imposed hierarchies and cultural bias. In the scientific domain, likewise, we look to reduce nature to a field of mere objects: material things that physically condition without spiritually determining the meaning or the value of our actions. We recognize power only in the mode of our own rationality or freedom—to act in relation to a mere ideal of universal humanity, and to theorize in relation to a mere ideal of the law-governed unity of nature. We degrade real arational passions; we indiscriminately impute equal 'moral worth' to the spiritually noble and ignoble alike; we fail to understand our own power of intellect; and we casually dismiss our comprehensive determination by impersonal forces as irrelevant, or else as a 'problem' to be 'solved' by technocratic strivers. We deny reality. Why?

2.2. To be sure, some canonical philosophers have gestured at the identity of force and reality. In Plato's *Sophist*, the Eleatic Stranger suggests that “the definition of being [*onta*] is simply power [*dunamis*].” That is, “anything which possesses any sort of power to affect another, or to be affected by another, if only for a single moment, however trifling the cause and however slight the effect, has real existence.”³⁴ In a broadly similar spirit, Leibniz claims in his

34 Plato, *Sophist* 247e.

Specimen Dynamicum (1695) that “to act is the mark of substances [*agere est character substantiarum*],”³⁵ elaborating elsewhere that “[e]very individual created substance exerts physical action and passion on all the others.”³⁶ Perhaps most notoriously, but also most directly to the point, Nietzsche envisions an all-pervasive 'will to power' [*Wille zur Macht*]:

This world: a monster of energy, without beginning, without end[...]a sea of forces flowing and rushing together, eternally changing, eternally flooding back, with tremendous years of recurrence, with an ebb and a flood of its forms; out of the simplest forms striving toward the most complex, out of the stillest, most rigid, coldest forms toward the hottest, most turbulent, most self-contradictory, and then again returning home to the simple out of this abundance, out of the play of contradictions back to the joy of concord, still affirming itself in this uniformity of its courses and its years, blessing itself as that which must return eternally, as a becoming that knows no satiety, no disgust, no weariness: this, my *Dionysian* world of the eternally self-creating, the eternally self-destroying, this mystery world of the twofold voluptuous delight, my 'beyond good and evil,' without goal, unless the joy of the circle is itself a goal; without will, unless a ring feels good will toward itself—do you want a *name* for this world? A *solution* for all its riddles? A *light* for you, too, you best-concealed, strongest, most intrepid, most midnightly men?— *This world is the will to power—and nothing besides!* (*WP* 1067 [1885])

Nor is will to power just an ultimate substance or entity, for Nietzsche, like a basic physical particle or field. Rather, the theory of will to power is in part ontological, in Heidegger's sense: an account of the reality of that which is real—i.e., of what it is for things *to be*, to *have being*. “[L]ife itself simply *is* will to power” (*BGE* 259), on Nietzsche's view; and in turn “Being—we have no idea of it apart from the idea of 'living',” for “[h]ow can anything dead 'be'?” (*WP* 582).³⁷

None of this is to say that Nietzsche's 'will to power' [*Wille zur Macht*] is the same as the

35 Leibniz 1989, 118.

36 'Primary Truths' (1686?) (Leibniz 1989, 33). Cf. John Earman's broader remark that “[t]he Leibniz corpus, like the Bible, can be cited in support of almost any idea [...]” (Earman 1989, 17).

37 See Heidegger 1991a/b. While some commentators interpret Nietzsche as attributing a will to power only to things that are alive in an intuitive sense, he occasionally suggests that the will to power is literally *everywhere*. E.g. “[L]ife is merely a special case of the will to power” (*KSA* 13:14[121]). Besides *WP* 582, see Richardson 1996, 18 n.4 for further examples. Nietzsche can thus arguably be viewed as a kind of radical organicist—Heidegger brings this out, as well.

A methodological note: while I make fairly wide use of Nietzsche's unpublished notes, particularly regarding the will to power, I aim to do so in a manner consistent with Brian Leiter's suggestion that this material “should only supplement, not constitute, the core of an interpretation” (Leiter 1995, 113 n.1). Here I proceed in the spirit of John Richardson's effort to “show[] how well ... [Nietzsche's] thoughts can be clarified by being organized systematically around th[e] partly concealed core” of his theory of will to power (Richardson 1996, 9). Cf. Magnus 1986, 1988.

Eleatic Stranger's 'power' [*dunamis*] or Leibniz's 'action' [*actus/agere*], or that any of the three align completely with force, as I view it. They do not. For example, *dunamis* has connotations of potentiality or mere capacity that I strongly wish to avoid. But I aim to systematically develop a thesis that is nevertheless recognizably similar in spirit: *to be real is to be a locus of force*.

Nietzsche's theory of will to power is perhaps closest to my own account of force, but is unacceptable as it stands. Nietzsche's view remains to some extent nihilistic, even though his is a genuinely impassioned, truly higher kind of nihilism. Namely, Nietzsche offers a proto-existentialist and semi-nihilistic account of values as the 'artistic' products of human creative genius, which reflect the systematic 'falsification' of reality in the image of value-creators' constitutive 'drives' [*Triebe*]. This Nietzschean view is evocative of a now-commonplace kind of atheistical materialism: a vision of reality as a field of intrinsically valueless objects or mere matters of fact, onto which human beings in turn creatively 'project' meaning. Less psychologically, however, and more deeply, Nietzsche's theory of will to power can also be understood as a theory of reality: a vision of the world as pervaded throughout by an inherently valuable vital force or drive to 'self-overcoming'. This notion of universal 'self-overcoming' is descendent from earlier Romantic accounts of life as that which incessantly surges out beyond itself, with a creative energy taken to ultimately underlie all natural process. Nietzsche rightly works to eliminate the teleological dimension of strictly Romantic notions of organic development and (closely related) post-Kantian idealistic notions of will. But his notion of will to power nevertheless remains excessively organicist—too closely bound up with life, self-expression, and continual development to be plausibly applicable to all of reality. Reality is not just vital force, but force more generally, including inorganic force insofar as it is implicated in the 'cold' order and precision of fundamental physical law. Reality is not Nietzschean will to power, or 'self-overcoming' construed as the 'law of life', but rather force. Force has intrinsic value. And human creativity is not the only or the highest exertion of force. In truly objective forms of cultural production, the human creator genuinely 'expresses' his own individual or social force only insofar as he is also determined from without by inhuman natural forces, higher than any mere force of sociocultural or political-economical determination.

2.3. 'Force' denotes several things, of course, in everyday language. It can denote compulsion, violence, or constraint. Perhaps it especially connotes purely physical modes of

compulsion, but certainly not exclusively so—e.g. consider the emotional force of a melody, or the intellectual force manifest in a great work like Newton's *Principia*. 'Force' can denote strength, or energy, and especially their active expression. It can denote power, or power's active expression. It can denote power to induce change, specifically, and especially changes in place (i.e. motion), in motion (i.e. acceleration), or in momentum. And it can denote a fundamental physical interaction, as in gravity, electromagnetism, or the strong and weak nuclear forces.

Most intuitively, force is simply related to *impact*—to *having an effect*. Most intuitively, that is, a force is simply a *real cause*. This is how I have characterized force above, in essence. Force is just the objectively impactful exercise of power. Any real causal power, when actively expressed, produces real effects. Likewise, as I elaborate at length below, young children seem to understand force simply in terms of *activity* or *doing something*. Perhaps they are not so wrong. Perhaps we would benefit from adopting a more childlike—which is not to say childish—attitude towards force. Perhaps children and 'prescientific' man know force better than does enlightened man. Perhaps enlightened notions of force are *sublimated, all too sublimated?*

More intuitive notions of force may seem so thin or so diffuse as to be useless for the purposes of rigorous metaphysics, let alone those of empirical science. After all, modern physics carefully distinguishes force from momentum, from energy, and from work, even if ordinary language or prescientific consciousness does not. And whereas metaphysical theory may conceptualize force as impact in general, or as (the generic cause of) change, action, or resistance,³⁸ modern physics associates force with change of momentum, specifically. But how, exactly, does the specificity of modern scientific notions of force bear on the viability of Nietzsche's vision of the world as 'a sea of forces flowing and rushing together'? Why does his proclamation that “Everything is force [*Alles ist Kraft*],”³⁹ or my own claim that reality is force, seem so different in spirit from standard physical scientific claims that all natural phenomena arise from the law-governed operation of fundamental forces? Is it so different? Must it be?

2.4. The identity of reality and force is not Romantic, exactly, although it is related to a certain kind of 19th-century Romantic impulse. The Romantic organicist imagines reality as life,

38 E.g. in his *Principles of Philosophy*, Descartes refers to “the force of each body to act against another or to resist the action of that other.” He suggests in turn, incidentally, that this universal bodily force consists in “the single fact that each thing strives, as far as is in its power, to remain in the same state” [Part II, principle 43; Descartes 1982, 63]. This notion of self-preservative 'striving' of course influenced Spinoza's later doctrine of '*conatus*'.

39 KSA 10:1[3] [1882].

and thus views the world as pervaded by vital force or organic form.⁴⁰ But life is not the basis of reality. Vital force is only one real kind of force. Not all real things are alive, and 'Nature' is not a real organic whole. Romantic idealists imagine reality as willful activity or creative self-expression, whereby subjects—and ultimately one all-encompassing Subject—render themselves concrete or objectively real.⁴¹ Thus, in acting so as to realize a goal, we make the 'world' conform to our 'mind'. But we also render ourselves objective in theoretical contemplation of humans and the rest of nature, idealists claim, insofar as we thereby apprehend our ultimate identity with nature. (Imagine 19th-century quasi-secular evangelical psychedelia: the 'Cosmos', a 'World Soul', and the like.⁴²) Post-Kantian idealism thus posits 'dialectical' syntheses of mind and body, subject and object, universal and particular.⁴³ But willful activity is not the basis of reality. The exercise of real will-power is only one real kind of force. Not all real things have will, let alone consciousness. 'Spirit' is certainly not a real Subject achieving Self-Knowledge through us. Nor does nature objectively conform to any real 'Idea'.⁴⁴

Romantic idealism and organicism are often interrelated through specific notions of *form*. Romantic organicists see life as 'formative force', or else as holistic organic form towards which mechanistic physical interaction (they claim) teleologically aims—the archetypal leaf-structure that is only concretely realized as an infinite process of development between 'moments', Nature construed as a systematic whole, and so on.⁴⁵ Qua idealists, in turn, Romantics see the systematic

40 See e.g. Richards 2002 for a helpful, overarching study. On vital force, note his account of *Bildungstrieb* in Blumenbach and *Lebenskraft* in Reil and Humboldt (Richards 2002, 216–229; 255–261). See also Larson 1979.

41 Compare Friedrich Schlegel's views on poetry and creative expression in Schlegel 1968 and Schlegel 1971.

42 E.g. consider Friedrich Wilhelm Joseph von Schelling's *Von der Weltseele (On the World Soul)* (1798), and Alexander von Humboldt's five-volume *Kosmos* (1845–1862) (Schelling 1806; Humboldt 1845–).

43 Beiser (2003a, 69–70) summarizes the core philosophical underpinnings of this idea: “Beginning in 1796 the notebooks of the *Philosophische Lehrjahre* show how [Friedrich Schlegel] was moving towards a doctrine he called—years before Schelling and Hegel—'absolute idealism.' According to this doctrine, everything in reality conforms to reason, which consists in the forms, ideas, or purpose of things. There is no fundamental difference between the objective and subjective because both are differing degrees of organization and development of a single rational activity, which acts through constantly dividing what is one and uniting what is divided. In the later notebooks Schlegel's concept of reason becomes much more complex. It is no longer simply identified with the Platonic eros [...] Still, the Platonic provenance of his concept remains: reason is the intelligible structure of things, what we perceive in beauty through the power of intellectual intuition.” See also Beiser 2003b.

44 Cf. “It is indeed correct that romantic epistemology and metaphysics is better understood as a reaction against Kant's and Fichte's idealism, and that it must not be conflated with the grand speculative systems of Fichte, Schelling, and Hegel. It does not follow from these points, however, that *Frühromantik* is a rejection of idealism *tout court*. Indeed, given the Platonic legacy of *Frühromantik*, it is possible, even necessary, to regard it as its own form of idealism. Following the usage of Schlegel and Schelling, we could call it an *absolute* or *objective* idealism. It is idealism not in the sense that everything depends on some self-conscious subject, but in the sense that everything conforms to the idea, the purpose, or the *logos* of things” (Beiser 2003a, 66).

45 “[The romantics] were no less naturalistic than Spinoza: they too affirmed that everything is within nature, and that everything in nature conforms to law.[...]It is not that there are special organic laws, which are somehow

forms towards which these processes 'aim' as, literally, *ideas*. (While ideas are apparently linked to ideating *subjects*, 'objective' idealists insist upon the ideality or essential rational intelligibility of reality, arguably without positing any underlying Subject for whom Nature appears as an Idea.⁴⁶) But 'formative force' is not the basis of reality. Physical forces do not 'aim' to produce any kind of structures, let alone organic forms, even 'ideally'. Insofar as physical forces yield organic form, it simply *emerges*. Natural processes are not directed towards ideas. Even where organic forms do emerge, this does not prove their real causal power as the Spiritual *logos* or essential rationality of nature, let alone their appearance for a real Mind. Organic growth or creative development is not the fundamental principle of the natural world. Romanticism is mystical, and vitalism is un-scientific. Pure dynamism is not.

2.5. A different account of reality will strike many readers as far more intuitive. According to widespread belief, namely, to be real is to exist. *'Everything that exists is equally real, and reality itself is just existence—if 'reality' is anything at all!'* modern man proudly declaims against much of the metaphysical tradition. But the real is not just that which exists. Plato rightly never meant to claim that the Forms are 'really existent' or 'more existent', when he characterized them as 'really real Being' [*ousia ontōs ousa*],⁴⁷ 'more real' [*mallon onta*] than the sensible particulars that participate in them.⁴⁸

The conflation of reality and existence immediately runs aground against the problem of

beyond the jurisdiction of mechanism; rather, it is that mechanism is subordinate to organicism. The mechanical is simply a limited case of the teleological, deriving from a partial perspective that considers only the parts in their immediate conditions; but it does not ask for the whys and wherefores of these initial conditions in the first place; instead, it allows the series of causes to regress *ad infinitum*" (Beiser 2003a, 150).

46 "[Hölderlin, Novalis, and Schlegel] attacked [Fichte's] idealism for its subjectivism, more specifically for its conception of the principle of subject-object identity as residing in the ego or subject alone. To overcome the one-sidedness of Fichte's subjective idealism, they insisted on complementing it with Spinoza's realism or naturalism. If the absolute were subject-object identity, they argued, then it should be possible to conceive it as both objective and subjective, as both real and ideal. The argument is most explicit in Schelling's 1800 *System des transcendentalen Idealismus*; yet it was already implicit in the fragments of Hölderlin, and in the notebooks of Novalis and Schlegel, as early as 1796" (Beiser 2003a, 78). On Fichte, in relation to Kant, see Beiser 1987.

47 *Phaedrus* 247e.

48 *Republic* 515d. See Vlastos 1965, 1966; Guthrie 1975. Representatively: "Plato does not believe that while the Form does exist, its sensible instances do and do not. In the *Timaeus* (52A) he declares 'that there are first, the unchanging Form... ; second, its namesake and like, generated, ever changing, ... ; third, Space ...' In full view of the greater reality of the Form, and the lesser reality of the other two members of the trio, Plato says that all three *exist*, and says it again without qualification a few lines later (52D 2-4)" (Vlastos 1966, 11). "What did [Plato] mean when he said in the Cave simile that puppets are 'more real' than their shadows [*mallon onta*, 515d]? What indeed do we mean when we say that a man is more real than his shadow? Not, perhaps, that he exists more than his shadow, or even that he is more 'genuine', but that the shadow's existence is a secondary one, dependent on the existence and presence of the man and a source of light" (Guthrie 1975, 497-8)

subjectivity. Many things that exist do so merely as appearances for subjects. And although subjective phenomena exist, nevertheless they are less real. The bloody dagger that Hamlet hallucinates, with its handle pointing toward his hand, does exist in his mind. But it is merely ideal. It is less real than the poisoned blade with which he later delivers a death blow to Laertes. The hallucinated dagger impacts Hamlet, to be sure, motivating his plot for revenge, in part, and perhaps even partly determining its fated outcome. To this extent, hence as mediated by Hamlet, the hallucinated dagger is objectively real. But the physical blade alone cuts. And in this respect it is more real. Subjective phenomena may well exist, but objective phenomena are more real.

Nor is reality simply mind-independent existence. Subjective phenomena are not always non-existent, and subjective representations are not necessarily inaccurate. Objective reality is not simply existence, and objective validity is not simply truth or epistemic justifiability. A description of the world comprising nothing but perfectly accurate statements about mind-independent things directly observable by human beings—e.g., trees, thunderclouds, and the slope of mountains, but not photosynthesis or electrons or the curvature of space-time—could well be a subjective worldview. This is not because sensory perception presents us 'merely' with concrete particulars, or with qualities like color and smell that appear to us but not to all conceivable subjects. Rather, this type of description is (scientifically) subjective insofar as its selective focus on humanly-observable things reduces its explanatory power. Regardless of its significance for empirical scientific epistemology, the threshold of human observability is not an especially load-bearing 'joint' in the explanatory structure of nature.⁴⁹ Imperceptible things are neither less real nor more real than sensible things, generally speaking, although *physical scientific* objectivity does involve the systematic explanatory subordination of observable phenomena to an underlying unobservable reality. More fundamental aspects of reality can also appear *sensuously*, however, as in aesthetic experience. A fully objective perspective is not a 'view from nowhere' onto bare facts, but a view from elemental reality onto its own appearances.

To be clear, the 'view from nowhere' is interpreted in two main ways, neither of which is compelling: first, as the standpoint we inhabit whenever we assert facts about the way mind-independent things are, independently of the way they appear merely to certain kinds of perceiving subjects; and second, as a God's-eye or Mind's-eye view. Many now accept the former view, and find the latter bizarre or metaphysically otiose. But the banal 'fact-reporting'

49 The 'joint of nature' metaphor is familiar via Plato (*Phaedrus* 265e).

view is conceptually and intellectually-historically descendent from the otiose 'God's-eye view'. At any rate, the 'fact-reporting' view is too weak to ground a true account of objectivity, and the 'Gods-eye view' is both impossible and an unworthy goal.

To the former point, again, a description of the world comprising nothing but perfectly accurate statements about mind-independent things observable by human beings—e.g., trees, thunderclouds, and the slope of mountains, but not photosynthesis or electrons or the curvature of space-time—would evidently be a subjective worldview, from a scientific perspective. Here it might be objected that the individual statements in this theory could all be objectively valid, even if the theory as a whole is not, insofar as the theory shines an anthropocentric 'spotlight' onto reality and so reveals a *subjectively*-selected subset of *objective* truths. This may sound reasonable, but it raises a question: what is an *objectively*-selected subset of objective truths? The account of objective vision as the viewpoint of no-kind-of-subject-in-particular yields no acceptable answer—and arguably no answer at all, even though the tree-thunder-mountain theory in question is obviously subjective. Perhaps it suggests that a maximally objective point of view includes *all* factual truths about the world. But while some may find this plausible, it is not. Listing 'everything that is the case' is not objective, just indiscriminate. My account does better: objectivity requires us to disclose fundamental aspects of reality, paring away inessential facts, and considering them only insofar as they are systematically grounded in fundamental reality.

This brings us to the second interpretation of the 'view from nowhere'. Nietzsche was right to insist that the quest for 'disinterestedness' often reflects a perverse drive to self-abnegation—an otherworldly impulse to escape the perspectival 'limitations' that in fact define our real natures and distinctive value, in attainment to the serene viewpoint of the Nothing into which all too many secretly wish to be released. Sometimes it clearly does. But it need not, at least so overtly. Indeed, the 'view from nowhere' is arguably a kind of 'God's-eye view', and the impulse to attain a God's-eye view is in some sense highly anthropocentric, even if the resulting image of the world is not anthropomorphic. To privilege the perspective of an infinite Mind, unconditioned by sensuous desire, is evidently to exalt an ethically-loaded image of ourselves as essentially rational beings—to worship ourselves as freely self-determining spirits or minds.⁵⁰

50 Here one might object that to think of God as a disembodied Mind, but humans as embodied, is not to worship *ourselves* as disembodied minds or essentially (just) rational beings. But this is to misunderstand the charge of psychological projection. Feuerbach himself acknowledges that there is an obvious sense in which “God is not what man is” and “man is not what God is”: man is finite, imperfect, temporal, weak, and sinful; whereas God is infinite, perfect, eternal, almighty, and holy (Feuerbach 1841/1957, 33). Yet despite this apparent difference,

This anthropocentrism is thinly veiled by a projection of our own rational faculties onto the external world, mediated by the concept of a personal God, infinite Mind, or universal Spirit. As Feuerbach and Marx argued, that is, consciousness of God—or Nature viewed in the image of God—is at root an alienated mode of human self-consciousness. (This is true with respect to the God of the Judeo-Christian tradition, as Feuerbach and Marx claimed, but it is not equally plausible with respect to all anthropomorphic deities of historical world religion.⁵¹) The 'absolute idealism' developed most fully by Schelling and Hegel made the link between the 'view from nowhere' and Christian conceptions of divinity unusually explicit. But this was only the apotheosis of a far broader modern quest for objectivity in the form of unconditioned knowledge. Post-Kantian idealism was simply the most systematic attempt to embed the ideal of a view from nowhere within the Christian tradition of rational theology that has been its implicit ground throughout modernity. Hence, the value of objectivity traditionally construed stands or falls with the value of rationalistic theories of human nature. The view from nowhere is not really the view of no-kind-of-being-in-particular. It is the view of a purely rational being. The view from nowhere is thus impossible insofar as a purely rational being would be an unreal, supernatural, merely ideal being. And it is inherently valuable only insofar as (purely epistemic) rationality is.

All of this is consistent with Nietzsche's point, however, if one accepts that rationalistic theories of human nature stem from a self-abnegating 'will to nothingness'. And this is Nietzsche's view, in fact, as well as my own. Plato's love of the Forms is a displaced hatred of the real world—the physical reality he dismisses as merely the shadowy 'imitation' of an underlying domain of pure intelligible Being. Likewise, in seeing all human beings as equal moral subjects, the moralist does not see real humanity, but only its ghostly intellectualized shadow—abstract 'spirits', 'noumenal souls', 'rational egos', and the like.⁵² In constructing the

God's attributes are ultimately just “our positive, essential qualities, our realities,” projected beyond all actual human limitations by our understanding in the fullest expression of its abstractive power (ibid., 38-9, see also ibid., 98). God is humanity “purified” of all features of real human existence that the religious believer sees as evils or imperfections (ibid., 181). In this light, it is clear that God's disembodiment is believers' vision, not of how humans *are in all respects*, but of how it is *best for us to be*—and moreover of how we are *insofar as we have immaterial souls*, i.e., insofar as we are *humans* rather than just *animals* or merely sensuous beings.

51 Unlike many anthropomorphic deities, the Judeo-Christian God seems to epitomize only virtues seen as uniquely human: this God operates mainly in the mode of a rationally self-determining Mind unconditioned by passions, always acts with perfect moral benevolence towards all things, etc. This tendency is arguably most pronounced in Christianity, although this is not to claim that Old Testament wrathfulness vanishes, except perhaps in Christ.

52 Needless to say, in making this claim I am not endorsing systems of social hierarchy grounded in race, gender, class, etc. But I am insisting that not all individuals have equal worth—strictly within a given race, gender, or class, for example, some individuals clearly demand more respect than others. (In the name of good taste, I will leave it to the reader to imagine concrete examples of this.) Hence, I endorse an *amoral* system of ethical value.

illusory ideal of a purely rational perspective, Platonists and their Judeo-Christian or secular humanistic descendants denigrate all real perspectival vision. I take it that this is a central part of Nietzsche's point when he claims that “it meant standing truth on her head and denying *perspective*, the basic condition of all life, when one spoke of spirit and the good as Plato did.”⁵³ Thus his diagnosis of Judeo-Christian morality as “Platonism for 'the people',”⁵⁴ a democratized rationalism emerging from this same hatred of real amoral nature, and real amoral man.

The traditional 'view from nowhere' purports to be the 'unconditioned' perspective of 'no-kind-of-being-in-particular'. In fact, it is often interpreted as the perspective of a purely rational being, at least implicitly. But this 'Mind's-eye view' is unreal, and a bad ideal in the first place.

Although Plato clearly saw that bare existence is not enough to constitute something as fully real, he, too, was wrong about the basic nature of reality. The most real, the ultimate ground of objective validity, is not the universal or the purely rational. The real is not Platonic Form—e.g. the ideal Bed in which all concrete particular beds 'participate', and of which pictures of beds are in turn mere 'appearances of appearances'. The real is not that which exists as an Idea for infinite Mind. Nor is the real the unknowable thing-in-itself of Kantian idealism. Nor is the real the generic phenomenal object of human cognition. Nor is the real that which appears only to specific social collectives, let alone to individual members thereof. Nor is the real the entirety of things that exist. The real is not 'everything that is the case'. The real is not the 'empirical'. The real is not Nature viewed as an all-encompassing systematic whole. The real is not God.

The real—the 'really real'—is that which explains and underlies appearances. The real is the fundamental, the basic, the elemental, the essential ground of all else. The real is that which determines things, whether it be other things or itself, as its mere appearances. The real is that which exercises power in relation to its objects, in this sense. And the reality of that which is real is this exercise of power. The real is force. Reality itself, the Being of beings, is force.

2.6. Every real, truly distinct kind of thing is distinct only insofar as it is the locus of a distinctive mode of force, or way of impacting things. Electromagnetic force and gravity have different structural forms, for instance, such that gravity dominates at large scales. Colors impact us and other animals differently than do sounds. Within musical form, even, rhythm and pure tone impact us differently. Likewise, every real individual thing is distinct from other real

53 *Beyond Good and Evil*, Preface (Nietzsche 1886/1966, 3).

54 *Beyond Good and Evil*, Preface (Nietzsche 1886/1966, 3).

individuals only insofar as it is the locus of an individualized mode of force. Thus Goethe's real historical impact is distinct from Alexander the Great's—more sublimated, perhaps, superficially more 'spiritual' and more purely 'creative'. Forces are not objectively distinguished 'in themselves', apart from their impact on things. Rather, forces are objectively distinguished in relation to their objects, as real grounds of impact.

The identity of reality and force is far from counter-intuitive. It is extremely intuitive—so much so that it may seem childish or naive. But it is not therefore wrong. It just has the simplicity of the elemental, and the clarity of all primordial knowledge. It is obviously true. That the identity of reality and force is in one sense obvious, however, does not mean that there is nothing to be gained by examining it more closely, and systematically.

I will systematically draw out the implications of the identity of reality and force, with special attention to its bearing on the relationship between three phenomena: *interaction*, encompassing agon and hierarchy; *extension*, encompassing shape and space; and *appearance*, encompassing objective and subjective appearance. Extension and appearance are both clearly related to *form*: 'form' commonly denotes both extension (e.g. shape or structure) and that-which-appears. Nor is this an accident of language. Extension and appearance are interrelated, and the ground of this interrelation is force. Unreal but objectively valid structures are *fields*. Objective fields are the pure extensive impact or structural appearance of real forces. Objectively valid spaces are a species of objective field, viz., the pure extensive impact of universal forces: abstract images of real structures that universal forces produce in their objects. But this is to anticipate issues that will naturally arise only later. For now, another issue is more pressing:

'Power' and 'force' have become almost synonymous with evil, for us, almost identical to morally arbitrary compulsion and unjust domination. We therefore wish that reality were not force. We tell ourselves, often in bad faith, that it is not. We act as if all it took to be real were to exist, or as if our moral ideals were more real than any amoral natural force could be. To the extent that we acknowledge the ubiquity of arational forces in modern science, we insist that they are ethically inert and politically meaningless.⁵⁵ We fail to know ourselves, and to value

55 A. L. Hammond (1969, 9) rightly notes that notions of “reality, of the relatively more real, and the natural as the existent: hence the independent, the enduring, the more than subjective, the nonartificial, the effective, the affected, the important, what is there ... ” are all “‘good’ notions,” i.e. have positive valence. Likewise, W. T. Stace (1952, 127) argues that “there exists in the human mind an ineradicable tendency to identify value with reality—that is, if value is here understood as the supreme value of divine blessedness.” Is identifying reality with value, in this way, a simple 'naturalistic fallacy'? No, it is not. The real is not the merely factual or simply existent. Hence to infer value from reality is not to infer an 'ought' from a mere 'is'. That said, methodologically, I

ourselves as we truly are. We fail to understand nature, and wrongly set ourselves above it. We spurn reality. We hate force, or at least we often act as if we do. But why? Why do we deny the obvious? Why do we not accept force as reality? Why do we degrade force, and not value it?

3. Control-Freaks and Moralistic Force-Denial

3.1. As modern we fear power, and so always attempt to control it. Encased in modern society and molded by its fetish for self-regulation—for 'comfort' in universal freedom from compulsion by force—our stomachs turn at the sight of blood, or any cry of pain. We demand that our meat be pre-cleaned, post-dated, and plastic-wrapped. We demand that our state-sanctioned executions be performed by compassionate technicians administering sedative-laced injections to minimize the suffering of their hapless 'patients'. We demand that our military actions be distant and precisely-targeted strikes carried out by remotely-operated drones. We demand that our helicopter-parents carefully manage our children's lives so that they experience the least resistance and the most affirmation possible. To be sure, we also acknowledge the absurdity and hypocrisy of these postures, in guilt-wracked moments of partial self-awareness. We solemnly apologize and, as always, call for progressive reform. But these absurdities are entirely our own. They stem from our nature as an excessively refined and 'sublimated' culture, as thoroughly *civilized*. Our grumbling and self-satire rings hollow. This moralized self-flagellation and these glib expressions of guilt are also entirely our own: the internalized petty cruelty corresponding to our external repression. We are modern—all too modern.

The modern fear of power also manifests in our attitudes towards natural science. This includes both how we view the world as described by science, and how we view the scientific endeavor itself—for instance, in accounts of the nature and value of theoretical contemplation. On the ontological side, again, beholden to a perverse conception of modern science, we often seek to reduce nature to a field of mere objects that physically condition without spiritually determining the meaning or the value of our actions. We recognize power only in the mode of our own rationality or moral freedom, and hence casually dismiss our systematic determination by inhuman natural forces as ethically and politically insignificant, in itself. We insist upon a 'fact-value' divide, because this denuded vision of reality allows us to feel 'above it all', secure in

certainly begin with the dual premises that (1) *science tells us about reality* and (2) *the real world is valuable*.

our 'spiritual' autonomy even though as we know that as 'empirical' beings we are always heteronomous. We fear real power, and so pretend that we 'transcend' the order of natural force.

Traditional accounts of theoretical contemplation often reflect the same basic fear of powers beyond our control. The Platonic idealist seeks release from natural flux via intellectual communion with eternal Forms. But these Forms' apparent 'power' over particulars—e.g. the appearance that all physical beds 'participate' in, or are 'rationally determined' by, the ideal Bed—is only her own power of abstraction. And the world of particulars she seeks to leave behind is precisely the world in which she is a finite being, destined for death and cast about in spite of her 'will' by higher forces. (Plato is not 'modern', in the relevant sense; but he is one major historical influence on the development of modern thought, partly in this respect. These relations will become clearer below.) The idealist fears that, as a natural being, he is unfree. In exalting contemplation of ideal forms or universal principles, he reveals a deeper longing for 'spiritual' elevation up from 'animal' desire and impersonal force, up from bondage into freedom.⁵⁶

Thus Schiller claims that when Man is in his merely “*physical* condition, subject to the power of Nature alone,” the “world to him is merely destiny, not yet object; everything has existence for him only insofar as it secures existence for him; what neither gives to him nor takes from him, is to him simply not there.”⁵⁷ By contrast, contemplation or reflection [*Die Betrachtung (Reflexion)*] is “man's first free relation to the universe which surrounds him”:

If desire directly apprehends its object, contemplation thrusts its object into the distance, thereby turning it into its true and inalienable possession and thus securing it from passion. The necessity of Nature which governed him with undivided power in the condition of mere sensation, abandons him when reflection begins; an instantaneous calm ensues in the senses; time itself, the eternally moving, stands still while the dispersed rays of consciousness are gathered together, and *form*, an image of the infinite, is reflected upon the transient foundation.[...]From being a slave of Nature, so long as he merely perceives her, Man becomes her lawgiver as soon as she becomes his thought. She who had formerly ruled him only as *force*, now stands as *object* before the judgment of his glance. What is object to him has no longer power over

56 Compare also Feuerbach: “The free, abstract thinker knows nothing higher than freedom; he does not need to attach it to a personal being; for him freedom in itself, as such, is a real positive thing. A mathematical, astronomical mind, a man of pure understanding, an objective man, who is not shut up in himself, who feels free and happy only in the contemplation of objective rational relations, in the reason which lies in things in themselves—such a man will regard the substance of Spinoza, or some similar idea, as his highest being, and be full of antipathy towards a personal, *i.e.*, subjective God” (Feuerbach 1957, 99).

57 *Letters on the Aesthetic Education of Man (AE)*, Letter 24 (Schiller 2014, 113).

him; for in order to be object it must experience his own power[...]Man is superior to every terror of Nature so long as he knows how to give form to it, and to turn it into his object. Just as he begins to assert his self-dependence in the face of Nature as phenomenon, so he also asserts his dignity in the face of Nature as power, and with noble freedom he rises up against his deities.⁵⁸

Insofar as science is essentially related to theoretical contemplation, then, modern thinkers like Schiller take it to be an expression of human freedom. We express our freedom, on this view, in part by cognitively appropriating the external world—including the natural forces that physically determine us—using our power of reason. We reveal universal law or intelligible form in nature, and thereby show that *it* must conform to *our* nature (as rational beings), rather than vice versa.

As Schiller emphasizes, notably, this 'freedom' is not just freedom from determination by *external* powers in the natural world, but also freedom from determination by *our own passions or arational desires*. That is, modern critics often claim that scientific cognition or theoretical contemplation involves a kind of ennobling freedom from desire or 'disinterested' state of calm. Robert Boyle provides a clear formulation of this view in his *Occasional Reflections* (1665):

Whereas, though my inclinations for Astronomy make me so diligent a Gazer on the Stars, that in spite of my great Obnoxiousness to the inclemency of the nocturnal air, I gladly spend the coldest hours of the night in contemplating them ; I can yet look upon these bright Ornaments of Heaven it self, with a mind as calm and serene, as those very nights that are fittest to observe them in. I know divers men for whom Nature seems to have cut out too much work, in giving them, in an unconfinedly amorous disposition of mind, strong Appetites for almost all the fair Objects that present themselves to their sight : These amorous Persons may be, I grant, very much delighted when they first gaze Upon a Constellation of fair Ladies, but the Heart commonly pays dear for the Pleasure of the Eye, and the eager desires that Beauty creates, are in such men excited too often not to be frequently disappointed, and are wont to be accompani'd with so many jealousies, and fears, and repulses, and difficulties, and dangers, and remorse, and despairs, that the unhappy Lovers (if those that love more than one can merit that Title) do rather languish than live, if you will believe either their own querulous words, or their pale and melancholy looks, which would make one think they were just entring into the Grave, or had been newly digged out of it. Whereas a person that has his Affections, and Senses, at that command, which Reason and Religion require, and confer, can look upon the same Objects with pleas'd but not with dazl'd Eyes : He considers

58 *AE*, Letter 25 (Schiller 2014, 120–121).

these bright and curious Productions, as fair animated Statues of Nature's framing, and contenting himself to admire the workmanship, adores onely the Divine Artificer, whose infinite amiableness is but faintly shadow'd forth even by such lovely Creatures. And therefore what has been said of Mistresses, may be more justly applicable to all the other Objects of Men's too eager Passions. To be short, looking upon these curiouset Productions of Nature, with a Philosopher's and a Christian's Eyes, he can cast them on those bright Objects with pleasure, and yet withdraw them without trouble, and allowing Beauty to contribute to his Delight, without being able to create him any Disquiet ; though it afford him a less transporting Pleasure than it somtimes do's the Amorist, yet, all things consider'd, it may afford him a greater Pleasure, by being more innocent, more untroubl'd, and more lasting ; And there may be such a Difference betwixt the Contentment of this calm admirer of Beauty, and that of a greedy and unconfin'd Prostituter of his Heart to it, as there is betwixt the unquiet Pleasure that the sight of the Stars gives to this Child, and the rational Contentment it may afford to an Astronomer.⁵⁹

Here Boyle contrasts the Astronomer's more 'calm and serene' form of 'rational Contentment' against both the 'unquiet pleasure' of the Child and the 'strong Appetites' or 'eager desires' of 'amorous Persons'. The anti-sensualistic dimension of this account is overt: in privileging 'rational' pleasure, Boyle clearly elevates 'reason' over 'sense', 'mind' over 'body', and so forth.

This anti-sensualism, too, reflects the modern fear of power. Passions are natural powers.⁶⁰ The modern philosophical conceit of 'rational desire' or 'will', as opposed to passion, reflects a misguided impulse to deny that we are internally driven by our own force or power. The modern philosophical rationalist insists that our actions should be *justified*, not merely *caused*. She fails to truly come to terms with the fact rational justification, too, is grounded in power. Our drives produce the 'justifications' that we offer. Our justifications are just 'expressions' of our own internal drives, or else 'expressions' of external forces acting in and through us. As modern, we hate, fear, and deny this. We wish to control ourselves, to manage and regulate our own drives, as if we were 'rational egos' looking down upon them from above. We wish to be 'souls'. But in fact we are just force. We wish to be self-determining. But in fact we are determined from without by higher natural forces. Even when we achieve genuine self-control, this is just internal hierarchy, which our strongest drives compel by force—compelled obedience and self-mastery.

59 Boyle, *Occasional Reflections*, Reflection VIII (Boyle 1848, 325–7).

60 This may seem like an odd claim, given the etymology of the word 'passion'—but see pp. 141–142 below.

3.2. As civilized modern people, then, we are viscerally disturbed by Ernst Jünger's account of war as a frenzied release of energy “comparable only to eros,” which transforms battlefields into objects for a 'Caesaristic will' that “endlessly brings forth magnificent and merciless spectacles”:

Only a few are granted the opportunity to sink in to this sublime purposelessness [*erhabene Zwecklosigkeit*], as one would sink into an work of art, or into the starry heavens. Whoever felt only the denial, only his own suffering and not the affirmation [*Bejahung*], the higher movement in this war, lived through the war as a slave. He did not have an inner but only an outer experience of the war. (Jünger 1922/1942, 111)⁶¹

It would be hard to dismiss Jünger's characterization as naive—after all, it was inspired by his own extensive combat experience in World War I (famously recounted in a 1920 memoir, *Storm of Steel*), for which he received an Iron Cross.⁶² Still, we are skeptical, if not horrified. We feel disgusted and even outraged by this crass display of barbarism, this reckless aestheticization of brutality—this “boyish rapture that leads[...]to an apotheosis of war,” as Walter Benjamin puts it,⁶³ and hence always to needless death, destruction, and misery. We are reminded of the insane violence of trench warfare, but also, perhaps, of the perverse cruelty of the concentration camps, the ruthless genocide of indigenous peoples, or the dehumanization of chattel slavery. This in turn nauseates us. And rightly so, if we take these associations for granted. But should we?

Our dirty secret, the blood-stained hands we cannot wash clean though we scrub to the bone, is that we are not merely repulsed by higher force and terrifying power. To be sure, the memory of American slavery can have no other emotional impact on any but the most vile person than to elicit genuine horror, disgust, anger, or sadness. Likewise for the Holocaust, or the Rape of Nanjing. This is appropriate, of course and needless to say. But we are not merely repulsed by radical subordination to higher force, when we take it to be genuine. We are not always merely outraged by objectification and amoral hierarchy, or by savagely aestheticized 'merciless spectacle'. We—most of us—are not always horrified by inhuman power.

Nor is this just because we sometimes fail to adequately empathize with others' suffering.

61 I follow the translation in Herf 1984, 76–77.

62 Jünger 1961.

63 Benjamin 1979, 121. The context is Benjamin's critical review ('Theories of German Fascism') of Jünger's edited volume on *War and Warrior* [*Krieg und Krieger*] (Jünger 1930).

Most of us understand that war is sometimes necessary, even if many of us now pretend self-righteously that we do not. Most of us are able to distinguish between soldiers raping civilians and killing enemy combatants. Most of us do not believe that 'meat is murder', even though the animals we eat feel pain. Appropriate respect for chickens does not entail that they have 'rights' not to be killed or eaten by us, most of us still know, although it may well entail that many modern industrial farming practices are excessively cruel. Most of us understand that it is not just lunacy to feed a pet cat a vegan diet, in order to assuage one's childlike guilt at the thought of killing, but also a profound form of disrespect for carnivorous life. Most of us know that while earthquakes or tsunamis are brutally and often tragically amoral, nevertheless they are not evil.

3.3. Nor do we simply acquiesce to higher force. We do not merely acknowledge the existence of hierarchies, or the inevitability of determination by superior force. We also value it. We affirm higher power. The wrath of God is not only real and terrifying, for the believer. It is also holy. Even for the irreligious, likewise, the force of a hurricane's winds is not only real and terrifying. It is also transfixing, captivating, astonishing, amazing. It is, quite clearly, *sublime*.

The moralist works frantically to explain away our attraction to amoral yet sublime force. However, the result is never quite convincing. For instance, Kant allows that nature is *dynamically* sublime insofar as it manifests as a "power" that "arous[es] fear," yet which "has no dominion over us" (*KU* 5: 260). By contrast, we experience the *mathematically* sublime in the "aesthetic judging of ...an immeasurable whole" (*KU* 5: 256), i.e. in attempting to intuitively (not conceptually)⁶⁴ apprehend vast magnitudes that we cannot fully comprehend in this way.⁶⁵ Hence, for Kant, things that elicit feelings of the dynamically sublime include "[b]old, overhanging, as it were threatening cliffs, thunder clouds towering up into the heavens, bringing with them flashes of lightning and crashes of thunder, volcanoes with their all-destroying violence, hurricanes with the devastation they leave behind, the boundless ocean set into a rage, a lofty waterfall on a mighty river, etc." (*KU* 5: 260-261). By contrast, natural phenomena like the night sky and the 'boundless ocean' when it is not 'set into a rage' presumably elicit feelings of

64 "The estimation of magnitude by means of numerical concepts (or their signs in algebra) is mathematical, but that in mere intuition (measured by eye) is aesthetic" (*KU* 5:251).

65 "Now in the aesthetic judging of such an immeasurable whole, the sublime does not lie as much in the magnitude of the number as in the fact that as we progress we always arrive at ever greater units; the systematic division of the structure of the world contributes to this, representing to us all that is great in nature as in its turn small, but actually representing our imagination in all its boundlessness, and with it nature, as paling into insignificance beside the ideas of reason if it is supposed to provide a presentation adequate to them" (*KU* 5:256-7).

the mathematically sublime. In turn, Kant offers a moralized interpretation of the dynamically sublime, in the context of his general definition of the sublime as “[that] which even to be able to think of demonstrates a faculty of the mind that surpasses every measure of the senses” (*KU* 5:250). In the case of even the dynamic sublime, that is, we supposedly have a feeling of *reason's superiority over sense*.

But this is not plausible. Kant is wrong to insist, for instance, that the experience of the impersonal power of nature elicits a feeling of the sublime only insofar as we feel ourselves to be, qua *rational* beings, ultimately *safe* from this power. Representatively: “the sight of them [i.e. 'bold, overhanging, as it were threatening cliffs, etc.] only becomes all the more attractive the more fearful it is, as long as we find ourselves in safety” (*KU* 5:261).⁶⁶ Kant's thought is that physical safety from overwhelming natural forces functions as a metaphorical proxy for our spiritual transcendence of the physical world, and hence as a symbol of our essential rationality. “[W]e gladly call these objects sublime,” he claims, “because they elevate the strength of our soul above its usual level, and allow us to discover within ourselves a capacity for resistance of quite another kind, which gives us the courage to measure ourselves against the apparent all-powerfulness of nature” (*KU* 5:261). But this analysis is mawkish and moralistic, even puerile.

Contra Kant, nature really—not just 'apparently'—contains higher forces, and we are not 'superior' to these forces simply by virtue of being smarter than them. Nor does one have to be personally safe from overwhelming natural force in order to find it sublime. The experience of the sublime force of a hurricane is not just available to someone listening to the wind's muffled howl and gazing out transfixed at sheets of water sweeping down from the heavens from behind the protective shield of a well-constructed modern building. It is also available to the storm-chaser bracing herself against the wind, feeling the sting of raindrops whipping against her face, heart beating out of her chest as roofs peel away, debris blows by, and a downed power-line nearby shoots sizzling jolts of flashing electricity onto the street. Perhaps she does not feel entirely safe, and perhaps this is precisely related to her experience of the sublime. Likewise, the rock climber scaling the sheer cliff face 'free solo', with no ropes, does not feel safe. He does not experience the superiority of his 'faculty of mind' over the merely 'sensuous' power of the rock face. Rather, he experiences his own physical mastery in relation to the overwhelming power of the mountain. He is calm, perhaps, but certainly aware that he is in constant and grave danger,

⁶⁶ Here, as at several other points in his aesthetic theory, Kant borrows heavily from Edmund Burke's account in his *Philosophical Enquiry into the Origin of our Ideas of the Sublime and Beautiful* (1757) (Burke 1958).

that he will fall to certain death with the slightest misstep or awkward shift in weight.

So too, then, the experience of the sublime violence of war is not only available to Abigail Adams, mulling over the fate of her countrymen as she listens to the 'incessant roar' of cannon fire from a position of relative safety ("The sound I think is one of the Grandest in Nature and is of the true Species of the Sublime..."⁶⁷). It is also available to a soldier rising up from the ankle-deep mud at the bottom of a trench during a momentary lull in the incoming bombardment, and leaping forth with his comrades at the order of a commanding officer to charge the enemy line—not in ignorance that he may well die at any moment, but rather just steeled with resolve that he is doing as he must, and with sublime indifference to his individual prospects for survival. This is one aspect of Jünger's view, surely. And it is not insane, abhorrent, or at all confusing.

Another aspect of Jünger's view perhaps remains less intuitive, for most modern readers. Namely, he values precisely the 'purposelessness' of war that most see as grounds for criticism:

Whenever we confront efforts of such proportions [viz., those involved in the first World War], possessing the special quality of 'purposelessness' [*Zwecklosigkeit*]⁶⁸—say the erection of mighty constructions like pyramids and cathedrals, or wars that call into play the ultimate mainsprings of life—economic explanations, no matter how illuminating, are not sufficient. This is the reason that the school of historical materialism can only touch the surface of the process. To explain efforts of this sort, we ought rather focus our first suspicions on phenomena of a cultic variety. (Jünger 1998, 129)⁶⁸

Here we are, then, back to what seems like an immoderate aestheticism—at best, a misguided elevation of a purely aesthetic experience of the sublime over more serious moral concerns. At worst, Jünger may also seem to have veered away from the truly sublime, to have fallen prey to a perverted mode aesthetic evaluation, and to be exalting what is in fact just sheer ugly brutality. But surely we can all intuitively understand something of what Jünger is saying, even here. After all, even Kant exalts aesthetic experience as a domain of purely 'disinterested' pleasure, free from both sensuous and rational desires, for either the merely 'agreeable' or the truly 'good'. Kant links this 'disinterested' pleasure to a feeling of 'free play' in our cognitive faculties. But the truth is more primal. Aesthetic freedom from desire is just the feeling of being *impassioned*: experiencing oneself as a locus of power, radiating outward in the absence of any external need.

67 Letter to John Adams, 1775; quoted in Danto 2003, 148.

68 I have substituted 'purposelessness' for the the translator's 'uselessness'.

The pyramid and the cathedral are loci of power—like the hurricane, like the mountain, like the climber scaling the cliff, like the soldier fighting courageously, and like the battlefield itself.

3.4 Sublimity is not a morality play or an allegory for human spiritual transcendence. This bizarrely anthropocentric analytical approach encourages the misconception that second-rate 19th-century American and British landscape painting, in the vein of Bierstadt's *Among the Sierra Nevada Mountains* (1868), elicits feelings of the sublime. But this sort of crass Romantic spectacle, with its cartoonish glow of 'heavenly' clouds and Disney-esque gentle animals, is not sublime. It is only heavy-handedly 'spiritual'. It is one rung up from Bob Ross's 'happy trees'. It is cloyingly sentimental, and far more childish than the 'boyish rapture' that Benjamin criticizes in figures like Jünger. It reeks of hostility towards real, amoral nature. It is anti-aesthetic.

Is this really the side one must take, in order to avoid perversely fetishizing violence? Are we really going to let moralists brow-beat us into denying nature yet again, in the domain of the sublime, by threatening us with unnecessary reminders that force can hurt us? Are we really going to let moralists brow-beat us into denying sublime force, by always holding over our heads that the concentration camps were evil, that slavery was dehumanizing, and that war is often just horrible? Does this refute sublime force?

What happened to the truism that the back-alley mugger or rapist is not just immoral, but also often clearly weak? What happened to our ability to distinguish real power from mere neurotic control? Why can we not speak to each other less like naughty children who must be constantly reminded that *it's good to be nice and bad to be mean*? Are we really so weak and obtuse, so decadent, so excessively 'spiritualized'? Or can we finally cast the moralist aside as the priestly con man—the poison-tongued guilt-huckster and self-righteous control-freak—that he is? Can we finally rouse ourselves from the fever-dream of modern moral conscience, back into clear-eyed primordial receptivity to the value and the ultimate reality of elemental force?

CHAPTER II.

Force as an Object for Conceptual Genealogy

[The idea of Force] is the great conception which, developed in the early part of the seventeenth century from the rude idea of a cause, and constantly improved upon since, has shown us how to explain all the changes of motion which bodies experience, and how to think about all physical phenomena; which has given birth to modern science, and changed the face of the globe; and which, aside from its more special uses, has played a principal part in directing the course of modern thought, and in furthering modern social development. It is, therefore, worth some pains to comprehend it.

-Charles Sanders Peirce, "How to Make Our Ideas Clear"⁶⁹

4. 'God', 'Law', and 'Matter' as Physical Forces, Fields-of-Effect, and Phenomena: On Early Modern Theology as a Guide to Current Scientific Metaphysics

4.1. The modern scientific idea of mathematized laws of nature was almost always viewed by its proponents in an explicitly Christian light, throughout the period of its major development and unprecedented rise to prominence in the 17th century.⁷⁰ Thus, for pious early modern natural philosophers, the law-governed cosmos that they had revealed was a clear and awesome sign of God's infinite intellect and absolute power, if not also His total benevolence.

⁶⁹ Peirce 1955, 33.

⁷⁰ Regarding my claim of 'first major development and unprecedented rise to prominence', consider e.g. Francis Oakley's observation that "historians are generally agreed that in the course of the seventeenth century the idea of the laws of nature sprang from comparative obscurity into a lasting prominence" (Oakley 1961a, 433); John Henry's appeal to "the new emphasis upon laws of nature in the seventeenth [century]" and "the appearance of the laws of nature in the scientific literature of the seventeenth century" (Henry 2004, 87–88); and Daniel Garber's contention that "[t]he idea of a world governed by specific mathematical laws of nature that can be articulated and manipulated, used to explain and predict natural phenomena was largely the invention of the seventeenth century" (Garber 2013, 45). See also Crombie 1996, 86–87; Daston and Stolleis 2008, 2. Cf. the slightly earlier periodization implicit in Joseph Needham's asking "why, after so many centuries of existence as a theological commonplace in European civilization, the idea of laws of Nature attained a position of such importance in the sixteenth and seventeenth centuries" (Needham 1951a, 29).

For Robert Boyle just as for many of his peers, then, the 'World' was ultimately “the great Book, not so much of Nature, as of the God of Nature,”⁷¹ Whom man cannot but “admire, praise, and thanke” for His natural 'Workes'⁷² in a spirit of “the highest wonder and the lowliest adoration.”⁷³ Therefore Boyle, just like Newton and many others, would presumably have fully endorsed Descartes' earlier injunction to Marin Mersenne in a letter from 1630: “Please do not hesitate to assert and proclaim everywhere that it is God who has laid down these laws in nature [i.e. these 'mathematical truths which you call eternal'] just as a king lays down laws in his kingdom.”⁷⁴ (For Newton, recall, “active Principles such as is that of Gravity” are “general Laws of Nature,” by the “help” of which “all material Things seem to have been composed of the hard and solid Particles[...], variously associated in the first Creation by the Counsel of an Intelligent Agent.”⁷⁵)

In itself, this religious inflection is unremarkable. That thinkers in a deeply Christianized society viewed a core modern scientific idea in terms of their religious faith is to be expected. The laws of nature could not but be figured as an image of God's glory and perfection in early modern Europe—for surely, as Feuerbach observes, the 'religious sentiment' “looks at all things through the medium of religion, it sees all in God,[...]sees all in images and as an image.”⁷⁶ Moreover, many commentators doubt that the religious context of the early modern idea of laws of nature, or that of the Scientific Revolution more broadly, sheds any great light on the nature or the value of contemporary scientific research. Thus Joseph Needham acknowledges the role of Christian theology in the development of the modern scientific conception of laws of nature, but nevertheless maintains that “[i]n the outlook of modern science there is, of course, no residue of the notions of command and duty in the 'laws' of Nature.”⁷⁷ Likewise but more broadly, Richard S. Westfall suggests that “[n]atural philosophy does not[...]have to concern itself with God at all,” despite having done so in the past—and he insists that, in fact, “[w]ith us it does not.”⁷⁸

And yet, more than two centuries after Newton's death, Einstein viewed the universe as a “single significant whole,” in the presence of whose impersonal “intelligence” and “harmony of

71 Boyle 1665/1848, 44.

72 Boyle highlights the 'uses' of the 'following book' in his Preamble to the second volume of his *Some Considerations touching the Usefulness of Experimental Natural Philosophy* (Boyle 1663/1671): “[...] the improvement of the minds of men, and (especially) the assisting them to understand the Workes of God, and thereby engage them to admire, praise and thanke him for them.”

73 Boyle 1685/1835, 26.

74 Quoted in Henry 2004, 102.

75 *Opticks* Query 31. See Appendix A.

76 Feuerbach 1957, 95.

77 Needham 1951b, 229. See also Needham 1951a.

78 Westfall 1986, 234.

natural law” we can only experience a “cosmic religious feeling” of “rapturous amazement” and transcendent release from the “prison” of individual existence.⁷⁹ The 'intelligence' that Einstein here invokes is surely not identical to the God of Descartes or Boyle or Newton. But to claim that Einstein's natural philosophy is 'not at all concerned with God' would be excessive: his idea of cosmic 'intelligence' clearly bears traces of influence from earlier modern theology and natural religion, as well as some ongoing conceptual connection with the God of Newton or Descartes.

Nor is this merely due to idiosyncratic mysticism or 'private' religiosity on Einstein's part. For instance, consider the contemporary philosopher of science Tim Maudlin's claim that the laws of nature “operate to generate or produce” later states of the universe from its initial state.⁸⁰ To be sure, Maudlin does not invoke any cosmic 'intelligence'. For him, rather, laws of nature are just “the patterns that nature respects.”⁸¹ But this account is still stranger than it might seem, in ways that speak to its partial continuity with pre-secularized antecedents. For if these lawful 'patterns' are abstract entities, then Maudlin would be committed to the view that abstract 'patterns' literally 'generate' physical states of affairs.⁸² This would in turn bear meaningful resemblance to early modern accounts of the laws of nature as pure acts of Will (not physical compulsion) whereby God rationally orders matter, if not also to post-Kantian 'absolute' idealists' vision of “everything in reality conform[ing] to reason, which consists in the forms, ideas, or purpose of things.”⁸³ Or, in order to avoid this, one could deny that laws of nature truly 'produce' physical states. However, this would be to abandon Maudlin's central claim. Alternatively, one could say that laws of nature are *concrete* 'patterns' which 'produce' either themselves or the phenomena they comprise—where either option presents its own further conceptual difficulties.

Regardless, Maudlin's appeal to nature “respecting” law-like patterns evidently conflicts with Needham's claim that there is 'no residue of the notions of command and duty' in the idea of laws of nature within 'the outlook of modern science'. Maudlin still speaks in terms of inanimate objects 'obeying' laws of nature, the laws 'allowing' or 'permitting' certain outcomes, and so

79 From “Religion and Science” and “The Religiousness of Science” in *Mein Weltbild* (1934) (Einstein 1949).

Regarding the 'impersonality' of Einstein's 'intelligent' stand-in for God, note his remark that “there is no anthropomorphic conception of God corresponding to [the cosmic religious feeling]” (Einstein 1949, 26)

80 Maudlin 2007, 174.

81 Maudlin 2007, 15.

82 I do not claim that Maudlin conceives of the laws of nature as abstract entities, although he may: it is hard to tell.

83 Beiser 2003a, 69. Here Beiser is describing Friedrich Schlegel's view as articulated in notebooks from 1796, in particular, albeit as part of a broader characterization of early German Romanticism [*Frühromantik*]. Beiser (ibid., 70) in turn notes the clear “Platonic provenance” of Schlegel's view: “reason is the intelligible structure of things, what we perceive in beauty through the power of intellectual intuition.” See also Beiser 2003b.

forth.⁸⁴ Of course, like any typical scientific naturalist, he might well insist that these are simply figurative descriptions of totally de-anthropomorphized relations. But what relations, exactly? Consider 'obedience', for example. Most innocuously, to 'obey' something is just to behave in accordance with it. Hence, perhaps objects 'obey' the laws of nature just in the sense of behaving in accordance with them, and 'respect' the laws of nature just in the sense of conforming to them. But then what would become of the laws' putative power to 'generate' physical states? And must the 'constraint' that the laws 'allow' not be different from the 'constraint' of *any* natural pattern on the objects that realize it, on Maudlin's view?⁸⁵ And does this not mean that he must take objects' 'obedience' to the laws of nature to be more than bare conformity to them? What is this 'more', then? And how is it not precisely the 'residue' of earlier 'notions of command and obedience'?

It would be a shallow kind of whig history to elide the profound impact of Christianity on early modern natural philosophy. But it is a similar kind of whig history to deny the real and ongoing influence of early modern religion on contemporary scientific theory and method. This is not to deny that science has undergone a comprehensive process of secularization, of course. Nor is it to claim that contemporary scientific practice is correlated with either explicit or implicit belief in the personal God of early modern Christianity. But it is to insist that we would do well to historicize ourselves, too, by more frankly and carefully examining currents of deep structural continuity, as well as discontinuity, between the Christian metaphysical traditions underlying early modern natural philosophy and the secularized metaphysics of our own science.

To this end, it bears experimenting with the following simple methodological proposal: let us examine some of the central attributes imputed to God in early modern science and natural theology, with attention both to different traditions' emphasis on distinct 'divine' attributes and to the differential plausibility of extending these distinct attributes forward into our own secularized science. This will illuminate early modern natural philosophy as well as contemporary science and philosophy of science, by providing a greater depth of intellectual historical and conceptual context for both. Moreover, this approach affords an opportunity for productive interdisciplinary

84 E.g. he suggests that “to say what is physically possible is to say what the constraint of those patterns allows” (Maudlin 2007, 15); he claims that “the planets obey Kepler’s law” (ibid., 37), and that “[the special sciences] seek to impose a taxonomy on the physical structure of the world[...]in such a way that the objects as categorized by the taxonomy fairly reliably obey some lawlike generalizations which can be stated in terms of the taxonomy” (ibid., 159); and appeals to “the outcomes permitted by the laws” (ibid., 19).

85 E.g. Maudlin distinguishes between laws and 'regularities'. However, to “the ontological question of what makes a regularity into a law of nature,” he answers only that “lawhood is a primitive status” (Maudlin 2007, 17). But note that this appeal to the 'ontologically primitive' status of lawhood does nothing to refute my claim that Maudlin's view is historically and conceptually linked to Christian religious metaphysics.

synthesis across the humanities. By bringing to bear insights from the history of early modern science and religion, for instance, we can achieve fruitful new perspectives on contemporary debates in naturalistic metaphysics and philosophy of science. And reciprocally, likewise, contemporary debates in scientific epistemology and metaphysics can help to bring additional argumentative focus and normative force to historical investigations of early modern natural philosophy, illuminating though more strictly historical approaches often certainly are.

Note that this alternative approach differs fundamentally from efforts to re-appropriate attributes of God for humanity—whether in the mode of Kantian and post-Kantian idealism, or as in the 'materialist' version of Hegelian philosophy that Feuerbach developed and Marx later popularized. Hence, my point is not the familiar Feuerbachian or Marxist one that consciousness of God is just (they claim) an alienated mode of human self-consciousness (see Appendix C). Rather, my basic contention is that early modern natural theological conceptions of God are alienated modes of apprehending *elemental physical forces*, and the explanatorily-basic *fields* of their physically-possible causal impact on observable objects. Reciprocally, though, we can also better understand the metaphysical foundations of contemporary science—and in particular add clarity to current notions of force, fields, unobservable reality, and laws of nature—by examining their genealogical relation to the theological traditions that influenced early modern science.

4.2. Several main results of this methodological experiment in using early modern natural theology as a (partial) guide to current scientific metaphysics may be summarized in advance:

(1) 'Power' is the clearest candidate for a readily-naturalizable 'divine' attribute. In order to de-anthropomorphize it, we must appeal to *amoral, arational, inhuman* power. The exercise of such power is not *will*, but rather just pure *force*. Debates about God's 'transcendence' or 'immanence' are in turn related in complex ways to ongoing debates about the nature and status of 'theoretical' entities, as well as the role (or lack thereof) of causal explanation in modern physics. It might seem self-evident that physical force is purely immanent, or else that there is no need to invoke 'force' at all in the context of modern physics. But in fact this is far from clear.

(2) Distinctively *physical* force is that which causally produces *observable phenomena*, specifically insofar as they are interrelated by corresponding *physical structures*. Physical forces do not 'push around' or re-arrange pre-existing observable phenomena, like some early moderns took God to organize material particles. Rather, physical forces causally produce observable

phenomena themselves. These observable phenomena *instantiate* physical structures, in their relations to one another, and it is through recognizing the explanatory power of these relational structures among phenomena that we justifiably infer the activity of underlying physical forces.

(3) Physical structures, in this sense, are the *fields* of corresponding physical forces. These fields do not causally produce observable objects. They are the intelligible forms of forces' causal impact on the observable world. Physical fields are pure *impact-structures*. They explain phenomena *structurally*, not causally. Forces explain observable phenomena causally.

(4) The way in which physical fields non-causally 'determine' observable phenomena is conceptually and historically related to the way that early moderns took God's influence on the material order to be different in kind both from mere physical compulsion—as ordering by the 'Will' of an 'Intelligent' Being, rather than by natural force—and from the 'grounding' of material substance in more 'immanent' rational forms or intelligible essences. This non-causal mode of explanation is retained in modern science, at the level of the relationship between observable phenomena and the basic structural relations that they instantiate. But these explanatorily-basic physical structures are the fields *of* underlying physical forces, which are the real causal grounds of the structured observable phenomena that empirical science discloses. This ongoing connection between natural laws and underlying forces is the 'residue' of early modern ideas of a transcendent God who imposes a lawful order on material substances that is beyond their nature.

(5) Physical structure is not the only kind of structure there is. For instance, it differs fundamentally from *beautiful form*. Physical structure is essentially linked to the kind of relation that obtains between explanatorily-basic laws, principles, etc., and the empirical objects or phenomena that (in good theories) they systematically explain. That is, physical structure is the 'phenomenal image' of systematic explanatory power. Physical structures are explanatorily-basic 'patterns' in empirical phenomena. This in turn relates to the role of traditional theoretical virtues like simplicity and breadth of scope in scientific theory choice. And this relationship between physical structure and theoretical virtue in turn echoes early modern appeals to God as the ground of 'simplicity', 'harmony', etc., in nature as disclosed by science. The basic relationship between physical structure and explanation is a 'residue' of earlier appeals to divine 'Intellect'.

(6) Physical forces and fields, in the above sense, are basic to all domains of modern empirical science (insofar as all domains of modern empirical science are concerned to achieve systematic explanatory power vis-à-vis observable phenomena). But the *physical* sciences also

systematically invoke objects that are arguably *strictly intelligible*, in the sense of lacking sensory qualities, spatiotemporal form, and any other properties that could be intuitively 'pictured'. Neo-Kantians like Ernst Cassirer have noted this, along with many modern physicists. This, too, is likely historically and conceptually descendent from natural theologians' appeals to divine 'Intellect', as well as to God's purely Immaterial nature and His 'transcendent' status.

(7) The 'Freedom' of God is historically and conceptually connected to empiricism, by way of the voluntarist tradition in medieval and early modern theology. The simplest naturalistic correlate to this putative 'Freedom' is just the pure *arationality* of elemental physical force—which renders the basic explanatory structure of nature inaccessible via rational introspection.

(8) The 'Oneness' of God is historically and conceptually related to the 'unity of science'. Kant translated this 'Oneness' to humanity, in the mode of the 'transcendental unity of apperception'—i.e. the unified consciousness of a 'transcendental subject'—that he takes to be a condition of possibility for objective phenomenal experience. Modern appeals to the 'unity of science' are thus a kind of 'residue' of monotheistic faith, which should arguably be abandoned. Attempts by Kant to re-ground the 'systematic unity of nature' in the nature of rationality itself, and attempts by post-Kantian idealists to argue that nature is an organic whole, are unconvincing.

(9) Early modern conceptions of God's 'Creativity' are echoed in Kant's theory of our own creative power (as loci of 'transcendental subjectivity') vis-à-vis the phenomenal world of *objects*, or things insofar as they appear to us mediated by the 'forms' of our own cognitive faculties (e.g. sensibility, understanding, and reason). Kant imputes a creative power to human beings vis-à-vis the phenomenal world that mirrors traditional accounts of God's creative power vis-à-vis things as they are 'in themselves', or apart from our own experience of them. The 'transcendental' function of human cognitive powers (for Kant) or those of God (for earlier modern natural philosophers) should be re-appropriated in our own time for explanatorily-basic *physical structures*, corresponding to causally-basic *physical forces*. Thus, elemental physical force is analogous to Kant's 'noumenal reality'; corresponding physical structures, or the fields of these elemental physical forces, are analogous to Kant's 'pure forms of objective experience'; and the observable physical phenomena that are causally produced by these elemental physical forces, and determined within corresponding physical structures, are analogous to Kant's 'phenomena'. Note that this re-formulation involves a basic shift away from metaphysical *idealism*. Physical forces are real, mind-independent things. And objective physical phenomena

are mind-independent things insofar as they are determined with respect to explanatorily-basic physical structures that encode the impact of real, causally-fundamental physical forces.

4.3. Not all medieval or early modern theological traditions emphasized the same attributes of God to the same degree. Not all theological traditions characterized the same divine attributes in the same way. And sometimes different traditions disagreed about whether God in fact has certain traits, like 'immanent' presence in nature as opposed to pure 'transcendence'. As the historian of religion Eugene M. Klaaren summarizes, for instance, “there was a lively arena of conflicting theologies of creation in seventeenth-century English thought”⁸⁶—as one might well have expected. Theological diversity of this sort cannot be overlooked, in examining the interplay between early modern natural religion and scientific methodology, let alone its bearing on our own science. Nevertheless, it is still possible to identify several specific currents in natural theology that played especially prominent roles in the development of modern science.

One divine attribute that was of central importance for the development of modern scientific theory and method, including the modern idea of laws of nature, was God's power or will. While power and will are not synonymous, many early modern thinkers and contemporary commentators alike treat them in extremely close proximity, for reasons that will become clearer below. Part of my own effort to render early modern natural theology more directly relevant to current scientific metaphysics in turn involves teasing apart (realistic, impersonal) Power from (anthropomorphic) Will. Special focus on God's power or will was characteristic of a *voluntarist* tradition in late medieval and early modern theology. Voluntarism is helpfully contrasted against a distinct *intellectualist* strain that instead placed greater emphasis on God's intellect or reason.

A wide range of commentators have argued that voluntarist theology placed a critical role in the development of modern science. Thus, for instance, Klaaren maintains that “hypotheses, attention, the search for particulars, and laws of nature were all part and parcel of a new empirical way of knowing indebted to a critical (and carefully constructive) voluntarist theology of creation.”⁸⁷ Likewise, E. A. Burt had earlier concluded in his synoptic study on the *Metaphysical Foundations of Natural Science* (1925) that “Newton, in common with the whole voluntaristic British tradition in medieval and modern philosophy, tended to subordinate, in God, the intellect to the will; above the Creator's wisdom and knowledge is to be stressed his power

86 Klaaren 1977, 46.

87 Klaaren 1977, 123.

and domination.”⁸⁸ James E. Force later agreed that “Newton's experimentalism is inextricable from his theology and his voluntaristic metaphysics.”⁸⁹ Francis Oakley appeals to “that fruitful stream of *voluntarist* natural law thinking, which[...]made its way with profound effect into the ethical, political and scientific thought of the modern world.”⁹⁰ Margaret Osler concludes that “[t]he voluntarist strain underlying Gassendi's thought was the thread that bound his natural philosophy, theory of knowledge, and ethics into a coherent whole.”⁹¹ And even John Henry, who insists that the voluntarist theological tradition cannot *explain* the sudden rise to prominence of the idea of laws of nature in the 17th century—rather, according to Henry, this is “best seen as the exploitation of a ready made theological tradition *in support of* [scientific] innovations, rather than as *an explanation for* those innovations”⁹²—even Henry allows that “there can be no doubt of the relevance of providentialist disputes, and theological voluntarism in the efforts of Descartes, Boyle, Newton and Leibniz to justify their use of laws of nature.”⁹³ Only a small minority of historians, saliently including Peter Harrison, are more deeply skeptical of the basic ‘voluntarism and science thesis’.⁹⁴ In short, then, there is a broad consensus among historians that the founding figures of modern science “depended” on a “voluntarist natural theology.”⁹⁵

(Of course, Alistair Crombie is also entirely correct that the development of the scientific

88 Burt 1925, 290.

89 Force 1990a, 89. On voluntarism in Newton, see also Shapin 1981; Snobelin 2001, 176–7. Cf. Harrison 2004. See also Malet 1997 for a discussion of voluntarist theology's influence on Isaac Barrow, Newton's teacher.

90 Oakley 1961a, 438. Oakley (*ibid.*, 449) argues that “the voluntarist conception of natural law” first “attained a wide currency in the and seventeenth centuries,” that it was “directly descended from the similar theory hammered out by the nominalist theologians in the years after the condemnations of 1277,” and “being the result of a crucial shift in the direction of the ‘simplified view of nature’ which was later to be adopted by Galileo, Descartes and Newton,” this voluntarist conception of natural law was “eminently compatible with this [‘simplified’] view.”

91 Osler 1991, 157. See also Osler 1994.

92 Henry 2004, 91.

93 Henry 2004, 91. However, cf. Klaaren's claim that “[b]oth the ‘divine reason’ of More and the ‘sufficient reason’ of Leibniz represented a fundamentally different orientation to creation than the voluntarism of Newton and Boyle” (Klaaren 1977, 122). Regarding the question of voluntarism in Descartes' thought, see more below.

94 See Harrison 2002, 2004. Harrison (2002, 64) acknowledges that “there are important insights in the [voluntarism and science] thesis.” But he believes that these have been wrongly mapped onto the distinction between voluntarist and intellectualist theology. For instance: “The emergence of the idea of a divine legislator who directly rules the creation seems to have played an important role in the formation of the notion of ‘laws of nature’. However, this idea was not a specifically voluntarist notion, and ironically it was the rationalist Descartes who made a major contribution here” (Harrison 2002, 79).

Here it should be noted that John Henry later conceded to Harrison that, “[t]hanks to Professor Harrison’s work, we can now see that many of the differences between voluntarists and intellectualists can be understood in terms of those who took an Augustinian line, and were pessimistic about humanity’s ability to understand God and his creation, and those who rejected the Augustinian emphasis upon the debilitating nature of original sin” (Henry 2009, 102). However, Henry insists that it would nevertheless be “a serious mistake to abandon the voluntarism and science thesis” (Henry 2009, 104). I agree with Henry on this point. Cf. Harrison 2009.

95 Bossy 2000, 242; also quoted in Harrison 2002, 63.

idea of natural laws “can obviously not be seen as a consequence simply of a theological concept of infinite power.”⁹⁶ He lucidly recounts several other main factors contributing to this process:

By the time of Newton the term laws of nature had come to designate the object of all scientific inquiry: the principles or axioms to be discovered by experimental and theoretical exploration, or postulated for experimental control. By itself the concept of laws of nature could scarcely have been a guide to how to conduct such an inquiry. What made it scientifically effective was its amalgamation with two matching concepts. First the analogy of natural with human art offered an invitation to simulate natural effects with artifacts made by and therefore understood by man: by discovering how to control hypothetical models of his own contrivance man could thus gain insight into the laws controlling nature itself. Secondly the concept of laws of nature became quantified by association with that of mathematical functions expressing the quantitative dependence of effect on cause in concomitant degrees. Thus changes in an effect (as the dependent variable) expressed as an algebraic function of the conditions necessary and sufficient to produce it (as the independent variables) could be precisely calculated from those conditions.[...][I]t was evidently not until the 13th or 14th centuries that the implied notion of functional dependence between variable quantities was explicitly recognized in the West. Then it was developed first only in principle, without the systematic practice of measurement that was necessary to incorporate it effectively into experimental science. That practice was to develop first in the technical arts. It was not until the 17th century that systematic measurement was to be made essential to all physical research. It was combined then with a rational theory of quantity expressed in linear scales, replacing the inhibiting Greek conception that the properties of substances were present and had to be expressed as pairs of opposites, and with the analytical formulation of functional dependence by means of increasingly precise and powerful mathematical symbolism.⁹⁷

The following analysis of voluntarist theology's influence on the rise of modern science, including ideas of natural law, is entirely compatible with this additional historical complexity.)

Late medieval and early modern voluntarist theology's influence on early modern science is too broad in scope and too complex to fully address here, even in outline. However, several of its most salient aspects can be briefly distilled without too much loss of nuance, or misleading simplification. Many of these central aspects in turn have to do with deep-seated historical and conceptual conceptions between theological voluntarism and empiricism. A set of studies by Michael B. Foster from the mid-1930s is often taken as the locus classicus for this thesis of

96 Crombie 1996, 87.

97 Crombie 1996, 86–87.

interrelation between voluntarism and empiricism.⁹⁸ Thus, for instance, Peter Harrison suggests that “[i]n a 1934 issue of *Mind*, M. B. Foster first proposed a link between the voluntary activity of God, the contingency of the created order, and the requirement that science be empirically based.”⁹⁹ But many subsequent historians have added greatly to our understanding of this link.¹⁰⁰

John Henry condenses the basic motivation for the 'voluntarism and empiricism' thesis:

The whole point of the alleged alliance between voluntarism and empiricism is that it is not possible to reconstruct *a priori* God's thinking as he decided how to create the world. Kepler clearly thought it was possible to think God's thoughts after him, as did Descartes, and Leibniz. But their assumptions were based on the belief that God was constrained to create the world in accordance with the same rational processes available to them.[...]Those who subscribed to a voluntarist theology, however, denied that God could be second-guessed this way. The only way you could tell whether God had allowed void space or not was to see if you could find a vacuum, or failing that, to see if you could make one. This was the only way you could tell because, according to the voluntarist, God could have gone either way on the issue. He had a free choice in the matter. God's creative power was in this sense arbitrary — nobody, as far as I can tell, ever said that he created things capriciously and randomly[...]Similarly, the only way you could tell whether matter could be active or not was empirically to investigate bodies, or perhaps to try to isolate an immaterial spirit and to investigate how such an immaterial entity was able to move matter. Once again, the assumption of the voluntarist was that there can be nothing in the nature or essence of matter itself which makes it impossible for God to choose to make it inherently active.¹⁰¹

Admittedly, Descartes—arguably the first thinker to systematically deploy a modern notion of laws of nature¹⁰²—was plausibly both a rationalist and a theological voluntarist.¹⁰³ But this occurred within the context of a far broader historical confluence of voluntarism and empiricism, based in an intuitive conceptual relation between God's radical freedom in exercising creative power and the impossibility of learning the basic laws of nature through rational introspection, as

98 See Foster 1934, 1935, 1936.

99 Harrison 2002, 63.

100In addition to studies already cited above, see e.g. Oakley 1961b, 1966; McGuire 1972; Heimann 1978; Milton 1981, 1998; Osler 1985; and Malet 1997.

101Henry 2009, 88.

102Garber (2013, 47) argues that while “earlier thinkers had certainly viewed the world as ordered by laws that determined how inanimate nature was to go,” still “no one before Descartes actually proposed specific laws and attempted to apply them to understanding nature.” Similarly, Henry (2004, 114) claims that “Descartes was effectively responsible for single-handedly introducing the notion of laws of nature into natural philosophy.”

103E.g. see Harrison 2002.

opposed to via extensive experimental investigation. Peter Harrison takes this example of Descartes to “break[] the inexorability of the logic of a connection between voluntarism and empiricism.”¹⁰⁴ But here I take John Henry's response to be reasonable, and indeed compelling:

There may be intellectual historians out there who have talked in terms of the inexorable logic of particular positions, but if there are, I can't imagine them holding this position for long. Indeed, I can imagine myself, or other intellectual historians, using the example of Descartes precisely to show that there is no necessary connection between voluntarism and empiricism, there is no inexorable logic which connects them. Nevertheless, I would want to go on, it remains true to say that the defence of empiricist approaches was often associated with a theological position that can be characterized as voluntarist.¹⁰⁵

Incidentally, other scholars have argued that Descartes is better described as an intellectualist.¹⁰⁶ And still others, like Henry, insist that it is “wrong to try to reach a determination of this issue—whether Descartes was a voluntarist or an intellectualist—in absolute or essentialist terms.”¹⁰⁷

Klaaren argues that the widespread prominence of voluntarist theology in 17th-century England, in particular, reflected basic differences between English Protestantism and continental European denominations of Christianity. For instance, whereas Lutheran religion “tended to subsume God's work of creation under His chief work of redemption,” such that “the functions of law and conscience were to convict the believer of sin, to ready him for the redemptive grace of forgiveness,” English Protestantism “refused to make God's work of creation a function of his work of redemption” and instead stressed its independent “integrity and significance.”¹⁰⁸ Likewise, although “a distinctively pious interest in God's great handiwork of creation was manifest in many religious traditions” in the 17th century, nevertheless “the belief that such attention provided spiritual instruction gained unique strength in English religion,” in a way that was “powerfully articulated in voluntarist theologies.”¹⁰⁹ Klaaren suggests that this distinctive focus on God's creative power in 17th-century England reflected the mediating influence of a Calvinist theology of creation, which—along with a distinct counter-scholastic “Spiritualist

104Harrison 2002, 66.

105Henry 2009, 84.

106See e.g. Osler 1994; Davis 1984, 1991. Henry (2009) cites these studies.

107Henry 2009, 84.

108Klaaren 1977, 50.

109Klaaren 1977, 51.

theology of creation” represented in figures like Helmont—reinforced a pre-existing “widespread religious interest in creation and new creation that marked English culture.”¹¹⁰ Regardless of its genealogy, at any rate, this wider interest in Creation likely helped to cultivate the especially strong current of (voluntarist-inflected) empiricism in 17th-century English natural philosophy.

Hence, in short, we may infer that the divine 'Freedom' invoked by early modern natural philosophers working within a broadly voluntarist tradition can be re-interpreted within our own secular context as the *arationality* of whatever 'divine' power produces law-governed natural order, which renders the laws of nature inaccessible via rational introspection. This may not seem like a serious gain in our understanding of current science. But it is a secure foundation upon which to build such deeper understanding. The 'God' of the voluntarist theology that was crucial to the rise of modern science can be naturalistically re-interpreted as *arational power that produces the law-governed physical order disclosed by modern empirical science*.

4.4. To begin to delve somewhat deeper, we may proceed to a subtler theological issue: voluntarists tended to place particular emphasis on God's *transcendence*, as opposed to His *immanence* in the natural world. Hence, voluntarists not only stressed divine Power or Will, but also often that the order of nature is imposed from without by an entirely transcendent Lawgiver. Material objects are not rationally or lawfully ordered *through their own nature*, in other words, according to this voluntarist-inflected emphasis on divine transcendence. Thus, Newton insists in the second edition of the *Principia* that “[t]his Being governs all things, not as the soul of the world, but as a Lord over all; and on account of his dominion he is wont to be called Lord God[...].or Universal Ruler.”¹¹¹ James Force helpfully elaborates Newton's view on this point:

Matter does not move, as it generally does, in accord with mathematically precise laws of nature such as those described in the *Principia* because of any Neoplatonic overflow of God's being into the world or because of any Hobbist, Cartesian, or Leibnizian notion of necessary rational order intrinsically immanent within matter or imposed once and for all long ago by a deity who long since has absented himself from the daily operations of creation. Such metaphysical views dilute the total subordination of matter to the will of God and are the metaphysical equivalent of theological idolatry. Rather, matter exists and ordinarily operates in accord with natural law for one reason: God wills it so by divine *fiat*. Both matter

¹¹⁰Klaaren 1977, 85.

¹¹¹Quoted in Burt 1925, 291.

and natural law originate in the will and power of God. God's dominion is the fundamental first metaphysical principle underlying Newtonian mechanics.¹¹²

Likewise, whereas for early 17th-century Spiritualists like Helmont divine law was “immanent in and intrinsic to physical entities,” for the voluntarist Boyle “the divinely imparted and regulated laws of nature were *imposed* upon a creation of totally subject atoms.”¹¹³ Therefore, in Boyle's own words, it is “the *Creator*, who, and not the *World*, nor the *Soul* of It, is the True *God*.”¹¹⁴

This posture amounted to a radical departure from the more 'immanent' rationalism of neo-Aristotelian scholastics, and (more broadly) conceptions of an all-encompassing natural hierarchy or 'Great Chain of Being'.¹¹⁵ Rather, for 17th-century voluntarists, all mere natural objects were reduced to bare *equality before a transcendent God*. Here an influence from Calvinism was again arguably operative—e.g. insofar as “Calvin's conviction that all creation was egalitarian because of its ultimate dependence upon God's power [the 'crucial essence-existence distinction of Thomas did not function for Calvin', who therefore acknowledged 'no hierarchy or graded order of essential beings'] further undercut traditional presuppositions of the hierarchy of being.”¹¹⁶ But so too were earlier strains of voluntarism in late medieval theology, prominently represented by Ockham. Thus Francis Oakley concludes that whereas for Aquinas the “natural law” is “the divine reason in which all things, irrational as well as rational, participate,” Ockham's “abandonment of the theory of natural law as immanent” went “hand in hand” with “something of a revision” of this Greek-inflected idea of nature as “impregnated with reason.”¹¹⁷ Likewise, Klaaren: “Since eternal and natural law are ultimate matters of divine reason for Thomas, the whole universe, but especially man, is governed by rational structure. But Ockham emphasized that the chief mark of law is obligation rather than a relatively immanent built-in regularity. Thus law was externally imposed upon a subject creation.”¹¹⁸

This late medieval voluntarist strain reflected a re-orientation towards a Semitic or

112Force 1990a, 84. Likewise, James and Margaret Jacob invoke “Newton's insistence that universal gravitation must operate through immaterial forces in the universe and not as a property inherent in matter” (Jacob and Jacob 1980, 265). See also Shapin 1981, 195; Oakley 1961a, 436.

113Klaaren 1977, 172.

114*A Free Enquiry into the Vulgarly Receiv'd Notion of Nature*, Sec. IV (Boyle 1686, 120).

115On the 'Great Chain of Being', see e.g. Lovejoy's classic study (Lovejoy 1936). On immanence and transcendence in Christianity, with helpful citations and a voluntarist inflection, see also Gilkey 1965, 96–97.

116Klaaren 1977, 41.

117Oakley 1961a, 441–442, 446.

118Klaaren 1977, 37.

ancient Jewish understanding of imposed laws of nature, which had arguably been largely subordinated to dominant Greek ideas of immanent law.¹¹⁹ Hence, Boyle saw “the ascribing to nature,[...]things, that belong but to God” as one “(if not the chief)” of “the grand causes of the polytheism and idolatry of the gentiles.”¹²⁰ Likewise, compare Calvin from over a century earlier:

As if the universe, which was founded as a spectacle of God's glory, were its own creator! For thus the same author has elsewhere followed the view common to Greeks and Latins alike: 'The bees, some teach, received a share of mind, Divine, ethereal draught. For God, men say, Pervades all things, the earth, expanse of seas And heaven's depth. From him the flocks and herds, Men and beasts of every sort, at birth Draw slender life; yea, unto him all things Do then return; unmade, are then restored; Death has no place; but still alive they fly Unto the starry ranks, to heaven's height' [this is from Virgil's *Georgics*]. See, of what value to beget and nourish godliness in men's hearts is that jejune speculation about the universal mind which animates and quickens the world! This shows itself even more clearly in the sacrilegious words of the filthy dog Lucretius which have been deduced from that principle. This is indeed making a shadow deity to drive away the true God, whom we should fear and adore. I confess, of course, that it can be said reverently, provided that it proceeds from a reverent mind, that nature is God; but because it is a harsh and improper saying, since nature is rather the order prescribed by God, it is harmful in such weighty matters, in which special devotion is due, to involve God confusedly in the inferior course of his works. (Calvin, *Institutes of the Christian Religion* I:5:5)

Notably, however, Whitehead argues that Alexandrian theologians fashioned a distinctively Christian “compromise between the immanence of law and imposed law,” respectively typified by Jewish monotheism and Greek rationalism; Oakley agrees that the resultant “quasi-immanent

119E.g. “Like the ancient Jewish understanding of law, the voluntarist view [of late medieval theologians like Ockham] presupposed God distinct from His creation, which He orders by law” (Klaaren 1977, 36); “[W]hy, after so many centuries of almost total submersion in Greek ideas of immanent law, did the Semitic concept of imposed laws of nature burst into prominence in seventeenth century scientific thought?” (Oakley 1961a, 437). Consider also: “[T]he conception of the governance of the whole world by law seems || to be peculiarly Stoic. Most of the thinkers of this school maintained that Zeus (immanent in the world) was nothing else but "koinos nomos" (KOLVOs vo0)-Universal law 57 (e.g., Zeno, fl. 320 B.C.; Cleanthes, fl. 240 B.C.; Chrysippus, d. 206 B.C.; Diogenes, d. 150 B.C.). It seems more than likely that this new and more definite conception was derived from Babylonian influences, since we know that about 300 B.C. astrologers and star-clerks from Mesopotamia began to spread through the Mediterranean world. Among these one of the most famous was Berossus, a Chaldean who settled in the Greek island of Cos in 280 B.C. Zilsel, alert for concomitant social phenomena, notes that just as the original Babylonian conceptions of laws of Nature had arisen in a highly centralized oriental monarchy, so in the time of the Stoics, a period of rising monarchies, it would have been natural to view the universe as a great empire, ruled by a divine Logos” (Needham 1951a, 19–20). Compare Zilsel 1941, 1942.

120Boyle, *Notion of Nature* (quoted in Klaaren 1977, 151).

view of law[...]continued to flourish in the seventeenth century,” e.g. in Grotius, although it crucially “did not recommend itself to the scientific *virtuosi* [e.g. Boyle and Newton].”¹²¹

Of course, the 17th-century voluntarist emphasis on law as externally-imposed 'obligation' rather than 'immanent regularity' is closely related to the historical and conceptual connection between voluntarism and empiricism. According to the early modern voluntarist, one cannot discover the laws of nature simply by reflecting on the nature of created substance, because law-governed order is *imposed* on nature from without. (Thus M. B. Foster notes that “[m]odern science describes natural substances instead of defining them, it discovers their properties by observation and experiment instead of by 'intuitive induction' and demonstration, it classifies their species instead of dividing their genera, it establishes between them the relation of cause and effect instead of the relation of ground and consequent.” By contrast, “[a]ll the peculiarities of Greek natural science are derived from the assumption that the essence of a natural object is definable, as the essence of a geometrical object is.”¹²²) Nor—contra intellectualists—can one apprehend the fundamental laws of nature through pure reflection, given God's total freedom in exercising His absolute Power and the correlative (apparent) 'arbitrariness' of His creative Work.

4.5. But 17th-century voluntarists' emphasis on God's transcendence also plausibly sheds light on the relationship between laws of nature, causal powers, and observable phenomena—in current physics and empirical science more broadly, not just in early modern natural philosophy. The basic scheme endorsed by a Boyle or Newton is evidently as follows. There are three basic things: God, the laws of nature, and material objects or physical phenomena. And God is the cause of law-governed order among material objects. That is, God causes matter to obey natural laws. Matter does not cause itself, or other matter, to obey the laws of nature. And the laws of nature do not cause matter to obey themselves. However, recall that the latter is precisely what the contemporary philosopher of science Tim Maudlin seems to believe, insofar as he claims that laws of nature “operate to generate or produce” later states of the universe from its initial state.¹²³ Maudlin's view makes far less sense than Boyle's, as laid out in *The Christian Virtuoso* (1690):

I look upon a law as a moral, not a physical cause, as being indeed but a

121Oakley 1961a, 435–6.

122Foster 1934, 454.

123Maudlin 2007, 174.

notional thing, according to which, an intelligent and free agent is bound to regulate its actions. But inanimate bodies are utterly incapable of understanding what a law is, or what it enjoins, or when they act conformably or unconformably to it; and therefore the actions of inanimate bodies, which cannot incite or moderate their own actions, are produced by real power, not by laws; though the agents, if intelligent, may regulate the exertions of their power by settled rules.¹²⁴

As Boyle rightly observes, inanimate objects are not capable of apprehending the laws of nature, which are *purely intelligible* structures, insofar as they have no power of intellect. Whereas the actions of an 'intelligent agent' can be caused by 'notional things'—as when people regulate their conduct in accordance with moral laws or ideas—the actions of 'inanimate bodies' clearly cannot. Contra Maudlin, then, 17th-century voluntarists' picture makes far better sense: God (not law) causes or 'produces' law-governed order among material objects; the laws of nature are Ideas in God's Mind; and matter does not obey laws *by its own nature*; matter is only *passive*, not *active*. (Clearly, a secularized metaphysics will have to address the unacceptable anthropomorphism of the 'God' term in this basic early modern scheme. I will return to this issue below, rest assured.)

Maudlin's claim that the laws of nature 'generate or produce' physical states of affairs involves a conceptually-confused combination of tropes from Greek rationalism and modern scientific notions of efficient causation. Whereas a neo-Platonic or neo-Aristotelian rationalist might claim that purely intelligible Forms non-causally *ground* physical states of affairs, as these physical states' real *nature* or *essence*, this is not what Maudlin seems to be saying. Rather, he invokes a (pseudo-)causal notion of 'production' or 'generation'. But 17th-century voluntarist natural philosophers rightly saw that the laws of nature are not the kinds of thing that could cause physical effects. Rather, natural laws are the intelligible Form of physical effects caused by God.

Here a basic analogy is instructive. Colors and other sensory qualities cannot impact things without faculties of sensory perception. Hence, colors—as sensory qualities—cannot cause a rock to do anything. Of course, sensory qualities can also be understood as mind-independent causal powers inherent in external objects. For instance, an object's color depends upon the spectrum of electromagnetic radiation that it reflects or emits. And this radiation can causally impact inanimate objects. However, as mind-independent causal powers *insofar as they can produce sensory experiences in perceiving subjects*, sensory qualities clearly cannot impact insensate objects like rocks. Sensory properties like colors are the *purely sensible quality* of

¹²⁴Quoted in Crombie 1996, 85

mind-independent causal powers that can also (non-sensibly) impact insensate objects like rocks.

Likewise, laws of nature are the *purely intelligible quality* of mind-independent causal powers ('God') that can also (non-intelligibly) impact insensate objects like rocks. Laws of nature are the *intellectual impact* that elemental causal powers ('God') have *on us*, as intelligent beings. But the same basic powers causally produce *physical* effects in inanimate objects like rocks—i.e. *law-governed order* or *physical structure*. In short, the laws of nature are the purely intelligible quality of the causal impact that basic powers ('God') have on observable phenomena ('matter'), insofar as these phenomena are ordered into explanatorily-basic *physical structures*.

Maudlin's flawed scheme also bears meaningful resemblance to *deism* of the sort that Newton and other 17th-century voluntarist natural philosophers strongly rejected. One dimension of this conflict concerned deists' emphasis on natural religion to the total exclusion of revelation—unlike a deist, for instance, Newton did not reject the authority of Scripture, and he allowed for the possibility that God could at any moment suspend the laws of nature established by his ordained (as opposed to absolute) power.¹²⁵ However, this debate about the status of religious revelation clearly has no deep ongoing interest from the standpoint of present-day secularized science. (Modern secularists would presumably side with deists against Newton on this point.)

But other aspects of the conflict between voluntarists like Boyle or Newton and the deists are more directly relevant to metaphysical analysis of present-day science. For instance, it is clearly part of both Boyle's and Newton's views that God *continually impacts nature*. Thus, whereas the deist claims that “after the first formation of the universe, all things are brought to pass by the settled laws of nature,” Boyle insists that “the omniscient and almighty author of things” in fact “constantly maintains” the “laws of motion” that He “established” in first “fram[ing]” the world.¹²⁶ In a broadly similar vein, Steve Shapin observes that Newtonians envisioned a God close enough to the natural world to “sustain its routine operations” and even (recall) “suspend or alter them as he will.”¹²⁷ (Shapin notes that this desire for an always- and

125As James E. Force observes, e.g.: “[Newton's] Arian position is definitely unorthodox, even heretical, but it is clearly not deistic. Even in his Arianism, Newton takes the Bible seriously” (Force 1990b, 60); “Newton's God of dominion causes him to spurn as idolatrous anyone who dilutes the dominion of God whether through deistic mockery of God's power or through misguidedly worshipping false images of God or false metaphysical conceptions of God. This includes deistic radical Whigs who laugh at the story of Moses and the flood as well as moderate low churchmen who subscribe to the Trinitarian heresy and the moderate Whig political establishment which supports that false creed” (Force 1990a, 94). On Newton contra deism, see also Popkin 1990, 5; Snobelen 2001, 176; Jacob and Jacob 1980, 265.

126Quoted in Crombie 1996, 85.

127Shapin 1981, 195.

everywhere-active God “could without care slide into one of God as 'the soul of the world'—a notion to which [as we have seen] the Newtonian voluntarist tradition was[...]unremittingly hostile.”¹²⁸ Newtonians hence faced a distinctive challenge of reconciling this tension, rooted in voluntarism. Perhaps more promising than Newton's own attempt at doing so, which involved invoking absolute space as the 'sensorium' of an omnipresent God, is this alternative scheme: elemental forces are *everywhere directly active without being anywhere directly present* in the 'material' world.¹²⁹) Maudlin's claim that laws of nature 'produce' later physical states of affairs from earlier ones is fairly close to early modern deists' vision of a 'clockwork' universe that runs independently after first being 'set up' by an Architect. Of course, Maudlin has no 'Watchmaker'. But his conception of the laws' productive power vis-à-vis the natural order is nevertheless quite like early modern deists'. In short, Maudlin's view is arguably a kind of 'deism without God'. This is another way to view what I earlier described as his 'conceptually-confused combination of tropes from Greek rationalism and modern scientific notions of efficient causation'.

A secularized version of Newton's or Boyle's anti-deist scheme can be summarized as follows: 'laws of nature' are the purely intelligible quality of the impact that basic causal powers ('God') have on observable phenomena ('matter'), insofar as these phenomena are ordered into explanatorily-basic *physical structures*. Hence, law-governed order is 'constantly maintained' by 'divine' causal power, just as Boyle insists. 'God' is thus never as 'absent' as deists claim. But 'divine' power is also not the 'soul of the world' or the intelligible Form *immanent* in 'material' things as their ideal *essence*, as in neo-Aristotelian scholasticism, Continental rationalism à la Spinoza, or post-Kantian idealism. Rather, 'divine' causal power is *beyond* the 'material' order.

How is this appeal to causal power 'beyond' the material order not a kind of mysticism or supernaturalism? First, one need not construe 'divine' Power as *personal*. Newton and Boyle still viewed God as morally benevolent, for instance, as well as omnipotent. Let us abandon this view, on behalf of modern secularism. Let us also reject Einstein's quasi-secularized appeal to a cosmic 'intelligence'. And let us reject teleological appeals to cosmic 'purpose' or 'aims'. Hence, we may view 'divine' causal power as amoral, arational, and atelic—entirely *inhuman*. Let us refer to this 'divine' power as *elemental physical force*. Elemental physical force is not mystical, insofar as we apprehend it only via the explanatorily-basic structural relations among observable phenomena that it causally produces. And it is not supernatural, insofar as it is just impersonal

128Shapin 1981, 195.

129I elaborate this slogan below.

causal power, or (qua 'force' in a stricter sense) the exercise of this power on actual phenomena.

How is elemental physical force 'beyond' the material order? Elemental physical force 'transcends' the material order in the way that any *cause* 'transcends' its *effects*. The 'material' order disclosed by modern science is the order of things *insofar as they are causally impacted by elemental physical forces*. Hence, physical force itself is 'beyond' the order of 'material' things. Objective phenomena are the *effects* of elemental physical forces. Law-governed order among the phenomena is *caused* by elemental physical forces—not by the laws of nature, and not by 'material' phenomena themselves. Elemental physical forces 'transcend' the phenomenal order.

Boyle, Newton, and other 17th-century natural philosophers influenced by the voluntarist tradition in early modern Christian theology viewed 'divine' Power as coincident with Intellect. It is not. In fact, the 'arbitrariness' of natural law that voluntarists emphasized—as reflected in the deep historical and conceptual connections between voluntarism and empiricism—is best interpreted as evidence that 'God' is not intelligent. 'God' is *arational* Power. 'God' is arational, amoral, atelic power insofar as it causally produces law-like order in the phenomena. 'God' is elemental physical force, which 'transcends' the law-governed phenomenal order in precisely the way that a strictly unobservable *cause* 'transcends' its empirical (albeit purely intelligible) *effect*. A cause is not the 'nature' or 'essence' of its effect. Nor do effects necessarily 'resemble' their causes. Sensory impressions of color need not 'resemble' the causal powers that impinge upon our perceptual organs. Intellectual impressions of the laws of nature need not 'resemble' the basic physical forces that produce genuinely 'lawful' order in 'material' phenomena. Causes are not 'immanent' in their effects. Elemental physical forces are not 'immanent' in the ordered phenomena that they produce. But the laws of nature are pure images of this causal interaction: laws are the intelligible forms of elemental physical forces' impact on observable phenomena.

4.6. Suppose one accepts that *laws* do not causally produce law-governed physical order. Still, why then appeal to 'transcendent' *physical forces* as causes of law-governed order? Why could it not be that 'immanent' *physical entities* ('matter') produce law-governed order either in themselves or in other 'immanent' entities? Indeed, is this not by far the most plausible position?

As a first point of clarification, note that my appeal to 'transcendent' physical forces is purely *aspectual*. That is, I take 'transcendent' physical forces and 'immanent' physical objects to be alternate ways of characterizing the same mind-independent reality. Forces are things *insofar*

as they have impact, whereas objects are things *insofar as they are impacted*. Here consider by analogy the Kantian distinction between the 'thing in itself' [*Ding an sich*] and the *object*, or thing insofar as it appears to us mediated by the forms of our own sensible intuition and understanding (i.e. space, time, and the categories). On the most plausible interpretation of Kant's view, the 'thing' that merely appears to us as an object or determinate phenomenon is *the same thing* as the 'thing' that we cannot know as it is in itself.¹³⁰ For instance:

[...] the same objects can be considered from two different sides, on the one side as objects of the senses and the understanding for experience, and on the other side as objects that are merely thought at most for isolated reason striving beyond the bounds of experience. (*KrV* Bxviii–Bxix, note)

[...] the reservation must well be noted that even if we cannot cognize these same objects as things in themselves, we are at least able to think of them as things in themselves. (*KrV* Bxxvi)

Similarly, then, I am claiming that the 'things' we apprehend as forces (insofar as they have impact) are *the same things* as the 'things' we apprehend as objects (insofar as they are impacted). To be clear: I do not claim that there is a one-to-one correspondence between objects and loci of force. By analogy, I take Kant's view to be naive insofar as he arguably envisions a one-to-one correspondence between 'phenomena' and 'things in themselves'. Hence, somewhat more precisely, I claim simply that the same *mind-independent reality* appears to us as 'transcendent' *power* when it presents itself to us as an order of interacting *forces*, and as 'immanent' physical *objects* when we represent it as a field of things with passive qualities or 'intrinsic' properties.

But why bother to make this 'aspectual' distinction? In light of modern secularization, why not instead simply 're-invest' the active power or force that 17th-century voluntarists like Boyle and Newton associated with God back into the physical world? Or why not just abandon the idea that there is any need for 'Power', beyond 'Matter' and 'Laws'? My full response to these apt questions will require extended argumentation, running through the rest of this dissertation.

As an initial point of response, however, it should be noted that late modern secularization *has not in fact achieved a re-investment of 'transcendent' Power back into nature as described by modern empirical science*. This failure is plausibly the basic cause of the widespread sense among Romantic and other Counter-Enlightenment critics that the worldview

¹³⁰See e.g. Allison 1983/2004.

of modern science is somehow regrettably 'disenchanted'.¹³¹ In other words, poetically sensitive critics in the late modern period correctly perceive that secularized science involves a kind of evacuation of value or genuine reality from the natural world. And, in turn, I claim that this is plausibly viewed as the direct 'residue' of the distinctively 'transcendent' notions of God deployed by 17th-century natural philosophers like Boyle and Newton—who, working within a broader voluntarist natural theological tradition, laid down the foundations of modern scientific thought.

Thus, less than a century after Newton's death, Goethe bemoaned the mechanistic order of “matter in motion from all eternity” as a “melancholy, atheistical half-night, in which earth vanished with all its images, heaven with all its stars.”¹³² Likewise the German Romantic writer Jean Paul, a contemporary of Goethe's,¹³³ lamented the modern scientific vision of nature as an “all-powerful, blind, lonesome machine.”¹³⁴ So too, in 1860 Emerson decried the way in which modern science (he believed) always remains 'at arm's length' from its objects:

What a parade we make of our science, and how far off, and at arm's length, it is from its objects! Our botany is all names, not powers: poets and romancers talk of herbs of grace and healing; but what does the botanist know of the virtues of his weeds? The geologist lays bare the strata, and can tell them all on his fingers: but does he know what effect passes into the man who builds his house in them? what effect on the race that inhabits a granite shelf? what on the inhabitants of marl and of alluvium?[...]The motive of science was the extension of man, on all sides, into Nature, till his hands should touch the stars, his eyes see through the earth, his ears understand the language of beast and bird, and the sense of the wind; and, through his sympathy, heaven and earth should talk with him. But that is not our science. These geologies, chemistries, astronomies, seem to make wise, but they leave us where they found us.¹³⁵

And towards the end of the 19th century, in turn, Nietzsche characteristically pulled no punches:

Our whole modern world is caught in the net of Alexandrian culture, and the highest ideal it knows is theoretical man, equipped with the highest powers of understanding and working in the service of science, whose

131See also Max Weber's 1917 lecture on 'Science as a Vocation' (Weber 1946).

132Goethe 1848, 425; quoted in Friedrich Albert Lange's *History of Materialism* (Lange 1880, 149). Goethe is here commenting—very critically—on d'Holbach's *Système de la Nature*.

133On the relationship between the two, see Maurer 1934.

134Jean Pauls *samtliche Werke*, ed. E. Berend (Weimar, 1935), XI, 84 f.; quoted in Wetzels 1971, 47.

135Emerson 1983, 1099-1100 (from the essay “Beauty” in *The Conduct of Life* [1860]).

archetype and progenitor is Socrates. (BT 18)

[T]he waking life of a mythically inspired people [*eines mythisch erregten Volkes*]*—the ancient Greeks, for instance—more closely resembles a dream than it does the waking world of a scientifically disenchanted thinker [wissenschaftlich ernüchterten Denkers].* When every tree can suddenly speak as a nymph, when a god in the shape of a bull can drag away maidens, when even the goddess Athena herself is suddenly seen in the company of Peisastratus driving through the market place of Athens with a beautiful team of horses -- and this is what the honest Athenian believed -- then, as in a dream, anything is possible at each moment, and all of nature swarms around man as if it were nothing but a masquerade of the gods, who were merely amusing themselves by deceiving men in all these shapes. (TL 2 [1873])

[L]et us now picture the abstract man, untutored by myth; abstract education; abstract morality; abstract law; the abstract state; let us imagine the lawless roving of the artistic imagination, unchecked by any native myth; let us think of a culture that has no fixed and sacred primordial site but is doomed to exhaust all possibilities and to nourish itself wretchedly on all other cultures—there we have the present age, the result of that Socratism which is bent on the destruction of myth. And now the mythless man stands eternally hungry, surrounded by all past ages, and digs and grubs for roots, even if he has to dig for them among the remotest antiquities. The tremendous historical need of our unsatisfied modern culture, the assembling around one of countless other cultures, the consuming desire for knowledge—what does all this point to, if not to the loss of myth, the loss of the mythical home, the mythical maternal womb? Let us ask ourselves whether the feverish and uncanny excitement of this culture is anything but the greedy seizing and snatching at food of a hungry man—and who would care to contribute anything to a culture that cannot be satisfied no matter how much it devours, and at whose contact the most vigorous and wholesome nourishment is changed into 'history and criticism'? (BT 23).

In this light, Nietzsche insists that there is a crucial difference between the genuine “Apolline tendency”—which he associates with prophetic dream-vision, beautiful semblance [*Schein*], clearly-delimited boundaries between objects, image-based arts, and 'great and sublime' forms—and the debased “withdraw[al] into the cocoon of logical schematism” that he associates with the rise of Socratic rationalism and the corresponding 'death' of Greek tragedy (BT 14). Likewise, he distinguishes genuine “Apolline contemplation” from mere “cool, paradoxical thoughts” (BT 12). This is part of Nietzsche's broader critique of the modern 'will to truth': he believes (recall) that

modern history reveals an ongoing “self-overcoming of morality, out of truthfulness” (*EH* “Destiny” 3)¹³⁶ reflected not only in post-Enlightenment society's growing disillusionment with attempts to view nature as 'proof of the goodness and governance of a god', or even 'as if' it were such proof, but also in a concomitant increase in societal “faith in science” (*GS* 344; *GM* III:24) and ensuing collapse into radical “nihilism” (*GM P 5 et passim*)¹³⁷ as this secularized form of “Christian truthfulness” (*GM* III:27),¹³⁸ too, ultimately turns against itself. (See Appendix B.)

For scientifically-literate and technically-minded modern readers, it can be tempting to reject views like these as excessively sentimental, anti-intellectual, or reactionary. However, this is neither a charitable nor an intellectually deep response. Far better, on my view, is to see them as fair points of criticism rooted in an acute, if one-sided, understanding of the basic structure of modern scientific thought. Namely, Romantic and other Counter-Enlightenment critics correctly perceived the same *passive* or *inert* quality of modern scientific objects that the 17th-century founders of science related to the imposition of natural law by a *transcendent* and *almighty* God. Goethe, Emerson, and Nietzsche were thus in total agreement with Boyle and Newton that elemental reality is systematically excluded from the contents of modern scientific representation—whether they conceived of this elemental reality as the personal *God* of Christianity (like the 17th-century scientific *virtuosi*) , or (like Nietzsche) as amoral, arational, vitalistic *will to power*.

Perhaps they are all correct, here, and the naive modern 'scientific naturalist' is wrong. Perhaps we are deluding ourselves if we deny that modern scientific representation evacuates meaning from the world. Perhaps we are deluding ourselves if we insist that modern scientific representation shows us *reality*, and not just a field of *objective appearances*. This is my view.

Reality is force. To be real is to exercise power, to be a locus of force. A thing that is only determined by higher forces, as a mere object for their outlet, is unreal—nothing but an appearance, nothing but an image of underlying reality. Objective reality is the all-encompassing

136Similarly: “The priest too knows[...]that there is no longer any 'God', any 'sinner', any 'Redeemer'—that 'free will' and 'moral world order' are lies: seriousness, the profound self-overcoming of the spirit, no longer permits anybody not to know about this” (*A* 38).

137See also *KSA* 12:7[64], *KSA* 12:10[42], *KSA* 13:14[86], *KSA* 12:10[192], *KSA* 12:9[35], *KSA* 13:11[108].

138More fully: “All great things bring about their own destruction through an act of self-overcoming[...]In this way Christianity *as a dogma* was destroyed by its own morality; in the same way Christianity *as morality* must now perish, too: we stand on the threshold of *this* event. After Christian truthfulness has drawn one inference after another, it must end by drawing its *most striking inference*, its inference *against* itself” (*GM* III:27). Consider also: “[...]in us the will to truth becomes conscious of itself as a *problem*[...]As the will to truth thus gains self-consciousness[...]morality will gradually *perish* now” (*GM* III:27); “It is not the victory of science that distinguishes our nineteenth century, but the victory of scientific method over science” (*KSA* 13:15[51]); “... [H]istory *must* itself resolve the problem of history, knowledge *must* turn its sting against itself” (*HL* 8).

field of interacting forces. This basic field is not itself a force. It is an unreal but objectively valid space, or dimensional structure, that contains all things insofar as they are objects impacted by force. Objective reality is an unreal but objectively valid representation of nature as an all-encompassing field-of-effect. Nature is real, however. Nature is the real order of primitive forces, interacting prior to any containment by embedding spaces or unifying Forms. We directly apprehend nature in poetry. And we represent nature as objective reality in science. Poetry presents mind-independent reality as a real order of *forces*. Science represents the same mind-independent reality as an all-encompassing field of appearances: impact-images—*objects*.

Why not simply 're-invest' the Power of 'God' back into the world as described by modern science, then? *Because the result is not genuinely scientific representation.* I argue to this effect at length below, in Chapter IV—in part by showing how one can construct interpretations of various modern aspects of modern physical theory that are no less empirically adequate or explanatorily powerful than standard interpretations, yet which fail to be truly scientific. This failure illuminates the nature and limits of scientific representation, by contrast to poetic thought.

Why not simply reject modern scientific thought, then? Or at least, why not simply relegate it to the status of a 'useful fiction' that often helps us to navigate our environment, but which fails to provide any genuine insight into fundamental reality? In short, because scientific representation is also a genuine way of understanding the 'divine' forces that it systematically excludes from its contents. Just as 17th-century natural philosophers clearly believed that it was possible to glorify God by coming to know the basic laws of nature, I claim that it is possible to apprehend and value elemental physical forces through scientific inquiry. This is not a *depictive* or straightforwardly *representational* mode of knowledge: we do not 'copy' or 'picture' elemental forces, in modern scientific representation. Rather, we *use* elemental physical forces *to* represent 'material' objects—by determining these objects with respect to explanatorily-basic *physical structures* that encode these elemental forces' causal impact on observable phenomena. The 'laws of nature', in an expansive sense of the term that applies even to the non-exact sciences, are the *fields-of-effect* of causally-basic forces. In modern empirical science, we *use* the structure of basic physical forces' causal impact to 'picture' corresponding fields of objective phenomena.

But modern scientific theory does present us with a range of genuine forces—surely? What about electromagnetism, and the strong and weak nuclear forces? What about fluid dynamics, and heat transfer, and stress, and shear, and torsion, and torque, and glaciation, and

tectonic motion, and galactic formation? What about acidification, and combustion, and mitosis, and photosynthesis, and respiration, and evolutionary selection? What about theories of social revolution, and power dynamics, and market pressures, and nuclear strategy? How is this world not teeming with real forces? How is it a 'disenchanted' world? How is not just *the real world*?

The relationship between physical *phenomena*—i.e. the empirical explananda in any field of modern science or empirically-based systematic humanistic theory—and the *physical structures* that (scientifically) explain them is essentially different in kind from the relationship that obtains between real *forces* and agonistic or hierarchical structures in which they *interact*. Hence, for instance, the relationship between the outcome of a measurement of the spin angular momentum of an electron in a singlet state and this electron's wavefunction is essentially different in kind from the relationship that obtains between an aesthetically-impactful color and a beautiful form of which it is an element. I analyze this difference at some length below, in Chapters III and IV. But for now, I will conclude this section with a few preliminary remarks on the relation between the *systematicity* of scientific thought and non-scientific modes of *structure*.

4.7. Kant suggests that “systematic unity” is that which “first makes ordinary cognition into science”—i.e. that which “makes a system out of a mere aggregate of it” (*KrV* A832/B860).¹³⁹ In turn, he relates 'systematic unity' directly to the nature of our power of *reason*:

[W]hat reason quite uniquely prescribes and seeks to bring about concerning [the cognitions of our understanding in their entire range] is the systematic in cognition, i.e., its interconnection based on one principle. This unity of reason always presupposes an idea, namely that of the form of a whole of cognition, which precedes the determinate cognition of the parts and contains the conditions for determining *a priori* the place of each part and its relation to the others. Accordingly, this idea postulates complete unity of the understanding's cognition, through which this cognition comes to be not merely la contingent aggregate but a system interconnected in accordance

¹³⁹Hempel makes the related suggestion that “[s]cientific theories are introduced in an effort to bring order into the diversity of the phenomena we encounter in our experience” (Hempel and Jeffrey 2000, 75). Likewise, he claims that “a worthwhile scientific theory explains an empirical law by exhibiting it as one aspect of more comprehensive underlying regularities, which have a variety of other testable aspects as well, i.e., which also imply various other empirical laws. Such a theory thus provides a systematically unified account of many different empirical laws” (Hempel 1965, 444). See also the unificationist accounts of scientific understanding developed by Michael Friedman (1974) and Philip Kitcher (1986). Friedman and Kitcher both follow Kant in positing a relationship between the systematic unity of scientific theory and its realization of broadly epistemic ideals like those of objectivity or theoretical rationality. See Morrison (2000) and Woodward (2003; esp. 362-367) for discussions of different varieties of scientific unification.

with necessary laws. (*KrV* A645/B672)

Unlike an instrumentalist or pragmatist, Kant views “the parsimony of principles” not as “merely a principle of economy for reason,” but rather as “an inner law of its nature” (*KrV* A650/B678). For Kant, reason is “the faculty of deriving the particular from the universal” (*KrV* A646/B674). Reason is thus an *inferential* faculty: we infer *from* a universal *to* a particular that is 'determined' by it, whether in the way that a particular instance of a general kind of 'determined' by this kind, or in the way that a particular term in a functional sequence is 'determined' by the function itself.

Kant in turn distinguishes between two basic 'uses' of reason (*KrV* A647/B675). In the 'apodictic' use of reason, the universal is “in itself certain and given,” and we use it to determine a given particular. In the 'hypothetical' use of reason, by contrast, the universal is “assumed only problematically” (i.e. as a “mere idea”) and “several particular cases, which are all certain, are tested by the [universal] rule, to see if they flow from it.” And if the particular cases *do* seem to follow from the given 'problematically' assumed 'idea', then “the universality of the rule is inferred, including all subsequent cases, even those that are not given in themselves.” (Here Kant is evidently thinking of *inductive* reasoning, as opposed to 'apodictic' *deduction*.)

Hence, one might preliminarily characterize the difference between the systematicity of science and the internal structure of a beautiful object in terms of the distinction between the ('rational') *determination of a given particular by a corresponding universal* and ('aesthetic') *arrangement in the absence of a universal 'rule'*. I elaborate this basic proposal in detail below, in chapters III and IV, indicating both the continuity and discontinuity of my view with Kant's. For the time being, suffice it to say that I take Kant to be wrong to try to 'ground' the structure of scientific cognition in the nature or 'pure form' of our own power of reason. This is precisely backwards: more objectively, we should leverage an analysis of the kind of explanatorily-basic *systematicity* disclosed by modern science to naturalistically understand our own power of reason. The systematicity of scientific cognition is not grounded in reason. The systematicity of scientific cognition, and of reason as the basic faculty of our scientific thought, is grounded in the nature of *physical order*—or real *causal hierarchy* of the sort that grounds the systematic explanatory power of basic *physical structures* corresponding to causally-basic *physical forces*.

In this light, consider Pierre Duhem's paean to the 'beauty' of physical theory in *The Aim and Structure of Physical Theory* (1914):

It is impossible to follow the march of one of the great theories of physics, to see it unroll majestically its regular deductions starting from initial hypotheses, to see its consequences represent a multitude of experimental laws down to the smallest detail, without being charmed by the beauty of such a construction, without feeling keenly that such a creation of the human mind is truly a work of art.¹⁴⁰

Note that, for Duhem, a great physical theory's 'beauty' is evidently grounded in the breadth of explanatory scope and the fertility of its initial hypotheses—from which the theory in its entirety 'unrolls majestically,' culminating in the recovery of 'a multitude of experimental laws down to the smallest detail'—rather than in the beauty of these initial hypotheses viewed in isolation from their explanatory power.¹⁴¹ Hence, in something like the way that Francis Hutcheson relates his aesthetic appreciation of 18th-century physical science to his broader theory of beauty as “uniformity amidst variety,”¹⁴² Duhem seems to find 'beauty' in systematic explanatory power

¹⁴⁰Duhem 1910/1991, 24. More recently, Hempel reports Dirac telling him that he regarded mathematical beauty as a mark of sound physical theory 'because the world itself is basically beautiful'—and indeed 'God made it so', Dirac added in a somewhat more untimely Copernican fashion (Hempel and Jeffrey 2000, 81).

¹⁴¹Note that different domains of scientific inquiry evidently deploy different determinate conceptions of explanatory power, such that the specific way in which a given scientific theory 'unrolls majestically' towards recovery of its explananda depends on the particular form or forms of explanatory power that it exemplifies. Hence, for instance, there is a large qualitative difference between the 'majestic unrolling' of the Copernican heliocentric system in its recovery of astronomical observations and the 'majestic unrolling' of a Darwinian account of morphological development, let alone that of a Marxist theory of political economy or a Nietzschean account of the relationship between modern European secularization and Christian moral conscience. Beyond generic aesthetic (or rational) appreciation of explanatory power, then, one might recognize domain-specific forms of explanatory power as especially beautiful (or sublime, interesting, etc.).

¹⁴²“The figures which excite in us the ideas of beauty seem to be those in which there is *uniformity admist variety*” (Hutcheson, *Inquiry Concerning Beauty* Section II Article III); “I. The beauty of *theorems*, or universal truths demonstrated, deserves a distinct consideration, being of a nature pretty different from the former kinds of beauty; and yet there is none in which we shall see such an amazing variety with uniformity, and hence arises a very great pleasure distinct from prospects of any farther advantage” (Hutcheson, *Inquiry Concerning Beauty* Section III Article I); “There is another beauty is propositions when one theorem contains a great multitude of corollaries easily deducible from it. Thus there are some leading or fundamental properties upon which a long series of theorems can be naturally built[...]In the search of nature there is the like beauty in the knowledge of some great principles or universal forces from which innumerable effects do flow. Such is *gravitation* in Sir Isaac Newton's scheme. What is the aim of our ingenious geometers? A continual enlargement of theorems, or making them extensive, showing how what was formerly known of one figure extends to many others, to figures very unlike the former in appearance. It is easy to see how men are charmed with the beauty of such knowledge, besides its usefulness, and how this sets them upon deducing the properties of each figure from one genesis, and demonstrating the mechanic forces from one theorem of the composition of motion, even after they have sufficient knowledge and certainty in all these truths from distinct independent demonstrations. And this pleasure we enjoy even when we have no prospect of obtaining any other advantage from such manner of deduction than the immediate pleasure of contemplating the beauty; nor could love of fame excite us to such regular methods of deduction, were we not conscious that mankind are pleased with them immediately, by this *internal sense* of their beauty” (Hutcheson *Inquiry Concerning Beauty* Section III Article V); “In every part of the world which we call beautiful there is a surprising uniformity amidst an almost infinite variety. Many parts of the universe

itself. In this respect, Duhem's and Hutcheson's views are arguably a more naive version of Kant's. Kant would not call the rational 'parsimony of principles' *beautiful*. But he does clearly *value* it in its own right, and indeed views it as a *purely ideal endpoint of scientific inquiry*.

Thus Kant claims that the “systematic unity of the knowledge of understanding” is “required by reason” merely in the mode of a “regulative” ideal (i.e. by reason in its merely 'hypothetical' use). This is by direct contrast to Kant's argument that we can have *a priori* knowledge of the applicability of space, time, and the pure 'categories' of understanding—i.e. causality, inherence, subsistence, unity, plurality, existence, possibility, etc.—to the objective contents of our experience. Thus space, time, and the categories are “constitutive” features of objective scientific cognition, for Kant, whereas the comprehensive systematicity of scientific knowledge is a necessary goal of rational inquiry—but one that can never be fully achieved, such that nature as an interconnected whole is actually directly present to us as an empirical object. The unity of science is thus “to be regarded not as given in itself, but as a problem only.”¹⁴³ Note that Kant's characterization of scientific systematicity as a merely 'regulative' ideal is clearly a direct 'residue' of 17th-century natural philosophers' appeal to a purely 'transcendent' God.

In his *Critique of Judgment* (1790), Kant develops this notion of 'regulative' systematicity

seem not at all designed for the use of man; nay, it is but a very small spot with which we have any acquaintance. The figures and motions of the great bodies are not obvious to our senses, but found out by reasoning and reflection, upon many long observations; and yet as far as we can by sense discover, or by reasoning enlarge our knowledge and extend our imagination, we generally find their structure, order, and motion agreeable to our sense of beauty. Every particular object in nature does not indeed appear beautiful to us; but there is a great profusion of beauty over most of the objects which occur either to our senses, or reasonings upon observation. For not to mention that apparent situation of the heavenly bodies in the circumference of a great sphere, which is wholly occasioned by the imperfection of our sign in discerning distances, the forms of all the great bodies in the universe are nearly spherical, the orbits of their revolutions generally elliptic, and without great eccentricity, in those which continually occur to our observation. Now these are figures of great uniformity, and therefore pleasuring to us.[...]Further, to pass by the less obvious uniformity in the proportion of their quantities of matter, distances, times of revolving, to each other, what an exhibit a great instance of uniformity amidst variety than the constant tenour of revolutions in nearly equal times, in each planet around its axis, and the central fire, or sun, through all the ages of which we have any records, and in nearly the same orbit? Thus after certain periods all the same appearances are again renewed. The alternate successions of light and shade, or day and night, constantly pursuing each other around each planet, with an agreeable and regular diversity in the times they possess the several hemispheres, in the summer, harvest, winter, and spring, and the various phases, aspects, and situations of the planets to each other, their conjunctions and oppositions, in which they suddenly darken each other with their conic shades in eclipses, are repeated to us at their fixed periods with invariable constancy. These are the beauties which charm the astronomer, and make his tedious calculations pleasant” (Hutcheson *Inquiry Concerning Beauty* Section II Article V).

143“The hypothetical employment of reason is regulative only; its sole aims is, so far as may be possible, to bring unity into the body of our detailed knowledge, and thereby to *approximate* the rule to universality. The hypothetical employment of reason has, therefore, as its aim the systematic unity of the knowledge of understanding, and this unity is the *criterion of the truth* of its rules. The systematic unity (as a mere idea) is, however, only a *projected* unity, to be regarded not as given in itself, but as a problem only” (*KrV* A647/B675); “the unity required by reason” (*KrV* A648/B676).

in a broadly organicist direction. Here he now identifies the concept of the “purposiveness of nature,”¹⁴⁴ through which “nature is represented[...]as if an understanding contained the ground of the unity of the manifold of its empirical laws,”¹⁴⁵ as a “regulative”¹⁴⁶ feature of cognition—i.e. a “heuristic principle”¹⁴⁷ for scientific inquiry that we must deploy insofar as we are rational even though we cannot justifiably impute *objective* purposiveness to nature, lest “reason [be] seduced into poetic enthusiasm.”¹⁴⁸ But he also now claims that we must treat biological systems *as if* they produce, maintain, regenerate, and reproduce themselves by means of a “self-propagating formative power” that “cannot be explained through the capacity for movement alone (that is, mechanism).”¹⁴⁹ For unlike a mere machine or even a work of art, each part of a genuinely organic being must be viewed “as if existing for the sake of the others and on account of the whole.”¹⁵⁰ Life is (as if) purposively organized, like an artwork or machine. But whereas artworks and machines are organized by external rational beings, life as such “organizes

144 “The universal laws of the understanding, which are at the same time laws of nature, are equally as necessary to it (though they have originated from spontaneity) as the laws of motion are to matter; and their generation presupposes no intention with regard to our faculty of cognition, since only through them do we first obtain a concept of what cognition of things (of nature) is, and they necessarily pertain to nature as object of our cognition in general. Yet that the order of nature in its particular laws, although its multiplicity and diversity at least possibly surpass all our power of comprehension, is yet fitted to it, is, as far as we can see, contingent; and its discovery is a task for the understanding, which is aimed at an end that is necessary for it, namely to introduce into it unity of principles—which purpose must be attributed to nature by the power of judgment, because the understanding cannot prescribe to it any law on this matter” (5:186-7).

145 “...the principle of the power of judgment in regard to the form of things in nature under empirical laws in general is the purposiveness of nature in its multiplicity. I.e., nature is represented through this concept as if an understanding contained the ground of the unity of the manifold of its empirical laws” (5:180-181).

146 *KU* 5:197.

147 *KU* 5:411.

148 *KU* 5:410.

149 *KU* 5:374. Compare the notion of *Bildungstrieb* (formative drive) developed by Johann Friedrich Blumenbach (1752-1840): “[T]here exists in all living creatures, from men to maggots and from cedar trees to mold, a particular inborn, lifelong active drive [*Trieb*]. This drive initially bestows on creatures their form, then preserves it, and, if they become injured, where possible restores their form. This is a drive (or tendency or effort, however you wish to call it) that is completely different from the common features of the body generally; it is also completely different from the other species forces [*Kräften*] of organized bodies in particular. It shows itself to be one of the first causes of all generation, nutrition, and reproduction. In order to avoid all misunderstanding and to distinguish it from all the other nature powers, I give it the name of *Bildungstrieb (nisus formativus)*” (Blumenbach, *Über den Bildungstrieb*, 1st ed. (1781); quoted in Richards 2002, 218-219)” Kant was aware of Blumenbach’s work, and indeed mentions him in connection to the *Bildungstrieb* in the *Critique of Judgment* (5:424).

150 *KU* 5:373-4. As one historian concisely summarizes: “[F]or objects to be constituted 'organisms' or, as Kant also refers to them, 'natural purposes,' they have to meet the following criteria: their parts form reciprocal means-ends relationships; those parts come into existence and achieve a particular form for the sake of one another (through growth, maintenance, and reproduction); and the entire system has to be understood as resulting from an idea of the whole. No mere mechanism displays all of these features. And thus no natural purposes can be understood by us in purely mechanistic terms” (Richards 2002, 66).

itself.”¹⁵¹ Unlike the Newtonian conception of matter in law-governed motion as the creative product of a transcendent God, in other words, Kant's vision is now explicitly one of individual biological systems, and ultimately also Nature itself, *as if* they were producing themselves—*as though* the operation of their parts were teleologically oriented towards the realization of an ideal whole. In short, Kant claims that we are *rationally obligated* to view nature as if it were an all-encompassing organic unity. Hence, for Kantian idealists, the unity of a transcendent God is displaced onto (or re-appropriated as) the unity of a transcendent Rational Subject of Experience.

Kant's account is noteworthy with respect to debates about scientific 'disenchantment'. His appeal to all-encompassing organic unity is clearly more 'poetic' in spirit than his uptake of 'mechanistic' causation—as he himself recognizes, in insisting that we 'succumb to poetic enthusiasm' if we view the systematic unity of nature as a *constitutive* principle of reason. But his insistence that it always remains merely *as if* nature were an organic unity is arguably a way of asserting the same kind of 'transcendence' that Boyle, Newton, and other 17th-century natural philosophers working in the voluntarist tradition insisted upon. The unity of ('Divine') Reason is not *immanent* in nature as disclosed by scientific cognition, for Kant, but rather always *beyond* it.

Many post-Kantian theorists attempted to re-assert a more robust principle of immanence. Hence, for instance, the German Romantics assimilated Kant's fascination with teleological explanation, its relation to organic unity and aesthetic experience, and its apparent conflict with the mechanistic explanatory paradigm of Newtonian physical theory. For the Romantics, as for Kant, nature's organic autopoietic power mediates between the orders of efficient causal necessity and human freedom, 'objectivity' and 'subjectivity', the 'material' and the 'ideal'. But largely gone from the Romantic view is Kant's qualification that the purposiveness of nature is a merely regulative principle. For Schelling, Schlegel, Goethe, and others in their milieu, rather, nature is *objectively* purposive: an interconnected whole *literally* (not merely *as if*) directed towards the physical expression of its own limitless creative power, in a continual generation and unending evolution of natural systems approximating ideal forms or archetypes.¹⁵²

151 *KU* 5:374.

152“After Kant, and especially because of the influence of Goethe and Schelling, biologists came to hold the teleological structure of nature not simply *as if* but as intrinsic: nature, whether in the individual or at large, really was purposively organized. But the *Naturphilosophen*, unlike the British natural theologians, did not appeal to a separate Creator who imposed final order on recalcitrant matter. Rather, they conceived nature in Spinozistic fashion—it was *Deus sive natura*: God and nature were one. This meant that the teleological structuring of biological organisms modeled the conceptual structuring of the ideas in terms of which nature was understood. This organic conception of nature—given currency by Herder, Goethe, and Schelling—opposed the mechanical ideal stemming from Descartes and Newton. Within the tradition of *Naturphilosophie*, nature ceased

The Romantics thus envisioned the world as being quite literally a “work of art which is eternally fashioning itself”¹⁵³ in a manner beyond the ken of naively mechanistic physical theory—and they developed a corresponding ethics and politics. This Romantic ethos prioritized creative genius, natural passion, artistic expression, continual self- and social development in a progressive but endless approach toward self-consciously unrealizable ideals, individuality achieved through organic differentiation and the subordination of personal self-interest to the needs of an ideally interconnected social whole, (more generally) the overcoming of alienation by organically unifying opposing forces,¹⁵⁴ and a poetized mode of scientific and philosophical acuity grounded in intuitive receptivity to the beauty of purposive natural forms. Post-Kantian organicists like Schelling judged “Nature itself”—i.e. the infinitely productive “absolutely organic”—to be the fundamental “cause of all organization” prior to and “higher than” the sphere of mechanism, such that “the organic cannot be subordinated to the anorganic.”¹⁵⁵ And they hence deemed mankind to elevate itself insofar as it focalizes Nature's formative power. Life—the ceaseless, purposive productivity of the organic construed in an expansive metaphysical sense—thus became not only the shared essence and common cause of physical and biological phenomena alike, for the Romantics, but also the basic standard of human spiritual achievement.

Romantic theorists attempted to achieve a truly radical synthesis of modern scientific and poetic vision—and thereby (I claim) to re-assert the *immanence* of ultimate reality, construed as *life* or *creative development*, in the natural world as it is disclosed by empirical scientific theory. This attempt at synthesis was never really successful, however. To be sure, various domains of modern scientific thought (evolutionary theory, embryology, geology, energetics, etc.) have been positively influenced by broadly Romantic emphasis on creative development [*Bildung*] as a

to be mere product of the Creator's designs but itself became producer—of itself” (Richards 2002, 10-11); “For the Romantics, for Schlegel, Schelling, Goethe, and later Darwin and Haeckel, nature herself would take on the form of the divine. She would be thought infinitely creative. This is why Schlegel can also refer to ‘the unconscious poetry’ that ‘moves in the plant,’ that streams forth in light, that laughs out in the child, that shimmers in the bud of youth, that glows in the loving breasts of women.’ Nature herself is a Romantic artist whose loving creations become our reality—a sentiment that emerges to explicit philosophical expression, as we will see, in Schelling's *System des transscendentalen Idealismus*” (Richards 2002, 111).

153Friedrich Schlegel, *Gespräch über die Poesie*, 1800; quoted in Lovejoy 1936, 304.

154“While the romantics recognized difference, and indeed celebrated it, they also believed that we should strive to reintegrate it within the wider wholes of state, society, and nature” (Beiser 2003a, 3).

155Schelling, *First Outline of a System of the Philosophy of Nature* (2004, 116). Beiser nicely summarizes: “It is not that there are special organic laws, which are somehow beyond the jurisdiction of mechanism; rather, it is that mechanism is subordinate to organicism. The mechanical is simply a limited case of the teleological, deriving from a partial perspective that considers only the parts in their immediate conditions; but it does not ask for the whys and wherefores of these initial conditions in the first place; instead, it allows the series of causes to regress *ad infinitum*” (Beiser 2003a, 150).

fundamental ontological principle.¹⁵⁶ But Romantic enthusiasm about nature always remains somewhat suspicious, from a more truly modern scientific standpoint. These poetic appeals to 'life' and 'creative energy' always seem *merely* poetic or figurative—as Kant observed. And the same can be said for other post-Romantic attempts to naturalize early modern notions of divine Will, in part by 're-inserting' this Will into nature as the purely 'immanent' principle of its reality. Nietzsche can be placed in this category, e.g., given his vision of universal *will to power*—as can post-Nietzschean 'life philosophers' like Max Scheler, along with neo-vitalists like Henri Bergson or Jakob von Uexküll, and Deleuze as a prominent recent advocate of radical 'immanence'.

The Romantics evidently associated *life* with genuine reality, and mechanistic causation with mere appearance. This mapping of the reality-appearance distinction onto the distinction between organic and mechanical processes is misguided. But the Romantics were still correct in identifying the same basically *inert* character of modern scientific objects that I have argued 17th-century natural philosophers also clearly saw—even though Boyle and Newton (etc.) would have described it differently, by appeal to the equality of all created things below a transcendent God. My basic claim is twofold. First, this same 'inertness' can be more accurately characterized in terms of the difference between *objects*, or things insofar as they are merely impacted, and the real *forces* that impact them. Second, force never shows up in scientific representation *as force*. Scientific representation is the representation of real, mind-independent forces as objective *fields-of-effect* with respect to which mere *objects* or *phenomena* are systematically determined.

4.8. The 'God' of 17th-century voluntarist theology can be naturalistically redescribed as elemental physical force. We do not *see* elemental physical forces as such in truly scientific modes of representation—and this is related to the 'transcendence' of Boyle's or Newton's God. Rather, we *use* elemental physical forces *to* see objects, or phenomena insofar as they are

¹⁵⁶Representatively, e.g.: “The transition from the Newtonian view that the activity of the natural order was to be ascribed to the continued sustenance of passive matter by God's will to the theories of nature proposed in the late eighteenth century by Joseph Priestly and James Hutton which supposed—though in different ways—that activity was intrinsic to matter and immanent in the natural order, was associated with the rejection of Newton's voluntarist theory of nature which supposed that God's will 'sustains the world in its minutest details.' These eighteenth-century natural philosophers emphasized divine omniscience and rejected divine abrogation of the laws of nature as impugning divine foresight, rejecting the voluntarist conception of nature which stressed that God 'gives order as well as deviation from order,' a view that 'diminishes the gap between the natural and the supernatural.’” (Heimann 1978, 272); “Hutton's theory of nature supposed a system of active powers whose self-sufficiency was not to be abrogated by divine intervention, but in regarding the active powers as immanent in nature he did not subsume God's agency under the laws of nature[...]God was transcendent over the order of nature, and 'every existence is to be resolved ... to that infinite Being and superintending mind.' The active powers immanent in the fabric of nature were thus grounded on divine agency” (Heimann 1978, 283)

determined with respect to corresponding explanatorily-basic physical structures. The 'laws of nature', in an expansive sense of the term that applies even to the non-exact sciences, are the *fields-of-effect* of causally-basic forces. In modern empirical science, we *use* the structure of basic physical forces' causal impact to 'picture' corresponding fields of objective phenomena.

5. Primordial Concepts of Force

5.1. Originary concepts of force presumably arose in relation to one or more kinds of primordial experience. A brief foray into this prehistory, which is plausibly recapitulated to some extent in the course of every young child's cognitive development, will help to further illuminate and contextualize two crucial points about what force is (and is not). First: mere effort or subjective exertion is not force, but rather ideal 'force'. True force has impact. Second: to claim that all real things exert force is not to claim that everything is *alive*, or *conscious*. The claim that reality is force is not mystical, un-scientific, or even implausible. It is just extremely unalienated: childlike or 'primitive', in the best sense. It is obvious that all real things exert force.

Several classes of experience are here especially salient, as plausible candidates for the kinds of primordial experience that are most intimately related to pre-scientific concepts of force:

- (i) The experience of actively striving against external or internal sources of resistance—i.e. the feeling of one's own strength, specifically as energy expended or effort exerted.¹⁵⁷

Examples: working to lift or push a heavy object; struggling to continue to climb, hunt, or fashion tools in spite of one's fear, hunger, or fatigue;

- (ii) The experience of actually overcoming resistance or otherwise more conspicuously manifesting one's strength—i.e. apprehension of oneself as impactful, or of one's own controlling influence on things, as opposed to the experience of simply expending energy or exerting effort in the face of potentially overwhelming resistance.

Examples: successfully pushing or lifting a heavy object; cracking open a nut; felling a tree; taming an animal; leading one's fellow men; mastering one's weaker impulses;

¹⁵⁷This first suggestion stems from Max Jammer, Jean Piaget, and Maine de Biran, as discussed below. The other three suggestions are my own, although they do seem to stand in interesting (if difficult to precisely specify) relation to some of Piaget's findings regarding 'child dynamism', again as discussed below.

(iii) The experience of being likewise impacted or strongly influenced from without.

Examples: the feeling of the hard stone against which one falls; the current of the river by which one is borne downstream; the fire by whose heat one is warmed or burned; the blade or claw or thorn that rends one's flesh; the tactile pressure of another person's touch; the passion by which one is overborne; the god or spirit by which one is seized and compelled; the fate by which one is commanded;

(iv) The experience of similar relations of impact or strong influence among external things.

Examples: the tree is scorched and split by the lightning strike; the wildfire consumes the dry undergrowth; the spear let fly pierces through the beast's ribs; the roof holds fast against the pouring rain and the howling wind; the flood waters rise and swallow the earth; the sun warms the rock and rouses the birds at dawn; the branches bend and the grass bows under the wind's influence; the current draws the leaf downstream.

The first of these primordial experiences has been greatly overemphasized, in several other analyses of our concepts of force. And this is plausibly due, in part, to idealistic confusion. The idealist views reality *subjectively*, through the lens of rational will—as a Mind or Spirit. Effort is will construed subjectively. Effort is merely subjective striving towards a goal that may not be realized. Effort is will-power considered apart from its real impact. Effort is merely ideal 'force'.

More broadly, these four types of experience arguably range from more *subjective*, or *inwardly-focused*, to more *outwardly-focused* or *objective*. The first is an experience of one's own internal feeling of effort, as a willful agent. Here force is the *internal-striving-to-become-external*. The second is also an experience of one's own force, but now as one's own concrete impact or controlling influence on external things. Here force is the *internal-actually-externalized*. The third is an experience of force directed toward oneself. Here force is the *internal-determined-by-the-external*. And the fourth is an experience of external force directed toward an external object, or the *external-determined-by-the-external*. In theory, both the third and fourth types of experience could be modeled either in terms of external 'effort' or external 'impact'. In reality, though, primordial apprehension of external force often plausibly involves experience of external things' impact, *not* experience of (or even *as* of) their effort or exertion.

By contrast, Max Jammer identifies precisely the experience of effort or exertion, and *only* this experience, as originary with respect to the concept of force:

The idea of force, in the prescientific stage, was formed most probably by the consciousness of our effort, spent in voluntary actions, as in the immediate experience of moving our limbs, or by the consciousness of the feeling of a resistance to be overcome in lifting a heavy object from the ground and carrying it from one place to another.¹⁵⁸

In other words, Jammer suggests that the concept of force was “taken originally in analogy to human will power, spiritual influence, or muscular effort,” and only thereafter “projected into inanimate objects as a power dwelling in physical things”:¹⁵⁹

The injection of our personal experience into the external environment, characteristic of the animistic stage in the intellectual growth of mankind, led to a vast generalization of the concept of force: trees, rivers, clouds, and stones were endowed with force and were regarded as centers of power. For what is active was thought to be alive, and an object, animal or material, being alive, was conceived as having within it the same sort of force that man recognized in himself.¹⁶⁰

This basic genealogical narrative of prehistoric self-apprehension and anthropomorphic projection is “generally accepted,” according to Jammer, although he makes no attempt to substantiate this claim. Piaget, whom Jammer cites elsewhere nearby, but not with respect to this specific point, suggests that “[t]he fact that the idea of force owes its existence to inner experience seems to be beyond dispute.”¹⁶¹ Hence, perhaps Jammer's belief in the 'general acceptance' of his own speculative genealogy stems from his direct reliance on Piaget's authority, even if he does not explicitly say so.¹⁶² Notably, Piaget himself provides no real evidence for the claim either, beyond arguing that children's conception of force constitutes “a sort of

158Jammer 1957, 17. “Clearly,” he adds, “force,' 'strength,' 'effort,' 'power,' and 'work' were synonymous, as they still are today in ordinary unsophisticated language” (ibid.)

159Ibid., 7. Note that the experience of 'spiritual influence' in fact arguably goes beyond 'consciousness of our effort, spent in voluntary actions' or mere projections of this effort onto the external world—although admittedly, the notion of a 'spirit' is ambiguous.

160Ibid., 17.

161Piaget 1930, 126.

162Not to press the point too much, but here it should be noted that Jammer also uses—without attribution—the phrase “a panpsychism in which every object is endowed with a force *sui generis*, unacquired and untransmissible” (Jammer 1957, 18). This is clearly taken from Piaget, who writes: “In a word, child dynamism is a sort of panpsychism or hylozoism.[...]In child dynamics[...] every substance is endowed with a *sui generis* force, unacquired and untransmissible, constituting the very essence of its activity” (Piaget 1930, 118). I mention this only to provide further evidence that Jammer's claim to the 'general acceptance' of his view probably comes from Piaget, likewise without direct attribution.

panpsychism or hylozoism,¹⁶³ and attributing the genealogical hypothesis in question to the French philosopher Maine de Biran (1766-1824). According to Biran, “the idea of *force* can originally only be taken from the consciousness of the subject who is making an effort; and even when it is abstracted from the fact of consciousness, carried outside and altogether removed from its natural seat, it still retains the traces of its origin.”¹⁶⁴

5.2. But Jammer's account of the origin of the concept of force in a prehistoric 'injection of our personal experience into the external environment' is misguided, for several reasons:

a. *Primordial concepts of force do not have an 'internal' origin.* Piaget's developmental psychological research suggests that among children, at least, force “is first of all discovered in things, before being felt in the self.”¹⁶⁵ This might make Jammer's hypothesized primordial 'projection' of our own effortful striving onto external nature seem straightforwardly untenable. (To his credit, Jammer acknowledges this apparent tension.¹⁶⁶) Piaget's own conclusion is somewhat more subtle, though. Namely, he accepts Biran's claim that the concept of force originates in our 'internal' experience of effort and is only thereby 'transposed' or 'transferred' onto external things. But he insists that this is true only from “the point of view of the objective construction of the idea,” whereas from “the point of view of conscious experience” this order of succession is reversed.¹⁶⁷

Thus Piaget accepts that the concept of force has its 'objective' origin in the sense of our own 'muscular effort', while denying that it is produced by *induction* from this or any other 'internal experience':

163Piaget 1930, 118.

164Quoted in Piaget 1930, 127.

165Piaget 1930, 126.

166“It is tempting to compare these generally accepted ideas on the origin of the concept of force with the psychological formation of this concept in the mind of the child. According to leading schools in modern psychology, the order of this concept-formation in the mind of the child is the exact reverse of the order outlined above. Whereas the idea of force, as explained above, is carried over from the inner experience and consciousness of the subject, the child seems to attribute forces to the objects of his external environment before he finds in himself the 'ego' as the cause of his own force” (Jammer 1957, 17-18). [Jammer immediately proceeds to quote a different but closely related passage from Piaget.]

167Piaget 1930, 126-7. More fully: “The fact that the idea of force owes its existence to inner experience seems to be beyond dispute. [...] This being so, the thorny problem still remains as to how an inner experience could ever lead us to endow external things with forces, for it is far from proven that the child begins by noticing the existence of force in himself. It would seem rather that force, while it is the result of a transposition or transference, is first of all discovered in things, before being felt in the self. In other words, it may very well be that from the point of view of conscious experience, the order of succession in the various moments is the exact reverse of what is it from || the point of view of the objective construction of the idea.”

[The idea of force] is the result of internal experience, but not of an experience which is felt as internal from the first. Force, then, is not a fact given in direct intuition since, coming as it does from the sense of effort, it is originally localized in objects. Further, the idea of force cannot be the result of an induction, since during the early stages, that is to say, during those which mark its zenith, there is little or no boundary between the ego and the external world. For there can only be induction from one term to another in so far as the terms are distinct. What, then, is this reality due to the feeling of muscular effort and yet situated in external objects? How are we to explain this objectification of a schema of organic origin, without falling back upon the convenient but ineffectual ideas of 'projection', of 'introjection', or of 'ejection'?¹⁶⁸

Piaget's answer to these final questions is broadly Kantian—albeit psychologistic in a way that some rigorous neo-Kantians would find objectionable¹⁶⁹—and at least partially indebted to the French idealist philosopher Léon Brunschvicg.¹⁷⁰

According to Piaget, every thought is the product of both 'external contributions' (i.e. “sensorial elements resulting from the pressure exercised on the organism by its immediate surrounding”) and 'internal contributions' (i.e. “motor schemas which organize these sensorial elements into bundles which we call perceptions, ideas, mental experiences”). But these external and internal 'contributions' to thought are “completely undifferentiated from the point of view of the subject's consciousness.” That is, while we continually “assimilate” external 'reality' by means of internal 'motor schemas', nevertheless we cannot consciously apprehend these schemas. Put differently: external sensory stimuli are always filtered and organized by means of internal

¹⁶⁸Piaget 1930, 130.

¹⁶⁹Lanier Anderson summarizes the salient schism within the broad category of 'neo-Kantianism': “[Kant] insisted that one great advantage of his transcendental idealism was to place limits on our knowledge of nature, and indeed on the law-described realm of nature itself, thereby opening up a separate space outside nature where normative practices of moral and cognitive judgment could flourish without threat of attack on materialistic or deterministic grounds.² Neo-Kantian followers like Wilhelm Windelband (1907 [1884], esp. 278–354), noting that psychology belongs to the domain of natural law, extended Kant’s considerations into an explicit anti-psychologistic program. At the same time, though, there is another side to the story. The central arguments from Kant’s own theory of cognition rely heavily on claims about mental acts of synthesis. Some later neo-Kantians, such as F. A. Lange (1902 [1873–5], II, 1–63, 408–31), gave these arguments a straightforwardly psychological construal, and as recent work by Patricia Kitcher (1990, 1995) and others has made apparent, they could find a good deal of textual support for doing so. In the end, therefore, one can very well wonder what the proper ‘neoKantian’ stance toward psychologism should be. The case of psychologism thus exposes a split among neo-Kantians, exemplified in the opposing stances of Windelband and Lange” (Anderson 2005, 288-9).

¹⁷⁰Piaget cites Brunschvicg arguing, contra Biran, that “the 'I' is not a fact of experience that can be isolated, it is the condition of experience, and can only be reached by experience” (Piaget 1930, 129-130). It is unclear how much of Piaget's subsequent discussion is meant to be a paraphrase of Brunschvicg's position, as opposed to an original view.

cognitive processes; but we cannot directly 'see' or experience these cognitive processes themselves; rather, we 'see' only the content of the conscious representations that these internal processes produce. And the concept of force is fundamentally just one among many possible such “schemas of assimilation” whereby we synthesize the raw sensory 'matter' of experience. Specifically, the force-schema is one “built up by the accumulated muscular experiences of the subject, *i.e.* by the residue of all those of his movements that have been accompanied by a sense of effort.” From an 'objective' point of view, then, the concept of force has its origin in internal experience: it is causally grounded in our sense of 'muscular effort'. From a phenomenological point of view, though, our first conscious experience of force is not in awareness of our own effort, but rather in apprehending external things that we have represented—*i.e.* actively synthesized as objects for ourselves—in part by means of this internally-derived but pre-conscious force-schema.¹⁷¹

Of course, it is possible that the concept of force has different 'objective' or 'conscious' origins for prescientific man than it does for present-day children. Jammer indeed appeals to this possibility: “[w]hereas the idea of force, as explained above, is carried over from the inner experience and consciousness of the subject, the child seems to attribute forces to the objects of his external environment before he finds in himself the 'ego' as the cause of his own force.”¹⁷² But this seems fairly unlikely, in fact, especially by comparison to the possibility that Jammer simply conflates the 'point of view of the objective construction of the idea' and the 'point of view of conscious experience'.

Regardless, even Piaget's more nuanced view is wrong. For *even from the 'objective' point of view*, the concept of force plausibly originates just as much—if not more—in the experience of *external* objects. To see this, we must further examine the relationship between force and effort.

b. *Primordial concepts of force are not essentially related to effort.* Contra Piaget's sense of what is 'beyond dispute', his own data seem to show that there is *not* a basic 'objective' link between force and effort. Piaget finds that, when children are given the names of various objects and asked about each in turn whether it is forceful or strong, and then to explain why, their answers can be grouped into several distinct types. He draws some overall conclusions, despite

171Piaget 1930, 129-131.

172Jammer 1957, 17-18.

this complexity: “the child defines material force almost exactly as he defines life;”¹⁷³ “there is no movement, however simple, that [for the child] does not call for the intervention of special forces[...which are] alive (*i.e.* not only teleological, but efficient through the very fact of their being teleological);”¹⁷⁴ “[i]n a word, child dynamism is a sort of panpsychism or hylozoism,”¹⁷⁵ such that for children the world is “filled and animated with intentions,” and “the true cause of a phenomenon is the moral reason for its happening.”¹⁷⁶ Notwithstanding these summary conclusions, Piaget's data in fact suggest that 'child dynamism' is *not* accurately characterized 'in a word' as a form of panpsychism or hylozoism.

According to the type of answer that Piaget himself acknowledges is “by far the most common,” force is defined by children as “activity in general and useful activity in particular.”¹⁷⁷

Thus:

(Tié, 10 years old) 'Has the sun got force?—Yes, because it gives light.—And fire?—Yes, because it burns.—And a stick?—Yes, because it can keep a house up.—And glass?—Yes, because it can cut.—And trees?—Yes, because they make the fruit grow.—[...]Has grass got any force?—Yes, because it is useful.—And a spoon?—Yes, because it is used for all sorts of things.—[...]Have clouds got strength?—No, because they do nothing.—And rain?—Yes, because it makes the seed go into the earth.'

(Krug, 6 years old) 'Are flowers strong?—No, they are only pretty, but they can't do anything.—Is a seed strong?—Yes, because it can make things grow for us.'¹⁷⁸

Despite Piaget's emphasis on the seeming anthropocentrism of these children's responses,¹⁷⁹ it is actually not at all clear that they view 'usefulness' in terms of anything like pragmatic or instrumental value, rather than simply as *being able to 'do something'*. Does Tié see fire's burning or glass's cutting as end-directed or pragmatically valuable? Or is he simply saying that fire *does something* insofar as it burns, and glass insofar as it cuts? Likewise, when he says that grass is 'useful', might he just mean that grass 'does something', by contrast to things like clouds

173Piaget 1930, 121.

174Piaget 1930, 117.

175Piaget 1930, 118.

176Piaget 1930, 120.

177Piaget 1930, 123.

178Piaget 1930, 123.

179“Note to what an extent it is only from our point of view that things are alive and have force [in this sense of 'activity in general and useful activity in particular']” (Piaget 1930, 123).

which he insists 'do nothing'? Note that Krug's responses indirectly motivate the latter interpretation: he recognizes that flowers are pretty, and hence perhaps that they provide him with a nice experience, yet he still insists that they 'can't do anything'.

In short, it is far from obviously a kind of 'panpsychism' or 'hylozoism', or even a more banal form of anthropocentrism, to experience many or all things as loci of *activity*. Again: is the sun's activity of giving light, or the fire's burning, or the glass's cutting, or the tree's making fruit grow, *intentional* or even *instrumentally valuable*, according to Tié? Perhaps—and admittedly, of course, children often impute conscious purposes or final causes to natural phenomena where adults do not. But also perhaps not. Indeed, the answer seems somewhat underdetermined by Piaget's data. That said, it seems plausible that young children have a basic notion of force as activity or 'doing something', which in various contexts they elaborate or articulate in 'panpsychic' or 'hylozoic' fashion, yet nevertheless that panpsychism or hylozoism is not a truly fundamental feature of 'child dynamism'. When children attribute life or intention to inanimate objects, in other words, this can often plausibly be understood as their way of articulating a deeper sense that these objects *do something*. The implicit contrast here is not really things that are *non-conscious* or *non-living*, but rather things that are *inert*. Here it should also be noted that, according to Piaget's findings in another study, children's *first* conception of consciousness is one whereby “everything that is in any way active is conscious.”¹⁸⁰ (“The child in this stage certainly never says that everything is conscious. He simply says that any object may be the seat of consciousness at a given moment, that is to say when the object displays a particular measure of activity or is the seat of some action. Thus a stone may feel nothing, but if it is moved, it will feel it.”¹⁸¹) So, too, in the first stage of children's conception of life, “everything is regarded as living which has activity or a function or a use of any sort.”¹⁸² Hence even if child dynamism is 'a sort of panpsychism or hylozoism,' this would arguably be so only with respect to conceptions of *consciousness* or *life* according to which these phenomena, too, basically just involve *activity*.

Children's indiscriminate attribution of *intentionality* to inanimate objects does plausibly amount to a kind of primordial apprehension of their own capacity for intentional action, at least to a degree. But this does not entail that intentional action, let alone their own intentional action, constitutes the 'objective' ground of children's primordial sense of force as activity. If anything,

180Piaget 1929, 173.

181Piaget 1929, 174.

182Piaget 1929, 194.

the 'objective' order of succession is evidently the reverse. Children have a primordial understanding of force as *doing something*, which is objectively grounded—if it is not simply innate—in pre-conscious impressions of either external loci of impersonal activity or their own purely instinctual behavior and brute causal impact on things. Children then use this primordial understanding of force as activity or 'doing something' to make sense of their own nascent capacity for *intentional* action, *self*-movement, or *effort*. The resultant inchoate sense of self-understanding is in turn immediately projected, prior to robust ego-formation, back onto the loci of essentially-impersonal activity from which it objectively derives. This, then, is the developmental stage at which Piaget's neo-Kantian account of the cognitive synthesis of external reality by means of a pre-conscious 'force-schema' is plausible. For here we do seem to find an 'objective' succession from internal experiences of effort to the representation of external objects, even as the child first *consciously* confronts force in external phenomena. But my point is that Piaget's account evidently neglects a prior developmental stage, wherein inchoate 'inner experiences' of effort or innervation¹⁸³ must be actively related to a pre-existing force-schema that encodes a distinct pre-conscious understanding of force, simply as *activity* or generically *doing something*. The latter is the truly *primordial force-schema*, whereas Piaget describes a merely secondary or derivative one. As the ego consolidates, finally, solidifying the distinction between 'internal' and 'external' experience, children simply come to learn that many external forces are not 'doing something' in exactly the same way that they themselves are when they

183The degree to which the feeling of effort is *afferent* as opposed to *efferent* is contested. (Roughly speaking, afferent neurons carry sensory stimuli from perceptual organs 'inward' to the central nervous system; efferent neurons carry signals like motor commands 'outward' from the central nervous system to effector organs like muscles.) Insofar as effort is associated with feelings of *innervation*, it is something like the *efferent* sensation of supplying energy to our own muscle fibers (etc.), i.e. the feeling of our own motor command. Proske (2005, 780) notes that “[t]he dominant view in the 19th century was that our kinesthetic sense is a consequence of the effort we make to move and arises within the central nervous system, providing us with a 'sensation of innervation'” (the internal quotation is from Hermann von Helmholtz).

Marcora (2009) in turn argues that this 19th-century view is essentially correct. By contrast, he notes that according to various currently popular physiological models, “perceived exertion results from the complex integration of different inputs to the central nervous system (CNS),” including “afferent feedback from the peripheral organs most active during aerobic exercise (i.e., skeletal muscles, heart, and lungs) and other interoceptors, with or without additional inputs from the CNS itself, such as knowledge of the exercise task endpoint.” But Marcora reviews evidence suggesting that “perception of effort during dynamic whole body exercise is independent of afferent feedback from small-diameter muscle afferents, heart, and lungs.” Hence he claims that the sense of effort is in fact a sensation of innervation: “the sense of effort is centrally generated by forwarding neural signals, termed corollary discharges or efference copies, from motor to sensory areas of the cerebral cortex” (2009, 2060). Somewhat more intuitively: according to Marcora, the sense of effort is not produced by afferent feedback from our muscles—thus differentiating effort from feelings of fatigue, stress, tension, etc.—but rather by 'feeling' the motor commands issuing from our own brains, insofar as a secondary copy of these motor signals is routed directly to sensory areas of the cerebral cortex.

exert effort or act intentionally.

In sum, to the extent that children most commonly understand force simply in terms of activity, their idea of force is likely *not* grounded either phenomenologically or 'objectively' in feelings of effort. Rather, this primordial concept of force as activity is either a purely innate category of understanding, or else is objectively grounded in young children's pre-conscious exposure to external things impersonally 'doing something' or to their own purely instinctual behavior and brute causal impact on their environment, as opposed to self-awareness or 'inner experience' in any anthropomorphic sense.

c. *Besides activity, primordial force is tied most directly to movement and to resistance.* Piaget's data also echo the intuitive association between force and *movement*. He finds that, according to the second most common type of response, children understand force in terms of the "capacity for movement."¹⁸⁴ (Likewise, he finds that in the second stage of temporal development in children's conception of *life*, it is "defined by movement, all movement being regarded as in a certain degree spontaneous."¹⁸⁵ So, too, in the second stage of children's conception of *consciousness*, it is "henceforth restricted to things that can move, that is to say no longer to objects, which can for the moment become the seat of a particular movement, but to those ordinarily in motion or whose special function is to be in motion."¹⁸⁶) One qualifying point might seem incidental, but will prove increasingly important as we turn to examine the role of force in modern physical theory: it is not actually clear from Piaget's data that children understand force as the *capacity* for movement, rather than something more like *movement itself*, and some responses in fact clearly indicate the latter conception. Thus R6 (6 years old):

Is an aeroplane strong?—*Rather! It goes fast.*—Is an aeroplane standing still, strong?—*No, because it hasn't got a start (élans) yet.*—What does that mean?—*That it doesn't go very fast.*—What do you mean by having a start?—*When you walk fast.*—Have you got a start?—*Yes, when I'm running.*—What does it do?—*It goes fast.*—What is it like? Have you got one now?—*No. I make it happen myself.*

184Piaget 1930, 121-2.

185Piaget 1929, 194-5. In the *third* stage, "the child distinguishes spontaneous movement from movement imposed by an outside agent and life is identified with the former;" and in the *fourth* stage: "life is restricted wither to animals or to animals and plants" (Piaget 1929, 195).

186Piaget 1929, 179. Thus in this 2nd stage, "the sun and moon, the stars, clouds, rivers, the wind, carts, fire, etc., are all regarded as conscious," while things like benches, walls, stones, and flowers are not (ibid., 179-180). In the *third* stage, consciousness is associated with *self*-movement ("Things that can move of their own accord are conscious" (Piaget 1929, 182); in the *fourth* stage, consciousness is restricted to animals (ibid., 185 ff.).

—How?—*When I run.*—How do you do it?—*I give myself a start.*—[...]¹⁸⁷

The characteristic “most frequently referred to after activity and movement” in Piaget’s test subjects, finally (for our purposes), is *resistance*: “those things are strong, have force, which resist, which do not break.”¹⁸⁸ Here again, we find among children a loose but nevertheless recognizable precursor to distinctively *physical* notions of force—now *inertial* force, in Newtonian terms, as opposed to *impressed* force understood as the cause or explanatory ground of accelerative deviations from inertial motion. Interestingly, Piaget notes that force in this last sense of resistance is “not thought of by the child as passive;” rather, it is “a real activity, closely akin to life itself.”¹⁸⁹ So, for instance, one child insists that the moon has force “*because it couldn’t stay up in the air if it hadn’t any.*”¹⁹⁰ In short, as Piaget concludes, children seem to understand force as resistance in terms of something like an active power of *self-preservation*.

5.3. Thus, insofar as children understand force in terms of *activity* or *doing something*, ‘child dynamism’ is not in fact ‘a sort of panpsychism or hylozoism’—at least not in any ridiculous, or even implausible, sense. Piaget is incorrect. This argument also extends to secondary conceptions of force in terms of *movement* and *resistance*, at least to an extent. Force becomes more overtly anthropomorphic or hylozoic insofar as it is associated with, not just movement, but *self-movement*—or not just resistance, but a *drive* to self-preservation. But these more anthropomorphic or hylozoic notions of force are in fact derivative, both conceptually and psychologically.

Children and ‘prescientific’ man alike clearly represent the world in many ways which modern man—‘enlightened’ and scientifically literate as he is—knows are factually mistaken. Whether this is actually to the advantage of adulthood or of modernity depends in large part on the question of the value of bare truth or factual knowledge. But to their own credit, regardless, children and prescientific man clearly both understand something that modern scientific man seems unable to grasp, as viscerally or as deeply—a dictum basic to pagan consciousness and Nietzschean philosophy alike. ‘*Everything is force,*’ says the child. ‘*Everything is force,*’ says

187Piaget 1930, 122.

188Piaget 1930, 124.

189Piaget 1930, 124.

190Piaget 1930, 125.

prescientific man. *'Everything is force,'* says Nietzsche.¹⁹¹ *'Yes,'* says a more truly modern scientific philosophy of power. Yes, says our own inhumanism. Everything is force.

Force is not effort. Only the subjective or idealistic concept of force stems from the feeling of one's own effortful exertion in willfully striving against resistance. Effort is merely ideal 'force': subjective, unreal 'force'. Rocks do not exert effort. Hurricanes do not exert effort. Nor do celestial bodies, or electrons. Rather, as true loci of force, they have real effect. True force has real external effect, not internal affect. True force has objective impact. Force is the objective exercise of power.

6. Force as the Underlying Ground of Life as Nietzschean 'Self-Overcoming'

Even the body within which individuals treat each other as equals[...], if it is a living and not a dying body, has to do to other bodies what the individuals within it refrain from doing to each other: it will have to be an incarnate will to power, it will strive to grow, spread, seize, become predominant[...] because it is *living* and because life simply *is* will to power.

-Nietzsche, *Beyond Good and Evil* §259

6.1. *How does force, as the objective exercise of power, relate to will to power?* Nietzschean will to power is life construed as a drive to self-overcoming, or amoral and self-expansive vital force. Force itself is metaphysically and ontologically prior to Nietzschean will to power, therefore. Life is just one mode of force. Vital force is just a special case of force.

Nietzsche's theory of will to power is grounded in a subtle misunderstanding, or a kind of half-truth. Namely: Force as such has real impact. Hence, all force as such does indeed 'spread out' or 'extend' beyond itself, in the sense that its real impact or objective field of effect can be understood as an 'external territory' into which force as such 'grows' or 'expands'. Thus a force's real impact is its objective *externalization* or *extension*. But force is not a *drive* to impact; force does not *strive* or *aim* towards its own impact. This is the crux of Nietzsche's mistake, then, or the basic source of his atavistic Romanticism and excessive organicism. Force is not a *will* to impact. Force *just has* impact. Force as such *does* 'expand' or 'grow', insofar as it renders itself objective by producing real impact. But force does not *try* to produce its own impact, or *will* its

191KSA 10:1[3] [1882].

own impact into being. Rather, force is just the *source* or *ground* of impact.

This misunderstanding also leads Nietzsche to subtly mischaracterize *life*, arguably, although I take this point to be far more debatable. Life is not a drive to self-overcoming or the expansion of power, as Nietzsche claims. Life does not *strive* or *aim* towards self-overcoming. Rather, life as such *just is* self-overcoming. Life *just does* overcome itself. Life does not *strive* or *aim* towards the expansion of its own power. Life *just does* expand its own power. Thus life is not will to power, or a drive to increasing force. Life is force that just does grow stronger due to its own impact, without intending to do so. Life's impact rebounds back upon it, and increases its own strength or intensity. Life is *self-amplifying force*.

Vital force, thus construed, has a creative aspect. But it is also destructive. Every act of self-amplification is also an act of self-destruction. Nietzsche understands this point quite well. He insists, for example, that it is the “law of life,” or the “law of the necessity of 'self-overcoming' in the nature of life,” that “[a]ll great things bring about their own destruction through an act of self-overcoming” (*GM* III:27). For “[t]o have purposes, aims, intentions, willing in general, is the same thing as willing to be stronger, willing to grow” (*KSA* 13:11[96]). According to Nietzsche, that is, *every* drive is a drive to self-development, insofar as it is an impulse to grow stronger and in so doing to surpass the old, weaker version of oneself.

But life is not destructive just in the mode of creative self-surpassing. Life also manifests as organic decay and degeneration, as senescence and hence even as dying and as death. Some organic decline is related to *reproduction*, of course—to the depletion of vital force that gives rise to new life, hence still to self-overcoming and creative self-surpassing. But not all organic decay corresponds directly to reproduction and the growth of new life. Life is genuinely also *self-depleting force*, as well as self-amplifying force. Life is organic growth and decay alike. Life is agonistic interplay between self-amplifying and self-depleting force, not just their 'dialectical' interrelation. Life is force in a *positive feedback loop*, force in *unstable equilibrium*.

So understood, life is directly opposed to merely *equilibrating* or *self-regulating* force, i.e. force in the mode of a *negative feedback loop* or Spinozistic *conatus*. (Spinoza [*Ethics* III P.6] claims that “[e]ach thing, as far as it can by its own power, strives to persevere in its being;” this self-preservative striving is *conatus*.) This opposition, between forces in positive and negative feedback loops, is closely related to an opposition that Nietzsche draws between drives to self-overcoming and to mere self-preservation. But my account is more accurate as well as

more fundamental, insofar as life or vital force is just one among many real modes of force.

6.2. Again, Nietzsche views life as essentially characterized by a drive to continual self-overcoming: life “must overcome itself again and again,” and “wants to climb and to overcome itself climbing” (Z II: “On the Tarantulas”). Thus “every living thing does everything it can not to preserve itself but to become *more*” (WP 688 / KSA 13:14[121]), and so too at a finer scale “[w]hat every smallest part of a living organism wants, is an increase of power” (WP 702 / KSA 13:14[174]).¹⁹² The drive of all life towards self-overcoming in turn grounds the fundamentally tragic character of existence, for Nietzsche: it is the “law of life,” or the “law of the necessity of 'self-overcoming' in the nature of life,” that “[a]ll great things bring about their own destruction through an act of self-overcoming” (GM III:27).

This essential drive of life to self-overcoming is moreover identical to the Nietzschean 'will to power'. Here note first that Nietzsche often presents will to power as the essential character or basic principle of (at least)¹⁹³ life in general. (While some commentators interpret Nietzsche as attributing a will to power only to things that are alive in an intuitive sense, he at times apparently endorses a more totalizing form of organicism. Recall, for instance: “[b]eing—we have no idea of it apart from the idea of 'living.'—How can anything dead 'be'?” (WP 582))¹⁹⁴ Hence life, the “really fundamental instinct” of which “aims at *the expansion of power*” (GS 349), is “the instinct for growth, for durability, for an accumulation of forces, for power” (A 6). Similarly, the “will of life” is “bent upon power” (GM II:11) and so itself *is* the will to power (GS 349). In short, will to power is “the essence of life” (GM II:12), and in this sense “life itself simply *is* will to power” (BGE 259).¹⁹⁵ The fact that Nietzsche thus presents life as essentially characterized both by a drive to self-overcoming and a will to power in turn suggests that the will to power *just is* a drive to self-overcoming.¹⁹⁶ That is, life's essential drive to 'climb and to

192Here consider also: “Even the body within which individuals treat each other as equals[...]if it is a living and not a dying body, has to do to other bodies what the individuals within it refrain from doing to each other: it will have to be an incarnate will to power, it will strive to grow, spread, seize, become predominant[...]because it is *living* and because life simply *is* will to power” (BGE 259); “For fundamentally it is the same active force that is at work on a grander scale in those artists of violence and organizers who build states, and that here, internally, on a smaller and pettier scale, directed backward[...]creates for itself a bad conscience and builds negative ideals” (GM II:18).

193Occasionally, Nietzsche suggests that the will to power is literally *everywhere*. E.g. “[L]ife is merely a special case of the will to power” (KSA 13:14[121])). See Richardson, *Nietzsche's System*, 18 n.4 for further examples.

194Here I echo Heidegger's reading of Nietzsche as an organicist.

195Similarly: “Only where there is life is there also will: not will to life but—thus I teach you—will to power” (Z II: “On Self-Overcoming); “life itself is *will to power*” (BGE 13); “There is nothing to life that has value, except the degree of power—assuming that life itself is the will to power” (KSA 12:5[71].10).

196Walter Kaufmann, John Richardson, and Robert Pippin also emphasize the connection between will to power

overcome itself climbing' plausibly just is the “[...]will to power in the organic process by virtue of which dominant, shaping, commanding forces continually extend the bounds of their power and continually simplify within these bounds” (*WP* 644 / *KSA* 12:7[9]).

When Nietzsche characterizes the theoretical activity of “genuine philosophers” in terms of “spirit's power to appropriate the foreign” and its drive to “growth[...]or, more precisely, the *feeling* of growth, the feeling of increased power,”¹⁹⁷ he is thus claiming that 'genuine philosophy' is expressive of the drive to self-overcoming or will to power that he identifies as the essential principle of life. The drive to knowledge of 'genuine philosophers' is for Nietzsche essentially of a kind with the drive to “primitive nourishment” whereby the protoplasm strives to “overcome, appropriate, assimilate” that which it encounters and thereby to “become *stronger*” (*WP* 702 / *KSA* 13:14[174]).

The essential drive of life to self-overcoming is helpfully contrasted, in particular, against a conservative drive to self-preservation or security. Here explicitly positioning himself against modern evolutionary theory as he understands it, Nietzsche claims that the Darwinian “struggle for existence” exists only “as an exception,” for “the total appearance of life is not the extremity, not starvation, but rather riches, profusion, even absurd squandering—and where there is struggle, it is a struggle for *power*” (*TI* “Anti-Darwin”). Furthermore, the result of this struggle for existence, where in exceptional cases it does occur, is “unfortunately the opposite of what Darwin's school desires, and of what one *might* perhaps desire with them—namely, in favor of the strong, the privileged, the fortunate exceptions”:

The species do *not* grow in perfection: the weak prevail over the strong again and again, for they are the great majority—and they are also more *intelligent*. Darwin forgot the spirit (that is English!); *the weak have more spirit*. One must need spirit to acquire spirit; one loses it when one no longer needs it. Whoever has strength dispenses with the spirit ('Let it go!' they think in Germany today; 'the *Reich* must still remain to us.'). It will be noted that by 'spirit' I mean care, patience, cunning, simulation, great self-control, and everything that is mimicry (the latter includes a great deal of so-called virtue). (*TI* “Anti-Darwin”)¹⁹⁸

and self-overcoming, but their interpretations of self-overcoming vary, and each differs from my own. See Pippin, *Nietzsche, Psychology, and First Philosophy*, ch. 6; Kaufmann, *Nietzsche*, 211 ff.; Richardson, *Nietzsche's New Darwinism*, 62-64; and Richardson, *Nietzsche's System*, 26-27.

¹⁹⁷*Beyond Good and Evil* sec. 230.

¹⁹⁸Note that Nietzsche is obviously not simply critical of 'intelligence' or 'spirit' in this passage, even though he associates them directly with 'weakness'. His appeal to the anti-intellectual nationalism of 'the *Reich*' is obviously intended at least ambivalently, if not largely critically. (On the other hand, however, it should be noted that

Contra the attribution of explanatory priority to reproductive fitness in Darwinian biological theory, and likewise contra the Spinozistic doctrine of *conatus*,¹⁹⁹ Nietzsche insists that life fundamentally strives towards increasing power—towards continual growth and the overcoming of ever-greater amounts of resistance. The 'instinct for self-preservation' is merely a “*superfluous* teleological principle[,]” for “[a] living thing seeks above all to *discharge* its strength—life itself is *will to power*; self-preservation is only one of the indirect and most frequent *results*” (*BGE* 13). In other words, the struggle for existence is a derivative phenomenon arising only where life's self-expansive impulse is denied in confrontation with a superior power, to which the lesser can only react or adapt: the drive to self-preservation is the drive to self-overcoming as it manifests in the comparatively weak.

The aforementioned “primitive nourishment” is here illustrative. Nietzsche understands primitive nourishment as a drive to “overcome, appropriate, assimilate” what one encounters and thereby to “become *stronger*” (*WP* 702 / *KSA* 13:14[174]). Hence, on his view nourishment is “only derivative” from an original “desire to incorporate everything” (*WP* 657 / *KSA* 12:5[64]), or “only a consequence of insatiable appropriation, of the will to power” (*WP* 660 / *KSA* 12:2[76]). 'Hunger' construed as a mere “desire for self-preservation” or “replacing a loss” is in turn still more derivative, a mere “specialized and later form” of a ruling drive (*WP* 651 / *KSA* 13:11[121]) that is displayed only in “complicated organisms” in which “the will to power has learned to take other roads to its satisfaction,” and so for which the “need to appropriate [is] *reduced* to hunger, to the need to replace what has been lost” (*WP* 652 / *KSA* 13:14[174]).

In short, to 'succeed' in the Darwinian struggle for existence is to enact a degenerate condition of life. Vitality is not a talent for self-preservation rooted in adaptiveness, but rather the drive of all great things to seek out and overcome worthy opponents, to grow by striving against resistance and thereby to 'bring about their own destruction through an act of self-

Nietzsche's characterization of German nationalism here is far *less* one-sidedly critical than in many other contexts...) And his attitude towards characteristics like 'great self-control' is obviously not simply negative or critical. A plausible interpretation is that Nietzsche is deeply *ambivalent* about intelligence and spirit, for the general sorts of reasons that I have been elaborating at length. In this passage, he simply adds—speculatively but not entirely implausibly—that 'intelligence' and 'spirit' both *originate* in comparative weakness. Note that this is consistent with intelligence and spirit sometimes being *genuine* and *genuinely affirmable* manifestations of the will to power. So, too, it is consistent with the strong often being *wrong* to dismiss intelligence out of hand—and moreover *weak* insofar as they do so. The bowdlerizing interpretive move, then, would be to infer that Nietzsche takes 'intelligence' or 'spirit' to be straightforwardly *better* than primitive strength. That is humanist dreck, though. And it is dubious as Nietzsche interpretation, given the other textual evidence presented here.

199“*Each thing, as far as it can by its own power, strives to persevere in its being*” (Spinoza *Ethics* III P.6).

overcoming' (*GM* III:27). The Nietzschean drive to self-overcoming is a fundamentally anti-conservative impulse towards 'richness, profusion, even absurd squandering'. ("Tell me: how did gold attain the highest value? Because it is uncommon and useless and gleaming and gentle in its splendor; it always gives itself[...]Uncommon is the highest virtue and useless; it is gleaming and gentle in its splendor: a gift-giving virtue is the highest virtue" [Z "On the Gift-Giving Virtue" 1].) The Nietzschean drive to self-overcoming aims not at security or stability, but at the *expansion of power*.

Nietzsche does occasionally seem to treat power itself as basic, as when he suggests that "[w]hat determines rank, sets of rank, is only quanta of power, and nothing else" (*WP* 855). (A more ambiguous case: "What is the objective measure of value? Solely the quantum of enhanced and organized power" (*W P* 674).) But the interpretive significance of such claims is compromised by his failure to systematically distinguish between 'power' and 'will to power'.

Relatedly, again, I claim that the *expansion* of power is not as fundamental as Nietzsche takes it to be. On my view, life or vital force is indeed *self-amplifying* force (as well as *self-depleting* force). But vital force is not the only, or the most important, mode of force. Fundamentally, force is just the ground or real source of objective impact. Force hence 'grows' or 'expands' its sphere of influence, in the sense that force taken together with its real impact is 'bigger' than force viewed in itself. Force as such 'expands' onto its objects by impacting them. But not all force is self-amplifying, i.e. force that becomes stronger over time in a positive feedback loop. Not all force is vital force, that is. And force in general does not 'strive' towards or 'will' its own impact. Force just has impact, without 'trying' to do so. Force is the objectively impactful exercise of power. Force is not 'will to power'. And life is not 'will to power'. Life is self-amplifying force—one among many possible modes of force.

6.3. Several commentators have suggested that the will to power is something like a second-order drive, or more broadly that the theory of will to power concerns not *what* particular 'first-order' drives aim at but rather *how* they aim at their ends. Thus one might first observe that Nietzsche characterizes human beings as complexes of warring drives [*Triebe*]²⁰⁰—drives to sex,

200*BGE* 189; *TI* "Skirmishes" 39; *KSA* 10:24[31]

appropriation,²⁰¹ nourishment,²⁰² procreation,²⁰³ truth,²⁰⁴ artistic creation,²⁰⁵ beauty,²⁰⁶ knowledge,²⁰⁷ intellectual play,²⁰⁸ care for others,²⁰⁹ revenge,²¹⁰ punishment,²¹¹ worship,²¹² praise,²¹³ blame,²¹⁴ and so on, which encounter each other agonistically.²¹⁵ One might then note Nietzsche's claims to the effect that all such first-order drives strive “to be master” of “all the other drives” (*BGE* 6), and infer that Nietzsche's theory of will to power refers to this common agonistic character of first-order drives possessing distinct aims, and not to power as these drives' common underlying aim.

Thus John Richardson argues that while Nietzsche makes “occasional attempts to explain the content of the diverse drives as having evolved[...]out of an undifferentiated will to power,” he “much more common[ly]” appeals to will to power to explain, e.g., not why the sex drive aims at sex, but rather how the sex drive “tries to raise to a higher level” its “preexisting pattern of effort,” or the “distinctive character[.]” that it “already ha[s]”.²¹⁶ In other words, on Richardson's view “[a] drive finds itself already pursuing given ends through a given project,” and “that it wills power explains not why it has this project but how it now tries to improve what it has.”²¹⁷ And in a broadly similar vein, Bernard Reginster (building upon Maudemarie Clark's work)²¹⁸ proposes that will to power is a second-order “desire for the overcoming of resistance in the pursuit of some determinate first-order desire [for something other than power].”²¹⁹ On Reginster's model as Richardson's, therefore, “[t]he will to power [...] is not the ultimate

201 *TI* “Skirmishes” 39; *GS* 118

202 *KSA* 13:11[76]. More precisely, hunger [*des Hungers*] is here referred to as one of 'our drives' [*unsrer Triebe*].

203 *TI* “Skirmishes” 22

204 *Kj* (*GS* 110; *KSA* 12:9[91])

205 *BT* 3. So too the Apollonian and Dionysian are “two interwoven artistic impulses [*Kunsttriebe*]” (*BT* 12).

206 *BT* 4.

207 *BT* 17; *BGE* 6; *D* 45

208 *GS* 110.

209 *D* 143

210 *GS* 49; *KSA* 10:24[31]

211 *Z* II: “On the Tarantulas”

212 *KSA* 12:2[165]

213 *D* 140

214 *D* 140

215 Consider in this context *D* 109, *D* 119, *GS* 110, *KSA* 10:8[23]. For illuminating discussions of Nietzsche's theory of drives, see Katsafanas, “Philosophical Psychology” and “Value, Affect, Drive.”

216 John Richardson, *Nietzsche's System*, 22-3. Bernard Reginster and Paul Katsafanas agree with Richardson's assessment (*ibid.*, 22-24) that will to power concerns *how* drives want, not *what* they want—see Reginster, *The Affirmation of Life*, 129; Katsafanas, “Philosophical Psychology,” 304.

217 Richardson, *Nietzsche's System*, 23.

218 Clark interprets the will to power as a “second-order desire for the ability to satisfy one's other, or first-order, desires” (*Nietzsche on Truth and Philosophy*, 211).

219 Reginster, *The Affirmation of Life*, 132.

motivation of every drive, the final end for the sake of which it pursues its specific end.”²²⁰

This interpretive strategy renders Nietzsche's metaphysics of will to power more immediately palatable—or at least less radical—insofar as it suggests that he does not understand the nature of knowledge, beauty, nourishment, sex, care for others, and the many other aims of the drives he posits directly in terms of power. But this in turn encourages a false dichotomization of Nietzschean drives' particularized ends or 'distinctive characters' and the manner in which these ends are pursued or developed. The distinction between 'what' drives aim at and 'how' they do so is not authentically Nietzschean, and in fact Nietzsche is precisely concerned to demonstrate their essential identity. That is, it is integral to Nietzsche's view that sexual activity, eating, knowing, artistic creation, caring for others, etc. can (he thinks) be shown to *essentially* involve the expression of power.

For example, Nietzsche recognizes that eating something is a way of incorporating it into oneself (*KSA* 12:5[64]), of appropriating another thing (*KSA* 12:2[76]) and thereby increasing one's own strength. In this light, though, power characterizes not only 'how' the drive to nourishment pursues its aim, but also 'what' this aim really amounts to. Similarly, Nietzsche maintains that sexual desire “betrays itself most clearly as a lust for possession: the lover desires unconditional and sole possession of the person for whom he longs; he desires equally unconditional power over the soul and over the body of the beloved; he alone wants to be loved and desires to live and rule in the other soul as supreme and supremely desirable” (*GS* 14).²²¹ Although this passage perhaps fails to present a compelling vision of healthy human sexuality, it certainly suggests that Nietzsche does not conceive of the aim of sexual desire as neatly separable from that of the will to power or drive to self-overcoming. Rather, he is evidently saying that desiring someone sexually is one particular way of manifesting a drive to increasing power. The underlying drive invoked here is apparently meant to have explanatory primacy over the corresponding high-level drive in at least two (not necessarily distinct) senses. First, one experiences sexual desire *because* one wills power, in much the same way that a person might bite his nails *because* he has an oral fixation.²²² Second, the sexual drive *is* essentially a drive to

220 Reginster, *The Affirmation of Life*, 129 (Reginster is here describing Richardson's view, but evidently endorses this aspect of it).

221 See also *KSA* 12:7[9], *KSA* 12:5[64], *KSA* 12:2[76], *WP* 732, *WP* 776.

222 One could claim that a Nietzschean underlying drive is necessary if not sufficient for the existence of corresponding higher-level drives (in this connection see Leiter, *Nietzsche on Morality*, 81-2), but 'necessary' might be too strong.

power, whereas will to power *is not* essentially a sexual drive—sexual libido is an expression of will to power, but not vice versa. This asymmetry again maps onto the case of the oral fixation: intuitively, the nail-biting *is* an expression of the oral fixation, but not vice versa.²²³

Hence despite Richardson's suggestion that for Nietzsche higher-level drives “already hav[e] distinctive characters of their own, *about* which they will power,” and therefore that “to be a will to power, [a higher-level drive] must already want something other than power,”²²⁴ a person need not already want something other than to 'appropriate the foreign' in order to want 'to assimilate the new to the old, to simplify the manifold, and to overlook or repulse whatever is totally contradictory,' and need not already want something other than 'to become *stronger*' in order to want to nourish herself. This is no more mysterious than the fact that a person needn't already want something other than to put things in his mouth in order to want to chew on a pen. In short, it is misleading to present will to power as capable of manifesting only given a distinct drive or desire, since on Nietzsche's view the will to power is an underlying drive that *generates* such putatively 'first-order' drives as determinations or “specializ[at]ions” of itself.²²⁵

The mistake underlying interpretations of will to power as concerning 'how' drives pursue their aims but not 'what' these aims are can be further illuminated in the context of Reginster's insistence that “[s]omething constitutes a resistance only in relation to a determinate end one desires to realize,” and in particular in relation to the determinate end of a “desire for something else than power.”²²⁶ This claim is misguided even though Reginster's motivation is intuitive—namely, he observes that it seems not to make sense to talk about a player overcoming resistance in defeating an opponent (e.g.) unless she has a desire to win, distinct from any second-order desire to overcome resistance in so doing.²²⁷ In fact, though, a competitor need not have such a neatly distinct desire to win. For her fully general drive to overcome resistance may itself find expression in her forming a desire to defeat a given opponent, insofar as she can anticipate the resistance she will face in the process. In this case, her desire to win *just is* an expression of her drive to overcome (increasing amounts of) resistance. Naturally, her desire to defeat her opponent in competition is just one of many possible expressions of her general drive to overcome resistance, and in this sense her desire to win is distinct from her general drive to

223Nietzsche adopts an essentializing attitude towards valuations as well as high-level drives: “[a]ll valuations are only consequences and narrow perspectives in the service of this one will [to power]” (KSA 13:11[96]).

224 Richardson, *Nietzsche's System*, 23.

225Schacht (*Nietzsche*, 230) makes a similar suggestion.

226Reginster, *The Affirmation Life*, 132.

227 The example is Reginster's (*The Affirmation of Life*, 132).

overcome resistance. But the essential aim of the competitor's desire to win is *not* distinct from the aim of her general drive to overcome resistance: both aim essentially at overcoming resistance. Similarly, the drive to bite one's nails *is not* an oral fixation, but perhaps in certain cases this drive to nail-biting *is* essentially an expression of an oral fixation, in that the essential aim of this drive to nail-biting *is*, like that of the oral fixation, to put something in one's mouth.

More generally, on Nietzsche's view higher-level drives are distinct from corresponding underlying drives like the will to power, will to truth, and will to nothingness; but the essential aims of higher-level drives just are those of corresponding underlying drives. Hence higher-level drives are *inessentially* distinct from, but *essentially* identical to, the will to power or universal drive to self-overcoming. All 'first-order' drives manifest a will to power to the extent that they strive 'to be master' of 'all the other drives', as commentators like Richardson and Reginster stress. But Nietzsche evidently views 'power' as an apt description of *what* first-order drives in general 'aim' at, not just *how* they do so.

6.4. Nietzsche's ontology can thus be construed as follows: at the level of fundamental ontology—i.e. what is 'real', rather than simply what exists—there is only a *total will to power* that is identical to an all-encompassing sea of agonistically-interacting *individual drives to power*. If one simply thinks in terms of 'how' drives pursue or develop their aims, then 'will to power' seems to be the *universal* character of all *particular* drives. But in fact power is for Nietzsche also the shared essential aim of all *real* drives. Hence a particular drive that 'strives to be master' of all other drives but which does not itself aim essentially at power is a *merely apparent* drive. Thus insofar as 'power' seems (at most) to aptly characterize *how* many familiar drives pursue their distinctive ends but not *what* these ends are, a Nietzschean will insist that many familiar drives are merely apparent—we must *reinterpret* these familiar drives, for instance through genealogical analysis, in order to see that *in reality* power is the essential character of both 'how' they pursue their ends and 'what' these ends are.

Still, then, the basic question remains: what is power itself, for Nietzsche? Given the above analysis, we can take his account of what a *will* or *drive* is to indicate what he means by *power*. That is, insofar as Nietzsche takes 'willing' or 'driving' to indicate *how* all drives pursue their aims, and insofar as he takes 'power' to indicate both *what* all drives ultimately aim at and *how* they do so, it follows that *what Nietzsche means by 'power' is the same thing he means by*

'driving' or 'willful' activity. (But what is *willing*, for Nietzsche? And how does it relate to *force*, correctly understood? I examine these questions in more detail in the following chapter.)

Nietzschean will to power is a 'will to willful activity', paradoxical though it may sound. He is subtly wrong about the nature of life, insofar as true vital force is just self-amplifying force, not a *drive* or *will* to the expansion of power. And he is wrong to privilege life or vital force as the basic mode of force. Life is simply a special case, not of will to power, but of *force*.

7. Nietzsche Contra Sublimation²²⁸

7.1. Many think that it is best for us to sublimate our “crude” passions and “unrefined” impulses. Here “base” sexual desires and “brute” aggressive drives are paradigmatic. Many take romantic love to be a higher form of attraction, even if they also see animalistic desire as acceptable or even valuable. And many believe that aggressive impulses are elevated when expressed less violently, as in philosophical debate or athletic competition—or even in non-competitive acts of creativity or aesthetic appreciation, like Homer’s epic depiction of martial valor in the *Iliad*, or an audience’s satisfaction in the downfall of a tragic hero. More broadly, Freud claims that “sublimation of impulse” (*Triebsublimierung*) is “what makes it possible for higher psychical activities, scientific, artistic or ideological, to play such an important part in civilization.”²²⁹

But what is sublimation, exactly? And is it in fact better, ethically or psychologically, to sublimate one’s drives? Can behavioral expressions of a drive ever be excessively sublimated? Here I will approach these basic moral psychological questions by way of historical analysis, taking Nietzsche’s account of sublimation—a plausible influence on Freud—as my focal point.²³⁰ I conclude that Nietzsche does not favor “culture” over “natural passion,” or vice versa, generally speaking. Rather, he is fundamentally indifferent to the distinction. However, this radical Nietzschean stance has been obscured by existing interpretive accounts.²³¹

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229Freud 1962, 44. I have substituted ‘impulse’ for Strachey’s ‘instinct,’ as a translation of *Trieb*. For the German text, I have referred to Freud 1930.

230Regarding Nietzsche’s influence on Freud, see, e.g. Waugaman 1973; Lehrer 1995; Chapman and Chapman-Santana 1995. These discussions are typical in noting the apparent continuity between Nietzsche’s appeals to ‘sublimation’ and Freud’s, yet without analyzing the notion in detail. For richer accounts, see, e.g. Gasser 1997, 313–65; and Gemes 2009.

231Euke Phillips may seem to defend the same thesis, but he does not—see Phillips 2012. I elaborate below, but in

Many commentators have claimed that Nietzsche views the “sublimation” (*Sublimierung*) of impulses or drives (*Triebe*) as a positive achievement, if not even as a central feature of his ethical ideal. Thus R. J. Hollingdale claims that “the men [Nietzsche] admired were those whose will to power was strong but sublimated into creativity.”²³² Similarly, Walter Kaufmann argues that Nietzsche uses ‘sublimation’ to refer to “the actual process of the overcoming of the impulses and the kind of control [he] had in mind” as an ethical ideal—whereby strong but immoral individuals like Cesare Borgia might “acquire self-control,” find less brutal modes of outlet for their impulses, and hence truly “achieve greatness.”²³³

Even recent commentators who have advanced more resolutely amoral interpretations tend to imply that Nietzsche takes “sublimation” to be—at least generally speaking—a good thing. Thus Eckart Goebel suggests, “Sublimation in Nietzsche” is “an increase of power, or ‘great self-control.’”²³⁴ On Goebel’s reading, then, “A person who sublimates becomes more powerful, lives better and more intensely, and the most powerful person is the one who best understands how to sublimate [*der Mächtigste ist der, der am besten zu sublimieren versteht*].”²³⁵ So too, Rüdiger Safranski associates Nietzschean sublimation with conscious life acting as “enhancing force,” rather than “inhibiting” force or “anxieties, moral scruples, and resignation.”²³⁶ John Richardson likewise claims that Nietzsche takes drives to reach a “higher or fuller power” insofar as they achieve “‘sublimation’ [*Sublimierung*],” which Richardson construes as “inter-episodic” rather than “intra-episodic” growth. In (mere) “intra-episodic” growth, a drive repeatedly passes towards a fixed aim in a “cyclical form,” as an “episodic rush toward its end.” By contrast, on Richardson’s interpretation a drive is sublimated insofar as “instead of trying just to eat or seduce again and again, it . . . raise[s] its whole pattern of effort ‘to a higher level,’” such that it “break[s] habitual patterns and evolve[s] new forms.”²³⁷ Richardson also indirectly relates sublimation to psychic integration, invoking cases where “A drive is ‘sublimated’ and made to express itself by weaving itself as an ongoing thread in a larger

short: Phillips (2015, 351, 360) claims that Nietzsche “recommend[s] sublimation,” which Phillips takes to involve “translation (or transformation) of the drive’s objects into the imaginative and mental,” as a means to a “refined immorality.” I deny that Nietzsche ultimately privileges any “refinement” of this sort, whether moral or immoral.

²³²Hollingdale 1999, 162.

²³³Kaufmann 1974, 224.

²³⁴Eckart Goebel, *Jenseits des Unbehagens*, 87.

²³⁵Goebel 2009, 87.

²³⁶Safranski 2003, 321.

²³⁷Richardson 1996, 25.

project.”²³⁸ In turn, Ken Gemes interprets Nietzschean sublimation directly in terms of a similar kind of unifying subordination of “weaker” drives to “stronger” or “master” drives. According to Gemes, that is, “Sublimation is what happens when a drive’s primary aim is substituted for by a secondary aim that allows for expression of the drive in a manner consonant with the master drive.”²³⁹ Gemes thus argues that Nietzsche takes sublimation to be “the key means” to the “concerted” expression of drives, and “hence, to overcoming *ressentiment*.”²⁴⁰

Below I argue that while these accounts of Nietzschean sublimation are in many ways helpful, nevertheless they are quite problematic. Nietzsche does praise the forms of “inter-episodic growth” and psychic “integration” that Richardson and Gemes insightfully examine. He does value the “*expansion of power*,” which he views as the aim of “the really fundamental instinct of life” (*GS* 349).²⁴¹ And he does speak highly of achieving certain forms of “self-control.”²⁴² But none of these are what Nietzsche means by the term ‘sublimation’ (*Sublimierung*) and its cognates, in many important cases.²⁴³ On the dominant if not universal Nietzschean usage, rather, for a drive to be sublimated is just for it to be figuratively if not literally “vaporized,” as in the chemical transition from a solid to a gaseous state.²⁴⁴

One (but only one) salient form of psychological “vaporization,” for Nietzsche, is the “translation” of drives from bodily or sensuous to “imaginative and spiritual [*Imaginative und Seelische*]” modes of expression (*GM* II.7).²⁴⁵ This is loosely related to Freudian accounts of

238Richardson 1996, 120.

239Gemes 2009, 48.

240Gemes 2009, 48. Note that Gemes does not claim that sublimation *always* yields an “overcoming of *ressentiment*.” See also Schacht 1983, 370–71; and Swenson 2014. Cf. Assoun 2000, 161–62; and Gasser 1997, 361–64.

241In citations to Nietzsche’s published works and the notes collected in *The Will to Power*, Arabic numerals referring to section numbers follow abbreviations of the title of the work cited. When works are divided into volumes, parts, or chapters, across which sections are not numbered consecutively, Roman numerals or abbreviations of chapter titles precede section numbers, e.g. *GM* II.7 is *On the Genealogy of Morals*, Essay II, Section 7; *HH* “Wanderer,” 181 is *Human, All Too Human*, “The Wanderer and His Shadow,” Section 181; and *TI* “Skirmishes,” 10 is *Twilight of the Idols*, “Skirmishes of an Untimely Man,” Section 10. For some notes collected in *The Will to Power*, I also indicate the year(s) in which Nietzsche wrote them inside square brackets following the section number, e.g. *WP* 123[1887]. For some notes, I instead cite Nietzsche’s complete works edited by Giorgio Colli and Mazzino Montinari (KSA), by volume and fragment number. I follow the Kaufmann and Hollingdale translations for all of Nietzsche’s published works and unpublished notes, except where stated otherwise. For the German text of all of Nietzsche’s published works and unpublished notes, I have referred to Nietzsche’s complete works edited by Colli and Montinari (KSA).

242E.g. consider his appeal to “the self-control and fascination of strength” (*WP* 123[1887]).

243Gemes only claims that his account is “in line with many of [Nietzsche’s] uses of that term” (Gemes 2009, 56n16). Our accounts are thus compatible, insofar as we stress different Nietzschean uses. However, see note 251.

244Below I briefly address the question of whether Nietzsche might intend at least some of his psychological extension of this (al)chemical notion of sublimation to be taken literally, rather than figuratively.

245Here I have substituted ‘spiritual’ for ‘psychical,’ as a translation of *Seelische*.

sublimation, as drives' redirection from sexual to non-sexual aims.²⁴⁶ But the present notion is broader, insofar as sexual desire is just one among many "sensuous" drives. Thus Nietzschean sublimation also includes phenomena like expressing a "drive to cruelty" aesthetically, by creating or enjoying tragic drama, rather than physically—which is not to say sexually.²⁴⁷ And whereas Freud takes sublimation to be crucial to psychic health, Nietzsche is critical of its role (in certain cases) in attenuating our primal drives.

Here it is helpful to distinguish two interrelated concepts of sublimation. First, 'sublimation' can denote figurative elevation, with connotations of ennoblement. Second, 'sublimation' traditionally denoted (al)chemical processes related to "subtilization," whereby solid matter is vaporized or dispersed into a airier or finer, hence lighter and often purer, substance. The first sense is essentially a figurative extension of the second: "vaporized" substances rise upward, which can be viewed as a metaphor for (or a mark of) their ennoblement.

The central concept underlying most if not all Nietzschean uses of *Sublimierung* and its cognates is just a broad psychological analogue of the second, chemical concept: the vaporization of drives—whether it be merely figurative, or at times perhaps more literal.²⁴⁸ One (but only one) specification of this broad psychological analogue of the chemical notion of sublimation, which Nietzsche invokes at times, is the ennobling "elevation" of a drive—for example, via ritual purification that yields a refined "sublimate" drive. A distinct specification of the same broad psychological analogue of chemical sublimation, which he also sometimes invokes, is a drive's "translation" from bodily or sensuous to "imaginative and spiritual" modes of expression. In short, then, Nietzsche emphasizes different features or connotations of the same basic chemical process of sublimation in different rhetorical contexts, as he extends this chemical notion of "vaporization" to the psychological domain by analogy. Hence, he sometimes (but not always) uses 'sublimation' to refer to what he views as decidedly ignoble processes of psychic vaporization, especially via drives' attenuation or otherworldly idealization.

The common belief that imaginative and spiritual expressions of drives are "higher" is unduly moralistic, Nietzsche thus sometimes claims—even as he also often praises apparently "refined" forms of artistic and intellectual expression. By working to reconcile this apparent tension, we can better grasp the complex relationship between Nietzsche's critique of Judeo-

246E.g. Freud says that sublimation "consists in the instinct directing itself towards an aim other than, and remote from, that of sexual satisfaction" (quoted in Gemes 2009, 38). See also Frances Deri 1939.

247Compare *BGE* 229—although Nietzsche here uses *Erhaben* for 'sublime.' I discuss this issue further below.

248See note 244.

Christian morality and his own positive vision of spiritual “elevation.” He is often precisely concerned to show how one kind of sublimation, involving drives’ attenuating vaporization into the imaginative and spiritual domain, runs counter to higher forms of will to power or self-overcoming. Basic drives often can manifest in their full force as culture, or as refinement into culture. But Nietzsche ultimately values basic drives’ powerful expression, without preferring either that this occur specifically as “higher culture” or as “savage” natural impulse.

7.2. Before delving more deeply into the chemical analogy underlying most if not all of Nietzsche’s appeals to psychological ‘sublimation,’ it will be helpful first simply to establish that he sometimes uses the term to characterize phenomena that he views negatively, in a way that clearly limits the applicability of common interpretations. We may begin with a remark from *Human, All Too Human* (1878): “We know vanity [*die Eitelkeit*] only in its feeblest [*abgeschwächtesten*] forms, in its sublimations and small doses [*in ihren Sublimierungen und kleinen Dosen*], because we live in a late and very moderated [*sehr gemilderten*] state of society” (*HH* “Wanderer,” 181).²⁴⁹ Nietzsche’s broader point is that in “primeval conditions [*Urzustände*]” of insecurity and hunger, a “powerful person [*Mächtige*]” who is also “cunning [*listig*]” realizes that “when the fear he engenders increases, his power increases,” and so develops a (vain) drive to “augment *belief* in his power.” Thus while we now see it only in its “feeblest forms,” vanity was once “*the most useful of all things*” to those aiming at power (*HH* “Wanderer,” 181).

Here ‘sublimation’ evidently has little to do with “admirable” channeling of will to power into creativity (contra Hollingdale); nor with “greatness” achieved through “self-control” (contra Kaufmann); nor with “becoming more powerful” or “living more intensely” (contra Goebel); nor with “enhancing force” (contra Safranski); nor with an “inter-episodic growth” of drives which yields their “fuller or truer power” (contra Richardson);²⁵⁰ nor with psychic “integration” achieved by weaving a drive into a larger project or subordinating a “weaker” drive to a “stronger” one, in a way that is a “mark of health” (contra Gemes).²⁵¹ Rather, Nietzsche here

249I have substituted ‘moderated’ for Hollingdale’s bowdlerizing ‘ameliorated,’ as a translation of *gemilderten*.

250Richardson 1996, 25.

251Gemes claims that “Nietzsche, like Freud, takes sublimation as a mark of health” (Gemes 2009, 47). To be sure, it is not fair to expect Gemes’s account to capture all Nietzschean uses of ‘sublimation,’ and perhaps not even most of them—he never claims to do so. However, here it must be noted that Gemes presents *no* quotations in which Nietzsche uses the term ‘sublimation’ in a way that Gemes even claims supports his own interpretation. (Gemes does mention *GM* II.7 and *KSA* 12:254 in a footnote, but does not maintain that these uses are compatible with his

associates sublimation directly with “small doses” and the moderation or attenuation of a basic impulse.

One might object that it is not fair to attribute to Gemes the view that Nietzschean sublimation is *essentially* a matter of integrating drives into a broader psychic whole; nor the view that Nietzsche takes sublimation *always* to serve this end.²⁵² However, note that Gemes must take Nietzschean sublimation to essentially involve a certain kind of psychic integration or unity, insofar as he analyzes it directly in terms of a given subordinate drive’s primary aim being substituted for by a secondary aim that allows this drive to be expressed in a manner consonant with a corresponding master drive.²⁵³ Thus construed, the sublimation of a drive essentially involves its integration into the activity of a “master” drive to which it is subordinated.²⁵⁴

Clearly, then, Nietzsche does not take sublimation (at least in this sense) to essentially involve “greater satisfaction for [a given] drive,” as has been suggested by Luke Phillips, a recent commentator who emphasizes Nietzsche’s occasional associations of ‘sublimation’ with the “imaginative or mental” expression of drives.²⁵⁵ Phillips does acknowledge Nietzsche’s appeal to “sublimations and small doses,” and that this use stands in tension with his own interpretation of Nietzschean sublimation as essentially involving “augmentation of the [sublimated] drive’s power.”²⁵⁶ But Phillips argues that this is just an “exception” to Nietzsche’s “later and more developed use” of the term, both on the grounds that it is “a relatively early use of the word” in Nietzsche’s corpus and because Nietzsche is “seldom careful with his terms and definitions.”²⁵⁷

However, if another salient interpretive hypothesis readily accommodates passages like this one, then interpretive charity speaks in favor of avoiding a quick appeal to lack of care or precision, on Nietzsche’s part. Moreover, his pejorative use of ‘sublimation’ in this passage is

account—indeed, he acknowledges that the second is not [“Freud and Nietzsche on Sublimation,” 56n16]. These are the only two Nietzschean uses of *Sublimierung* or its cognates that he mentions.) This is evidently because Gemes is interested in the contrast between (what he calls) sublimation and repression, not in Nietzsche’s use of certain words. This is fair, and Gemes provides an illuminating analysis of Freud, Nietzsche, and their interrelation. But Gemes does claim that his account is “in line with many of [Nietzsche’s] uses of that term [*Sublimierung*]” (Gemes 2009, 56n16)—yet he does not textually support this claim.

252I am grateful to an anonymous referee at the *Journal of the History of Philosophy* for pressing me on this point.

253Gemes 2009, 48.

254Gemes 2009, 48. That said, not all such instances of local psychic integration amount to the holistic psychic unity of a coherent subject. I therefore do not mean to impute to Gemes the view that Nietzschean sublimation essentially involves or inevitably results in a robustly unified individual, coherent subject etc.

255Phillips 2015, 350. Here recall also Safranski’s association of Nietzschean sublimation with “enhancing force.”

256Phillips 2015, 351.

257Phillips 2016, 364n25.

neither an “exception” nor even restricted to his early works. In *Beyond Good and Evil* (1886), for instance, he argues that “with the help of a religion which indulged and flattered the most sublime herd-animal desires [*den sublimsten Heerdenthier-Begierden*], we have reached the point where we find even in political and social institutions an ever more visible expression of this morality: the *democratic* movement is the heir of the Christian movement” (*BGE* 202). Indeed, even the connotations of moderation or attenuation from the earlier passage on “sublimations and small doses” of vanity are here plausibly retained. In an unpublished note from 1885, for example, Nietzsche appeals to “the total mollification of the democratic herd animal [*die gänzliche Vergutmüthigung des demokratischen Heerdenthieres*]” (*WP* 125).

This usage of ‘sublime’ (*sublimsten*) does not fit any better with Richardson’s or Gemes’s accounts. Again, Richardson claims that Nietzsche believes that a given drive “should try to raise its whole pattern of effort ‘to a higher level,’” and “calls this truer, ‘inter-episodic’ growth ‘sublimation’ [*Sublimierung*].”²⁵⁸ According to Richardson, then, a drive that does not achieve sublimation therefore “misses a fuller or truer power.”²⁵⁹ Richardson’s use of both the normative term ‘should’ and the evocative phrase ‘fuller or truer power’ suggest that Nietzsche takes sublimation to be a positive achievement.²⁶⁰ But this is far from clearly the case in *BGE* 202.

Indeed, Nietzsche evidently does *not* think that herd-animal desires “should” be sublimated into democratic politics, or that they thereby achieve a “fuller or truer power.” Likewise, he clearly does not believe that political impulses should “weave themselves as ongoing threads” into herd-morality construed a “larger project.” Nor is it plausible that Nietzsche believes the “Christian movement” should “evolve” into the “democratic movement,” which he clearly disdains. For instance, he claims that “the advent of democracy” is one of the “symptoms of declining life” that “always means something is wrong” (*GM* III.25). He elaborates elsewhere that “the democratic movement is not only a form of the decay of political organization but a form of the decay, namely the diminution, of man, making him mediocre and

258Richardson 1996, 25.

259Richardson 1996, 25.

260Further, more or less directly after analyzing ‘sublimation’ in terms of “inter-episodic growth,” Richardson claims that “a drive wills power by trying to develop its activity pattern,” where “each such activity pattern wills its own ‘self-overcoming’ [*Selbstüberwindung*]: it wills to rise toward a new and higher level of effort . . . —one that will then have to be overcome in turn” (Richardson 1996, 26). In turn, Richardson identifies will to power as Nietzsche’s basic standard of value—see, e.g. Richardson 1996, 152. It seems that sublimation is thus (for Nietzsche) good, on Richardson’s account, insofar as he takes drives’ willing power or self-overcoming to be good. Note that Richardson still need not claim that all instances of sublimation are equally good, however, insofar as he allows that there are “degrees of realization of the will to power” (Richardson 1996, 142). See also Richardson 2015.

lowering his value” (*BGE* 203).²⁶¹ To be clear: Nietzsche does plausibly believe that the “democratic movement” is a “sublimated” form of the “Christian movement.”²⁶² But this sublimation of Christianity into democratic politics is not something that Nietzsche views as good—not that he takes the prior “Christian movement” to be any better. Contra Gemes, then, in this case it is not true that “Nietzsche, like Freud, takes sublimation as a mark of health.”²⁶³

Several other textual examples will help to drive this point further home. First, consider Nietzsche’s rhetorical question about the impact of “European Christianity”: “doesn’t it seem that a single will dominated Europe for eighteen centuries—to turn man into a *sublime miscarriage* [*eine sublime Missgeburt*]?” (*BGE* 62). He then proceeds to lament “this almost deliberate degeneration and atrophy of man represented by the Christian European” (*BGE* 62). This is hardly the rousing endorsement of the “sublime” that common interpretations of Nietzschean *Sublimierung* might lead one to expect. Indeed, when he refers approvingly to the “sublime self-conquest [*erhabenen Selbst-Bezwungung*]” of higher types, later in the same section, Nietzsche no longer even uses the Latinate root *sublim-*. Later in *Beyond Good and Evil*, likewise, he refers to the “objective man [*der objektive Mensch*]” as “an instrument, something of a slave though certainly the most sublime type of slave [*die sublimste Art des Sklaven*], but in himself nothing” (*BGE* 207). Finally, consider Nietzsche’s harsh criticism of a certain kind of condescending indifference towards religion that he associates with “the great majority of industrious scholars and the other accessories of the universities”:

On the basis of [a German scholar’s] whole trade . . . he is inclined toward a superior, almost good-natured amusement in the face of religion, occasionally mixed with a dash of disdain for the ‘uncleanliness’ of the spirit which he assumes wherever a church is still acknowledged. . . . The practical indifference toward religious matters into which he has been born and brought up is generally sublimated [*sublimiren*] in him into caution and cleanliness [*Behutsamkeit und Reinlichkeit*] that shun contact with religious men and matters; and it may be precisely the depth of his tolerance and humanity that bids him dodge the subtle distress involved in tolerance. . . . how much naivete, venerable, childlike, and boundlessly clumsy naivete lies in the scholar’s faith in his superiority, in the good conscience of his tolerance, in the unsuspecting simple certainty with which his instinct treats the religious man as an inferior

²⁶¹See also *BGE* 44, 242; *TI* “Skirmishes,” 38–39; *WP* 125, 217, 728, 751, and 752.

²⁶²This is a natural political analogue of his famous epistemological claim that “Christian conscience” has been “translated and sublimated [*sublimiert*] into a scientific conscience, into intellectual cleanliness at any price” (*GS* 357; *GM* III.27).

²⁶³Gemes 2009, 49. See note 251 above.

and lower type that he has outgrown, leaving it behind, *beneath* him—him, that presumptuous little dwarf and rabble man, the assiduous and speedy head- and handiworker [*der kleine anmaassliche Zwerg und Pöbelmann, der fleissig-flinke Kopf- und Handarbeiter*] of ‘ideas,’ of ‘modern ideas’! (BGE 58)

Nietzsche claims that “practical indifference towards religious matters” is often “sublimated” into a “caution and cleanliness” that actively shuns them. But the result is clearly not “self-control” or “creativity” in any “admirable” sense (contra Kaufmann and Hollingdale), or the praiseworthy “evolution” of this sublimated practical indifference (contra Richardson). This process of sublimation clearly does not yield “overcoming of *ressentiment*,” on Nietzsche’s view, nor is it a “mark of health” (contra Gemes).²⁶⁴ Rather, it produces only a “presumptuous little dwarf and rabble man,” who wrongly believes himself to be superior to the religious man.

Apparently, Nietzsche is here playing on a spatial metaphor commonly associated with sublimation, namely that of elevation or being raised up. The scholar merely takes himself to have risen above the religious believer, Nietzsche intimates. This common association of the sublime with feelings of transcendence or “elevation” in turn reflects the etymology of the term, in both Longinus’ Greek (*hypsos*, literally “height,” from *húpsi* [“aloft,” “on high”]) and the Latin (*sublimis*: literally, “up to the limit”). Of course, the German term *Sublimierung* and its cognates descend etymologically from the Latin *sublimis*. Notably, though, German philosophy standardly deploys the alternative term *Erhaben* for the modern aesthetic notion of the sublime.

Here philological analysis is instructive. Cohn and Miles report, “The *sublime* words first entered French, as they would enter English, through books of alchemy,” and only subsequently assumed the sense of “that which is placed very high” through an act of “figurative” extension.²⁶⁵ In French, at least, this figurative meaning was first rhetorical, referring to the “grand style,” and only subsequently given the “emotional-aesthetic” meaning characteristic of modern aesthetic theory.²⁶⁶ German, by contrast, “did not experience the extension of the (al)chemical meaning of sublime into figurative uses.”²⁶⁷ *Sublim-* words were thus reserved for chemical concepts, in German, whereas “all aesthetic and figurative terminology is translated into native words: *erhaben, erhihen, veredeln*,” except in “rare” or “extraordinary” cases.²⁶⁸

This historical “resistance of German to the adoption of the foreign word sublime for any

²⁶⁴See note 251.

²⁶⁵Cohn and Miles 1977, 292.

²⁶⁶Cohn and Miles 1977, 292.

²⁶⁷Cohn and Miles 1977, 293.

²⁶⁸Cohn and Miles 1977, 293.

but a chemical vocabulary”²⁶⁹ constitutes prima facie evidence in favor of a more chemically-oriented account of Nietzschean sublimation, and against the applicability of now-intuitive direct associations of sublimation with ennobling elevation. Here intuitions are easily clouded by Freudian uses of the term: “sublimation” is clearly a positive achievement, for Freudians. As Freud’s friend and colleague Ernest Jones defined it, for instance, sublimation is the “deflection of the energy of a sexual impulse to a non-sexual and *socially useful* goal” (my emphasis).²⁷⁰ This connotation of positively contributing to individual psychic health via increased sociability is not obviously part of Nietzsche’s view, though. And the traditional division of labor, whereby Latinate terms were reserved for more narrowly chemical processes and native German terms for both aesthetic and other clearly positive notions of “elevation,” suggests that the strong positive valence of Freudian *Sublimierung* is unusual—hence, not to be quickly imputed to Nietzsche.

But did I not just claim that Nietzsche is playing on the spatial metaphor of elevation, in his critical analysis of the scholar’s “sublimated” practical indifference towards religious matters? And does this not presuppose that Nietzsche takes ‘sublimation’ to mean something like “elevation,” with connotations of improvement or ennoblement, in order for an apparently *ironic* appeal to the scholar’s “sublimated” state to have its intended rhetorical impact? This reading is limited, however, insofar as it fails to ground “elevation” in a more basic chemical notion of “vaporization.” In drawing out this chemical notion’s complex network of associations, it will become apparent that a broad psychological analogue of the traditional chemical sense of ‘sublimation’ is more central than Richardson, Gemes, and others take it to be.²⁷¹ Indeed, the chemical concept of sublimation arguably underlies most, if not all, Nietzschean uses of the term. A proper reading of this chemical analogy thus has important implications for the interpretation of Nietzsche’s view regarding the relative value of drives’ more and less “sublimated” expressions.

269Cohn and Miles 1977, 293.

270Quoted in Davies 1947, 9.

271E.g. in a chapter on “Sublimierung” in his study on *Nietzsche und Freud*, Gasser indicates the traditional (al)chemical meaning only in passing, and this to emphasize that he will be dealing with “the psychological and not the physical concept [*den psychologische und nicht den physikalischen Begriff*]” (Gasser 1997., 314n8). Kaufmann notes the chemical concept, but quickly proceeds to focus on Nietzsche’s “new and lasting meaning,” viz. drives being “channeled into creative spiritual activity, instead of being fulfilled directly” (Kaufmann 1974, 219–20). Phillips likewise notes the basic chemical sense, but then focuses on “the connotation of simultaneous refinement and elevation, specifically in the mental or psychological realm where creativity is at its most effective” (Phillips 2015, 352). However, focus on this connotative nexus obscures various other Nietzschean uses of the term.

7.3. In modern chemistry, ‘sublimation’ refers to an immediate phase transition from a solid into a gaseous state. The Grimms’ *Deutsches Wörterbuch* includes references to nineteenth-century German uses of the noun *sublimat* (‘sublimate’) in a similar vein—for instance, from 1824, “chemisch das erzeugnisz jeder verflüchtigung in starrer, fester oder pulveriger gestalt.”²⁷² A sublimate is thus a solid formed by deposition from a gas that is produced through the sublimation of an original sample. Sublimates are naturally contrasted against sediments. Sublimates are solids deposited above a given sample when it is vaporized (as the resultant gas rises and re-solidifies, for instance in the neck of an alembic), whereas sediments are solids that have settled to the bottom of a liquid mixture.

To grasp the full range of sublimation’s evaluative connotations, in turn, one must note several things about this chemical process. First, it is often used to purify things: an impure sample is sublimated into a purified gas, which is then deposited as a pure sublimate of the original. Insofar as the removal of chemical impurities can in turn be associated with ritual purification, it carries positive evaluative connotations: purified sublimates can be seen as good, whereas sediments are often seen as bad—as the dregs or most undesirable part of something.

This positive evaluative connotation, of sublimation as an ennobling or otherwise valuable form of purification, underlies some of Nietzsche’s uses of the term. For instance:

There have to be fasts of many kinds; and wherever powerful drives and habits prevail, legislators have to see to it that intercalary days are inserted on which such a drive is chained and learns again to hunger. Viewed from a higher vantage point, whole generations and ages that make their appearance, infected with some moral fanaticism, seem to be such times of constraint and fasting during which a drive learns to stoop and submit [*ducken und niederwerfen*], but also to *purify* [*reinigen*] and *sharpen* [*schärfen*] itself. . . . This is also a hint for an explanation of the paradox: why it was precisely during the most Christian period of Europe and altogether only under the pressure of Christian value judgments that the sex drive [*Geschlechtstrieb*] sublimated [*sublimirt*] itself into love [*Liebe*] (*amour-passion*). (BGE 189)

Here Nietzsche identifies love as a “sublimated” sex drive, and directly associates this process with ritual fasting that allows a drive to “learn again to hunger [*wieder einmal hungern lern*].” Notably, this appeal to askesis does not simply concern the praiseworthy subordination of a weaker drive to a stronger one—although Nietzsche’s apparently favorable reference to drives

²⁷²Grimm and Grimm 1971, art. “*sublimat*.”

learning to “stoop and submit” is quite plausibly interpreted in this spirit, apparently in line with Gemes’s account. Rather, Nietzsche’s central focus seems to be on how “constraint and fasting” can allow a drive to “learn to purify and sharpen itself [*aber auch such reinigen und schärfen lernt*].” Likewise, he appeals elsewhere to the “virtue [*Tugend*]” of solitude (*die Einsamkeit*) as a “sublime bent and urge for cleanliness [*ein sublimier Hang und Drang der Reinlichkeit*]” (*BGE* 284), and to the “sublime inclination [*sublime Hang*] of the seeker after knowledge” who has “hardened and sharpened [*gespitzt*] his eye for himself” (*BGE* 230). My account readily explains these passages: Nietzsche consistently uses ‘sublimation’ in the sense of the same basic chemical analogy, and in certain cases specifically emphasizes the link between chemical sublimates and states of ritual purification.

Notably, this kind of “purification” and “sharpening” evidently need not involve psychic integration of the sort that Gemes emphasizes directly, and Richardson indirectly highlights. Psychic integration, in the sense of redirecting a weaker drive to modes of expression that render its activity more “consonant” with a stronger drive, may be one way to produce a purified “sublimate.” And it may hence constitute one kind of “sublimation,” for Nietzsche—albeit still not necessarily the main kind, let alone the only one. But it far from clear that this is truly what Nietzsche has in mind, in *BGE* 189. For here it is precisely “powerful [*mächtige*]” drives, not weaker ones, that Nietzsche claims must at times be ritually “sublimated.” Evidently, this is because powerful drives are often *not* “hungry,” insofar as they are strong enough to “prevail” and realize their ends. Hence, one must fast to artificially induce “hunger” in a powerful drive, which presumably allows it to become even stronger or more intensified in concentrated pursuit of its now-scarce end. It is thus far from clear that Nietzsche envisions the sublimated sex drive as being redirected towards a secondary end that is more in line with a master drive, as on Gemes’s account. While Nietzsche does appeal to “legislators” and to the “pressure” exerted on the sex drive by “Christian value judgments,” it is nevertheless far from clear that he takes the sex drive to be thereby rendered subservient to these legislators or Christian value judgments, as Gemes’s account would suggest. Rather, Nietzsche basic point is that love is a purified and intensified form of the sex drive, produced via ritual askesis, which is hence analogous to a chemical sublimate refined from an impure original sample.

Second, and for my purposes even more importantly, sublimation transforms substances from more solid into airier or more ethereal states. This is the relevant sense of the term in

Milton's *Paradise Lost*, for instance, when an angel describes to Adam how "flow'rs and their fruit, Man's nourishment," are "by gradual scale sublimed" into animal and ultimately intellectual "vital spirits."²⁷³ The angel in turn hopes that "Time may come when . . . from these corporal nutriments perhaps / Your [viz. humans'] bodies may at last turn all to spirit, / . . . and winged ascend / Ethereal as we."²⁷⁴ This second aspect of the chemical analogy in turn has two evaluatively salient components. Airy substances float, rise, or elevate. And airy substances are (it is said) more like mental or spiritual substance than like bodily or natural substance.

In cases where Nietzsche emphasizes the former connotation of elevation or loftiness, his uses of *Sublimierung* or its cognates unsurprisingly tend to be positive in tone. For instance:

Love one's enemies? I think this has been learned well: It is done thousands of times today, in small ways and big ways. Indeed, at times something higher and more sublime [*Höhere und Sublimere*] is done: we learn to *despise* when we love, and precisely when we love best. (*BGE* 216)

There is a *defiance of oneself* of which many forms of asceticism are among the most sublimated expressions [*sublimirtesten Aeusserungen*]. . . . Thus a man climbs on dangerous paths in the highest mountains so as to mock at his fears and trembling knees. (*HH I*.137)

The bad conscience is an illness, there is no doubt about that, but an illness as pregnancy is an illness! Let us seek out the conditions under which this illness has reached its most terrible and most sublime height [*furchtbarsten und sublimsten Gipfel*]. (*GM II*.19)

The attainment of this goal [viz. "to wed the bad conscience to all the *unnatural* inclinations, all those aspirations to the beyond, to that which runs counter to sense, instinct, nature, animal, in short all ideals hitherto, which are one and all hostile to life and ideals that slander the world," and thus to "'let ourselves go' like all the world"] would require a *different* kind of spirit from that likely to appear in this present age: spirits strengthened by war and victory, for whom conquest, adventure, danger, and even pain have become needs; it would require habituation to the keen air of the heights, to winter journeys, to ice and mountains in every sense; it would require even a kind of sublime wickedness [*sublimier Bosheit*], an ultimate, supremely self-confident mischievousness in knowledge that goes with great health; it would require, in brief and alas, precisely this *great health!* (*GM II*.24)

This praise of "sublime" elevation or loftiness is in keeping with Nietzsche's frequent

273Book V, lines 479–90 (Milton 2005, 119).

274Book V, lines 493–99 (Milton 2005, 120).

celebration of levity and laughter, as well as his corresponding criticism of “gravity” or ponderousness. In *Thus Spoke Zarathustra*, representatively: “I laugh in your faces with my laughter of the heights” (Z “On the Tarantulas”). Likewise: “Not by wrath does one kill but by laughter. Come, let us kill the spirit of gravity! I have learned to walk: ever since, I let myself run. I have learned to fly: ever since, I do not want to be pushed before moving along. Now I am light, now I fly, now I see myself beneath myself, now a god dances through me” (Z “On Reading and Writing”).²⁷⁵

Note that I am not claiming that ‘sublimation’ and ‘sublime’ denote only figurative elevation or loftiness, in the above passages. But they evidently do have this meaning, among several others all grounded in the same chemical notion of vaporization, and applied in the psychological context by analogy. It would be grasping at straws to seek out appeals to psychic integration, self-control, or creativity in all such passages. Nietzsche’s appeal to men “tyrannizing over certain parts of their own nature” in *HH* I.137 does arguably suggest a kind of psychic integration, as Gemes’s account would suggest. But this is exceptional, not typical. Nietzsche consistently just has in mind the basic chemical notion of vaporization, and emphasizes different of its features in different rhetorical contexts. Figurative “elevation” is one such feature. And psychic integration—in the sense of redirecting weaker drives towards modes of expression that render their activity consonant with stronger drives—is one way to reach an “elevated” state, on his view. But it is still just one way to do so. While Nietzsche does value some kinds of psychic integration, self-control, and creativity, excessive emphasis on these phenomena obscures his many critical uses of *Sublimierung* or its cognates, and distorts his generic praise of spiritual elevation.

Finally, the most significant cases of Nietzschean ‘sublimation,’ for my purposes, are those in which he emphasizes the second connotation of airiness or ethereality mentioned above: proximity to the spiritual rather than natural domain, or to mind as opposed to body etc. This is related to the spatial metaphor: the heavenly domain of “spiritual” beings is often depicted as located above the merely “natural” world. Here recall Milton’s angel hoping that humans may one day “turn all to spirit, / . . . and winged ascend / Ethereal as we.” Differences in density or solidity are salient in this context, insofar as spiritual substance is taken to rise because it is

²⁷⁵See also *BGE* 193; Z “On the Spirit of Gravity”; Z “On Old and New Tablets,” 2; *GS* 327, 380. By contrast, “Lack of gravity” is by contrast associated with weakness in *WP* 46; but here “gravity” clearly has connotations of cohesion rather than heaviness.

rarefied or less dense than “coarse” matter. Milton’s usage also echoes that of the earlier English poet John Davies, who in his *Nosce Teipsum* (1599) praises how the Mind “turnes Bodies to spirits,”

by *sublimation* strange;
As fire converts to fire the things it burnes,
As we our meats into our nature change.
From their grosse *matter* she abstracts the *formes*,
And draws a kind of *quintessence* from things;
Which to her proper nature she transformes,
To bear them light on her celestiall wings:
This doth she, when from things *particular*,
She doth abstract the *universall kinds*. (John Davies, *Complete Poems*, 43)²⁷⁶

Davies thus celebrates sublimation construed as a path to universal essence or intelligible form. So too, Nietzsche sometimes uses ‘sublimation’ with a broadly similar emphasis on the mental:

Now, when suffering is always the first of the arguments marshaled *against* life, as its most questionable feature, it is salutary to remember the times when people made the opposite assessment, because they could not do without *making* people suffer and saw first-rate magic in it, a veritable seductive lure *to* life. . . . Perhaps I can even be allowed to admit the possibility that pleasure in cruelty [*Lust an der Grausamkeit*] does not really need to have died out: perhaps, just as pain today hurts more [*heute der Schmerz mehr weh*], it needed, in this connection, some kind of sublimation and subtilization [*Sublimierung und Subtilisirung*], it had to be transformed [*übersetzt*] into the imaginative and spiritual [*Imaginative und Seelische*], and adorned with such inoffensive names that they do not arouse the suspicion of even the most delicate hypocritical conscience (‘tragic pity’ is one such name, another is ‘*les nostalgies de la croix*’). (*GM II.7*)²⁷⁷

One crucial Nietzschean psychological analogue of chemical vaporization, then, is the “translation” of drives to more “imaginative and spiritual [*Imaginative und Seelische*]” modes of expression. Notably, Nietzsche also arguably suggests that “pain today hurts more” not in spite of the “sublimation and subtilization” of human “joy in cruelty,” but if anything because of it. I

²⁷⁶See also Linden 1996, 93–94.

²⁷⁷For this passage of *On the Genealogy of Morality*, exclusively, I have followed the translation by Carol Diethe, i.e. the 2006 Cambridge University Press entry in the bibliography below. Because this is a singular case, and in order to avoid unnecessary confusion, I have still used the abbreviation that refers in every other case to the Kaufmann and Hollingdale translation of *On the Genealogy of Morals* (*GM*). Again, I follow the Kaufmann and Hollingdale translations for all of Nietzsche’s published works and unpublished notes, except where stated otherwise. On the point at issue in the passage quoted here, see also *BGE* 229; *WP* 312.

will return to this point shortly below.

In the meantime, and in light of the above analysis, it is reasonable to wonder whether at least some of Nietzsche's appeals to 'sublimation' might involve literal (or perhaps quasi-literal) extensions of chemical processes to the psychological domain, rather than merely a chemical metaphor.²⁷⁸ This is not implausible, *prima facie*, insofar as attention to real structural analogies between chemical and psychological processes could be in keeping with broader naturalistic currents in Nietzsche's philosophy. In fact, some commentators have argued that Nietzsche's appeal to a "chemistry of concepts and sensations [*Chemie der Begriffe und Empfindungen*]" in the first section of *Human, All Too Human* is to be taken quite literally.²⁷⁹ Indeed, Nietzsche himself insists in this section, "Historical philosophy . . . can no longer be separated from natural science [*der Naturwissenschaft*];" he then proceeds to diagnose "unegoistic action" and "disinterested contemplation" as "only sublimations [*Sublimierungen*], in which the basic element seems almost to have dispersed and reveals itself only under the most painstaking observation," before more broadly calling for a "chemistry of the moral [*eine Chemie der moralischen*]" (HH I.1). I wish to remain agnostic with respect to this further interpretive issue, however. For here I wish only to establish that the chemical concept underlies most if not all Nietzschean uses of 'sublimation'—whether his psychological extensions of the chemical notion are meant literally or figuratively.

Thus in most if not all cases where he uses *Sublimierung* or its cognates, Nietzsche apparently has in mind the same basic chemical concept of vaporization, and simply emphasizes different of its features in different rhetorical contexts. Sometimes he places special emphasis on the *purity* of a chemically-refined sublimate. Sometimes he stresses the *elevation* or *lightness* of vapors. Sometimes he emphasizes the *ethereality* of "vaporized" substances, perhaps especially in connection to the "translation" of drives into the "imaginative and spiritual" domain. And he sometimes—but not always—deploys multiple of these analogical associations at once.

While the above discussion has highlighted the variety and nuance of Nietzsche's appeals to 'sublimation,' a few rough trends in his evaluative attitude towards different features of the basic psychological analogy to chemical vaporization can perhaps now be distilled. Nietzsche

278I am grateful to an anonymous referee at the *Journal of the History of Philosophy* for stressing this point.

279E.g. consider Christine Blättler's claim that "Nietzsche's references to chemistry cannot be reduced to the British metaphor of mental or spiritual chemistry [*nicht auf die Metapher der mentalen oder geistigen Chemie der Briten reduzieren*]" (Blättler 2015, 168n72). Here Blättler is approvingly citing Lanfranconi 2000, 107–15. See also Assoun 2000, 161. Regarding Nietzsche's "chemistry of concepts and sensations," see also Heller 1972.

often presents drives' purification positively, especially insofar as it can involve intensification. And he often presents lightness or elevation positively, while remaining critical of a certain kind of otherworldly loftiness. Relatedly, as I will now argue, Nietzsche's appeals to the ethereality or airiness of "spirit" as opposed to "nature" are quite mixed in tone—because he does not favor "higher culture" over unrefined "natural passion," or vice versa, generally speaking.

7.4. On Nietzsche's view, the common belief that more "imaginative and spiritual" ways of expressing drives are *higher* is unduly moralistic—even though Nietzsche himself often praises apparently "refined" forms of artistic and intellectual expression. This is not a contradiction on his part, however, insofar as he also praises more "savage" expressions of basic drives. In short, Nietzsche values basic drives' powerful expression in one way or another more than he prefers either that they be sublimated into "culture" or given primal outlet as crude "animal impulse."

Here we may first recall Nietzsche's claim in *GM* II.7 that "joy in cruelty" has not really died out, but rather just been "translated" into "imaginative and spiritual" forms like "tragic pity." Notably, Nietzsche does not advocate or recommend that "joy in cruelty" be thus sublimated. He does not criticize the earlier age in which men were "were unwilling to refrain from *making* suffer and saw in it an enchantment of the first order, a genuine seduction *to* life." Nor does he glorify this earlier age above that of sublimated tragic pity. He simply claims that they both express the same "joy in cruelty"—which evidently allows that they may do so to the same extent, and with equal value.²⁸⁰

This interpretation of *GM* II.7 can be reinforced by examining another similar passage:

In late ages that may be proud of their humanity, so much fear remains, so much *superstitious* fear of the 'savage cruel beast' [*wilden grausamen Thiere*] whose conquest is the very pride of these more humane ages, that even

²⁸⁰Insofar as "cruelty" remains the basic underlying aim of both "sublimated" tragic pity and "unsublimated" drives to "make suffer," John Richardson is right to insist that "ends are modified, not replaced" in these sorts of processes of Nietzschean sublimation (*Nietzsche's System*, 25n20). Thus the "basic element [*Grundelement*]" that is "dispersed [*verflüchtigt*]" and so "reveals itself only under the most painstaking observation" in a given process of "sublimation" (*HH* I.1) might well be a drive to cruelty, rather than a fully generic will to power or drive to self-overcoming. However, my basic account is also compatible with the view that a generic will to power or drive to self-overcoming is the ultimate *Grundelement* of all "sublimation" of drives into the "imaginative and spiritual" domain.

palpable truths remain unspoken for centuries, as if by some agreement, because they look as if they might reanimate that savage beast one has finally ‘mortified’ [*abgetödteten*]. . . . We should reconsider cruelty and open our eyes. We should at long last learn impatience lest such immodest fat errors keep on strutting about virtuously and saucily, as have been fostered about tragedy, for example, by philosophers both ancient and modern. Almost everything we call ‘higher culture’ [*höhere Cultur*] is based on the spiritualization of *cruelty*, on its becoming more profound [*der Vergeistigung und Vertiefung der Grausamkeit*]: this is my proposition. That ‘savage animal’ [*wilde Thier*] has not really been ‘mortified’; it lives and flourishes, it has merely become—divine [*vergöttlicht*].

What constitutes the painful voluptuousness of tragedy is cruelty; what seems agreeable in so-called tragic pity [*die schmerzliche Wollust der Tragödie*], and at bottom in everything sublime, up to the highest and most delicate shudders of metaphysics, receives its sweetness solely from the admixture of cruelty. . . . [E]ven the seeker after knowledge forces his spirit to recognize things against the inclination of the spirit, and often enough also against the wishes of his heart . . . and thus acts as an artist and transfigured of cruelty. (*BGE 229*)

Nietzsche does not say that he prefers “higher culture” or the “divine” version of the “savage animal.” Rather, his basic point seems to be that the “savage animal” and “higher culture” alike express the same underlying drive to cruelty.

Walter Kaufmann is thus wrong to claim that Nietzsche exalts “sublimated” states of self-control above “unsublimated animal passion.”²⁸¹ Nietzsche has no problem with “unsublimated animal passion.” He does not glorify it, insofar as he also values certain forms of “higher culture.” But he also does not claim that it is worse than “higher culture,” generally speaking. And he explicitly criticizes “superstitious fear” of the “savage cruel beast.” Here one might also note Nietzsche’s description of the Dionysian as one of two fundamental art-impulses, even though it manifests as a drive towards ecstatic identification with “titanic” and “barbaric” forces of nature (*BT 4*) that are often overtly “savage.” Nietzsche’s Dionysus enjoys all “productive and destructive force,” evidently without concern for its moral quality (*WP 1049 [1885–1886]*).²⁸²

Luke Phillips likewise observes that Nietzsche “clearly did admire and praise [ruthless and violent men like Cesare Borgia and Napoleon] and hold them in far higher esteem than he did innocent, merely moral, herd-like men who lived blameless lives.”²⁸³ Indeed, Kaufmann

281Kaufmann 1974, 225.

282See also *WP 1050[1888]*.

283Phillips 2015, 359. See also Phillips 2015, 358–60; Glenn 2001; and Dombowsky 2004. Cf. Foot 1994.

himself concedes this point, citing *BGE* 197: “Nietzsche found it ridiculous to consider a Cesare Borgia unhealthy in contrast to an emasculated man who is alleged to be healthy.”²⁸⁴ But again, Kaufmann thinks that Borgia would be better if he achieved “sublimation”: “A man with strong impulses might be evil because he had not yet learned to sublimate his impulses, but if he should ever acquire self-control, he might achieve greatness.”²⁸⁵ Phillips is more skeptical that Nietzsche envisions any moralized form of self-control as an ethical ideal. Here I agree, contra Kaufmann.

But Phillips is wrong to claim that Nietzsche “recommends sublimation”—which Phillips takes to essentially involve “translation (or transformation) of the drive’s objects into the imaginative and mental”²⁸⁶—and the “refined immorality” that it produces.²⁸⁷ Here he cites a passage in *BGE* 23, the relevant portion of which is Nietzsche’s claim that “even a doctrine of the reciprocal dependence of the ‘good’ and the ‘wicked’ drives, causes (as refined immorality [*feinere Immoralität*]) distress and aversion in a still hale and hearty conscience—still more so, a doctrine of the derivation of all good impulses from wicked ones” (*BGE* 23). But this is simply a claim about the psychological impact of his own “doctrine of the derivation of all good impulses from wicked ones”—let alone the weaker “doctrine of the reciprocal dependence of the ‘good’ and ‘wicked’ drives” that he actually explicitly calls ‘refined immorality.’ Nietzsche does not claim here that his own ethical doctrine is better than “unrefined” forms of will to power. He at most observes that his own philosophical doctrine *is* “refined.” And he clearly believes that his own doctrine is good. But he never claims that it is better than more “unrefined” expressions of similarly-powerful drives. More broadly, Nietzsche certainly seems to favor Goethe over Borgia. And this is clearly not because Borgia is more “evil.” But it is also not at all clear that it is because Goethe is more “refined.” Phillips hence fails to see how radical Nietzsche’s view truly is. Nietzsche does not “recommend” that drives augment their power specifically via redirection into the “imaginative and spiritual” domain. He simply recommends will to power.

Nietzsche accepts that drives’ translation into the “imaginative and spiritual” domain can be valuable, but he also clearly believes that it can be degenerate. For instance, consider his critical assessment of (all but “genuine”)²⁸⁸ philosophers as “advocates who resent the name”:

284Kaufmann 1974, 224.

285Kaufmann 1974, 224.

286Phillips 2015, 351.

287Phillips 2015, 360.

288For “*Genuine philosophers*,” Nietzsche claims, “knowing’ is *creating* . . . [and] will to truth is—*will to power*” (*BGE* 211).

They all pose as if they had discovered and reached their real opinions through the self-development of a cold, pure, divinely unconcerned dialectic . . . while at bottom it is an assumption, a hunch, indeed a kind of ‘inspiration’—most often a desire of the heart that has been filtered and made abstract [*ein abstrakt gemachter und durchgeseibter Herzenswunsch*]*—that they defend with reasons they have sought after the fact. They are all advocates who resent that name, and for the most part even wily spokesmen for their prejudices which they baptize ‘truths’—and very far from having the courage of the conscience that admits this, precisely this, to itself; very far from having the good taste of the courage which also lets this be known, whether to warn an enemy or friend, or, from exuberance, to mock itself. (BGE 5)*²⁸⁹

Nietzsche here explicitly suggests that philosophical theories are often rooted in “a desire of the heart that has been filtered and made abstract”—which strongly evokes his aforementioned appeal to the “sublimation” of primal “joy in cruelty” into “imaginative and spiritual” modes of expression. But he also claims that this sublimation into philosophical “dialectic” is often cowardly, hence presumably often worse than unsublimated forms of unapologetic “advocacy.”²⁹⁰

Many other philosophers and artists take the transformation of “crude” nature into more “imaginative and spiritual” phenomena to be inherently valuable, of course, which can promote a corresponding misinterpretation of Nietzsche. This is clearly Milton’s view, for instance. And a similar sentiment appears in Goethe’s autobiography, *Dichtung und Wahrheit*—which Nietzsche does seem to have read.²⁹¹ (More generally, Goethe certainly had a strong positive influence on him.²⁹²) Goethe deploys a related metaphor, using hot air balloons instead of chemical vapors:

True poetry announces itself thus, that, as a worldly gospel, it can by internal cheerfulness and external comfort free us from the earthly burdens which press upon us. Like an air-balloon, it lifts us, together with the ballast which is attached to us, into higher regions and lets the confused labyrinths of the earth lie developed

²⁸⁹See also *GS* 352, where Nietzsche criticizes moralists for trying to make the “profound mediocrity, timidity, and boredom” of the “herd animal” seem “nobler” and “more important” by presenting it in a *spiritualized* mode.

²⁹⁰Compare Assoun’s claim that “from *Daybreak* to *On the Genealogy of Morals*, Nietzsche never does anything else but try to outwit the process of sublimation [construed as converting the ‘*Grundelement*’ of ‘instinct as self-love’ into a ‘mask (of altruism)’]” (Assoun 2000, 161–62). Assoun’s account is limited insofar as he ignores various *other* kinds of “vaporization” of drives, including some by “translation” into the “imaginative and spiritual” domain, which Nietzsche clearly *endorses* strongly, and also refers to as “sublimation.”

²⁹¹Brobjer 2008, 78.

²⁹²See, e.g. Kaufmann 1974, 154–56, 167–70; Fairley 1934; Martin 2013; Bishop and Stephenson 2005; Del Caro 2013.

before us as in a bird's-eye view. The most lively, as well as the most serious works, have the same aim of moderating both pleasure and pain by a felicitous intellectual form.²⁹³

Here Goethe links “true poetry” to “intellectual form” that “lifts” us up from “earth” and its “burdens which press upon us.” Two features of his view are especially noteworthy, in the present context.

First, Goethe contrasts the domain of “intellectual form” against a lower “earthly” order, which suggests an elevation of the spiritual-intellectual above the merely *natural*. And, indeed, he elsewhere claims that “human feelings and events” could not be brought upon the stage “in original naturalness [*ursprünglicher Natürlichkeit*],” but rather “must be wrought, prepared, sublimated [*verarbeitet, zubereitet, sublimiert*].”²⁹⁴ Thus Goethe contrasts “sublimated” human feeling, implicitly tied to “true poetry” and “intellectual form,” against states of crude “naturalness.” Notably, Emerson expresses a similar idea using a chemical analogy in “Nature” (1836), when he characterizes art as “nature passed through the alembic of man.”²⁹⁵ In particular, he brings out the aforementioned connotations of purification or refinement, claiming, “The poet, the painter, the sculptor, the musician, the architect, seek each to concentrate this radiance of the world on one point.”²⁹⁶ Likewise, in a later essay on “Art,” Emerson notes how good painters omit “the details, the prose of nature” so as to “give us only the spirit and splendor,” and even describes man himself as “but a finer and compacter landscape than the horizon figures.”²⁹⁷

Nietzsche holds certain related views, but he nevertheless does not view “higher culture” as generally superior to “savage” or “wild” states. In the case of “*Genuine philosophers*,” for instance, Nietzsche insists that “‘knowing’ is *creating* . . . [and] will to truth is—*will to power*” (*BGE* 211). In the case of “genuine” philosophers, that is, the impulse “to assimilate the new to the old, to simplify the manifold, and to overlook or repulse whatever is totally contradictory [*das gänzlich Widersprechende*]” is not an unconditional or selfless pursuit of truth. Rather, it expresses the “spirit’s power to appropriate the foreign” precisely by “retouching and falsifying

293Goethe 1867, 505. See also Goebel 2012, 6.

294Grimm and Grimm 1971. I follow Walter Kaufmann’s translation (Kaufmann 1974, 219). Note that Schopenhauer likewise ties ‘sublimation’ to intellectual forms, describing representations (*Vorstellungen*) being “sublimated into abstract concepts [*die zu abstracten begriffen sublimierten*]” (Grimm and Grimm 1971, art. “*Sublimierung*”).

295Emerson 1983, 18–19. Regarding the depth of Emerson’s impact on Nietzsche, see, e.g. Brobjer 2008, 23.

296Emerson 1983, 18.

297Emerson 1983, 431.

the whole to suit itself,” its drive to “growth, in a word—or, more precisely, the *feeling* of growth, the feeling of increased power” (*BGE* 230). Thus genuine philosophers’ creative appropriation of reality in systematically “falsifying” bodies of theory is for Nietzsche a mode of artistic representation, which “simplifies the manifold” and “overlooks” or “repulses” any “contradictory” features of the world, as a kind of purification or refinement of “un-falsified” nature. And here just as elsewhere, presumably, “We possess *art* lest we *perish of the truth*” (*WP* 822).²⁹⁸ Indeed, Nietzsche strikes a similar chord in reflecting on art in another unpublished note from 1888, where he characterizes “The ugly [*Das Häßliche*]” as “the contradiction to art [*der Widerspruch zur Kunst*]” and “that which is excluded from art [*das, was ausgeschlossen wird von der Kunst*]” (*WP* 809). Like Emerson, then, Nietzsche does seem to view genuine art (and artistic philosophy or science) as something like “nature passed through the alembic of man.”

But Nietzsche does not view this kind of artistic “distillation” into truly higher forms of “imaginative and spiritual” culture as being better than “savage” or “wild” nature, *per se*, because he allows that there are also higher forms of the purely “savage” or “wild.” For instance, in *The Birth of Tragedy*, Nietzsche speaks approvingly of the origin of the tragic chorus in cultic Dionysus-worshippers raising themselves into a state of ritual frenzy through collective song and dance. In the resultant state of ecstasy, the “chorus of primitive tragedy” found themselves “liv[ing] in a religiously acknowledged reality under the sanction of myth and cult,” experiencing the world as transformed into a “fictitious *natural state*” and themselves as likewise “magical[ly] transform[ed]” into a chorus of “satyrs” or “fictitious natural being[s]” (*BT* 7) embodying man’s “highest and most intense emotions” and “Nature, as yet unchanged by knowledge, with the bolts of culture still unbroken” (*BT* 8). Of course, Nietzsche values many forms of “higher culture,” including later Attic tragedy insofar as it involves a complex fusion of “Dionysian” and “Apollonian” tendencies. Nevertheless, he also clearly values certain forms of “savage” or “wild” nature. And it is far from clear that “high cultural” forms are his favorite expressions of our basic drives. In *The Birth of Tragedy*, Nietzsche does arguably privilege tragedy, viewed as the “objectification of a Dionysian state” into its “Apollonian complement” (*BT* 8), above either purely Dionysian or Apollonian modes of activity. But Nietzsche later criticized his own youthful romanticism in this book, and in particular his call for an “art of metaphysical comfort” (*BT* 18). The older Nietzsche associates this drive to “metaphysical

²⁹⁸There is no mention of science in this context, so I am quoting quite freely.

comfort” with romanticism and Christianity, and instead recommends learning “the art of *this-worldly* comfort first” (*BT* “Attempt at a Self-Criticism,” 7). Part of what is at stake here, evidently, is whether the “primordial contradiction and primordial pain in the heart of the primal unity” that Nietzsche associates with Dionysian insight into reality (*BT* 6) needs to be “redeemed” through “falsifying” Apollonian dream-images. Nietzsche’s mature view is that it does not: pure Dionysian frenzy or “destruction of individuality” is a fully valuable mode of will to power in its own right—albeit not the only one.

Translation into the more ethereal, “imaginative and spiritual” domain can involve valuable forms of purification and intensification, on Nietzsche’s view. But “higher culture” can also be polluted by “impurities,” and be attenuated or unduly otherworldly. Nietzsche speaks of sublimation approvingly when he uses the term *Sublimierung* to refer to intensifying purification. But he does not map valuable processes of “purification” directly onto the processes of translation into the “imaginative and spiritual” domain which he also refers to using the term ‘sublimation.’ These are two distinct applications of the same basic chemical analogy—even though in some cases Nietzsche does view development from “savage” to “high cultural” expressions of drives as a source of intensifying purification, à la Emerson.

Finally, Goethe specifically praises the intellectual “elevation” afforded by “true poetry” as a way of “moderating both pleasure and pain.” This evokes Freud’s later account of sublimation:

Another technique for fending off suffering [*Leidabwehr*] is the employment of the displacements of libido [*Libidoverschiebungen*] which our mental apparatus permits of and through which its function gains so much in flexibility. The task here is that of shifting the instinctual aims [*Triebziele*] in such a way that they cannot come up against frustration from the external world. In this, sublimation of the instincts [*Sublimierung der Triebe*] lends its assistance. One gains the most if one can sufficiently heighten the yield of pleasure [*Lustgewinn*] from the sources of psychical and intellectual [*psychischer und intellektueller*] work. When that is so, fate [*Das Schicksal*] can do little against one. A satisfaction of this kind, such as an artist’s joy in creating, in giving his phantasies body, or a scientist’s in solving problems or discovering truths, has a special quality which we shall certainly one day be able to characterize in metapsychological terms. At present we can only say figuratively that such satisfactions seem ‘finer and higher’ [*feiner und höher*]. But their intensity is mild [*gedämpft*] as compared with that derived from the satiation of crude and primary instinctual impulses [*grober, primärer Triebregungen*]; it does not convulse our physical

being [*sie erschüttern nicht unsere Leiblichkeit*].²⁹⁹

For Freud as for Goethe, sublimation of natural drives into intellectual or artistic-creative modes of expression functions to protect us from excessive pain, and is valuable in this respect. For both thinkers, moreover, sublimation of natural feeling or impulse leads to a moderation of pleasure. Goethe evidently views this moderating effect as positive. Freud's characterization is more ambiguous, but also seems broadly positive: he apparently thinks that it is appropriate or healthy to avoid the "jarring" impact of "crude and primary impulses." Here note that Freud's only direct criticisms of sublimation, in this broader passage, are that it is "accessible to only a few people," and that even to them it "cannot give complete protection from suffering [*vollkommenen Leidenschutzes*]."³⁰⁰

Goethe's and Freud's approving emphasis on the moderating effect of natural feelings' or impulses' translation into the "imaginative and spiritual" domain is almost directly opposed to Nietzsche's view, insofar as he takes this particular kind of sublimation to be praiseworthy. Thus, Nietzsche writes in a note from 1888 that "the effect of works of art is to *excite the state that creates art*—intoxication [*Rausch*; alternately, 'frenzy']" (*WP* 821).³⁰¹ And, as he clarifies in another note from 1888, this "condition of pleasure called intoxication" is "precisely an exalted feeling of *power*" (*WP* 800). On Nietzsche's view, Apollonian and Dionysian art forms therefore both elicit a state of "intoxication" (*TI* "Skirmishes," 10). Although he does associate the Apollonian with "extreme calm," he qualifies that Apollonian *Rausch* still involves "sexuality and voluptuousness," and even clarifies that this "extreme calm" is "more strictly" to be viewed as "the retardation of the feelings of time and space" (*WP* 799). Thus insofar as Nietzsche takes some processes of translation into the "imaginative and spiritual" domain to be valuable, it is clearly not because he thinks that they involve the moderation of our drives. Quite the opposite: he claims that "All art works tonically, increases strength, inflames desire (i.e. the feeling of strength), excites all the more subtle recollections of intoxication" (*WP* 809). Nor does this kind of artistic intensification of our drives involve moderation of pain or pleasure, on Nietzsche's view. Here recall his claim that the translation of our basic "joy in cruelty" into the "imaginative

299Freud 1962, 26–27.

300Freud 1962, 27.

301Nietzsche sometimes uses *Rausch* in a narrower sense. In *The Birth of Tragedy*, for example, he maps the distinction between Apollonian and Dionysian drives onto "dreams and intoxication [*des Traumes und des Rausches*]" (*BT* 1).

and spiritual” domain is directly related to the fact that “pain today hurts more” (*GM* II.7). Likewise, in *Human, All Too Human* he longs for a “utopia” or a “better ordering of society” that leads “step by step up to him who is most sensitive to the most highly sublimated species of suffering [*die höchsten sublimirtesten Gattungen des Leidens*] and who therefore suffers even when life is alleviated to the greatest degree possible” (*HH* I.462).

Hence, to the extent that Nietzsche does value some (but not all) processes of translation into the “imaginative and spiritual” domain, it is precisely insofar as they intensify our basic drives, as well as associated forms of pain or joy. Correspondingly, where this form of sublimation has the opposite effect—as in lesser philosophers’ pretense to “cold, pure, divinely unconcerned dialectic” or the “sublimations and small doses” of vanity in our “late and very moderated state of society”—Nietzsche evidently sees it as weak, unhealthy, and to be criticized.

Could it not be that Nietzsche most highly esteems “imaginative and spiritual” modes of outlet for powerful drives, or “high cultural” expressions of strength, vitality etc.—even if he values “savage” expressions of power above “spiritual” expressions of weakness or sickness?³⁰² In response to this question, which merits extended examination in its own right, I will here simply conclude with a few fairly modest interpretive points. First, the hypothesis that a preference for “spiritual” over “natural” forms of activity is a *ceteris paribus* consideration for Nietzsche—for example, a “tiebreaking” consideration to be deployed only when given “spiritual” and “natural” forms of activity reflect the same degree of underlying strength, power, health etc.—is consistent with my basic claim that Nietzsche is fundamentally indifferent to the distinction between “nature” and “culture.” The intuitive “nature vs. culture” distinction is at most a second-order concern for Nietzsche, subordinate to his more basic evaluative emphasis on drives’ strength or the continual growth of their power.

Second, however, the textual case for even this limited “tiebreaker” account is hardly conclusive. For instance, as I have argued, Nietzsche uses *Sublimierung* to refer to a range of psychological analogues of chemical vaporization, not all of which concern drives’ translation to the imaginative and spiritual domain. Hence, while Nietzsche’s positive uses of *Sublimierung* may appear to be clear evidence that he has a *ceteris paribus* preference for imaginative and spiritual outlets of drives, in fact they often are not. Moreover, while he evidently highly values many “cultural” phenomena, it is also clear that Nietzsche highly values certain purely “natural”

³⁰²I am grateful to one anonymous referee at the *Journal of the History of Philosophy* for pressing me on this point, and to another for encouraging me to offer further concrete examples of Nietzsche criticizing sublimation.

things, including “titanic” and “barbaric” forces (*BT* 4).³⁰³ Relatedly, Nietzsche’s narrowly ethical ideal could involve powerful drives’ imaginative and spiritual outlet even if his more basic standard of will to power does not.

In this light, finally, one might distinguish between two senses of ‘culture,’ on Nietzsche’s behalf. On the one hand, culture can be viewed through a radically naturalistic lens, as including even manifestations of the “titanic” and “barbaric” natural forces which Nietzsche links to the creative-destructive activity of the “entirely reckless and amoral artist-god” or “artist’s meaning” that he takes himself to have illuminated in *The Birth of Tragedy* (*BT* “Attempt at a Self-Criticism,” 5). On the other hand, however, culture (and art) can be taken to be directly opposed to such “merely natural” phenomena. Nietzsche clearly values culture in the former, more naturalistic sense very highly. But culture in this sense evidently need not involve drives’ translation to the “imaginative and spiritual” domain, at least in any way that always “elevates” them up from “savage” and into “refined” modes of expression.

7.5. Existing accounts of Nietzschean sublimation tend to stress only certain of his uses of the term *Sublimierung*, and therefore impute a more idiosyncratic concept to him than is truly warranted. Indeed, some commentators offer little or no direct textual evidence in support of their interpretations.³⁰⁴ Although I have not discussed all of Nietzsche’s uses of the term, I do take myself to have presented and explicated a wider range of cases than other commentators. And I have done so using a flexible interpretive framework that plausibly extends to most if not all other Nietzschean uses of *Sublimierung* and its cognates.

The central concept underlying most if not all Nietzschean uses of *Sublimierung* and its cognates is just a broad psychological analogue of the traditional (al)chemical concept: the “vaporization” of drives. Nietzsche emphasizes different features or connotations of chemical sublimation in different rhetorical contexts, as he extends the notion to the psychological domain by analogy. Hence, sometimes Nietzschean sublimation yields ennobling elevation, or purity in a positive sense—the intensified “sublimate” of an unrefined original sample. But Nietzschean sublimation can also yield drives that are attenuated or otherworldly, in a pejorative sense.

³⁰³Consider also Nietzsche’s praise of the world as a “sea of forces flowing and rushing together” (*WP* 1067). It is not clear, in *WP* 1067, that he takes human creativity to be the “highest” such force. For similar kinds of holism with strongly naturalistic undertones, see, e.g. *TI* “What the Germans Lack,” 49; *WP* 417.

³⁰⁴E.g. regarding Gemes’s account, see note 251.

If this were merely a terminological issue, it would not be terribly important. But it is not. Terminological confusion on this point can easily promote conceptual confusion, and obscures important Nietzschean ideas. In particular, one might be led to seriously misunderstand the evaluative connotations of Nietzsche's uses of 'sublimation' and its cognates, if one fails to appreciate that he uses the term in several distinct ways, all stemming from a basic psychological analogy to the traditional sense of chemical vaporization. More specifically still, one might be led to seriously misinterpret Nietzsche's evaluation of drives' "sublimation" into "imaginative and spiritual" modes of expression, if one conflates his different uses of the term.

Some other commentators have recognized that Nietzsche is skeptical of at least certain kinds of "sublimation."³⁰⁵ And some have indicated the traditional chemical sense of the term in passing.³⁰⁶ But none have synthesized these lines of analysis by relating a wide array of both negative and positive Nietzschean uses of *Sublimierung* to his multivalent application of the basic chemical analogy, as I have tried to do above—with attention to the chemical notion's wider role in modern intellectual history. And none have suggested that the connotative complexity of the chemical notion may help to explain why it is easy to overstate how much or how clearly Nietzsche values drives' redirection into the "imaginative and spiritual" domain.

Indeed, Nietzsche's often-neglected critical remarks about sublimation help to reveal that he does not hold sophisticated forms of artistic or intellectual creativity above "coarser" expressions of our basic drives, per se. Rather, he is often precisely concerned to show how drives' "vaporization" into the imaginative and spiritual domain can run counter to higher forms of will to power or self-overcoming. Basic drives *can* manifest in their full force as culture, or as refinement into culture. But Nietzsche ultimately values basic drives' powerful expression, without preferring either that this occur in the mode of "higher culture" or as "savage" natural impulse.

305E.g. Assoun 2000, 161–62 (see note 290); and Gasser 1997, 361–64.

306E.g. Kaufmann, Phillips, and Gasser (see note 271); also Blättler and Assoun (see note 279).

CHAPTER III
Force as the Ground of Poetic Objectivity

8. Force as Drive:

On Will, Passion, and 'Aesthetic' Freedom from Desire in Nietzsche, Schiller, and Kant

8.1 . The connection between power and willful activity, for Nietzsche, brings his metaphysical vision of will to power into direct contact with idealistic theories of practical rationality. For the idealist, as such, willing is striving to satisfy desires. In the modern philosophical tradition, desires are in turn often divided into sensuous desires and rational desires, corresponding to the broader metaphysical opposition between body and mind—or, most fundamentally, between particularity and universality. Influenced in part by mediating figures like Schiller (despite Schiller's own moralistic and idealistic tendencies), Nietzsche breaks free from this traditional association between willful activity and desire-satisfaction. Willing is thus re-conceived as the active expression of internal power or abundance, as opposed to desire-satisfaction construed as an expression of external need or lack. This in turn corresponds to a phenomenological distinction, which I elaborate below, between feelings of true *passion* and those of mere *desire*.

Nietzsche's account of willful activity can thus be further illuminated by analyzing its relationship to earlier notions of will in Kantian and post-Kantian idealisms. To this end, I will examine Nietzsche's criticism of Kantian aesthetic 'disinterestedness', and its connection to Schiller. This sudden emphasis on aesthetic theory may seem odd. But it is not at all out of place, as will quickly become clear.

The basic point of the following analysis is to establish the following: Nietzsche's notion of willful activity bears strong structural similarities to Schiller's proto-Romantic notion of impassioned aesthetic 'play', which in turn directly reflects his influence by Kant's account of 'freedom from desire' in experiences of beautiful form. Indeed, the following analysis suggests

that Schiller is plausibly an important historical influence on Nietzsche, in this regard, both directly and indirectly. Nietzsche's notion of *power* thus emerges conceptually (and historically) from idealistic notions of *will*, through a process of systematic *naturalization*. The result, again, is Nietzsche's quasi-Romantic notion of will to power as amoral and all-pervasive vital force.

I wish to appropriate many of these Nietzschean conclusions for my own metaphysical and ontological account of *force*. Hence, the present analysis further clarifies my notion of force, as well as its broader intellectual historical context. Ultimately, I will then move further beyond (what I argue is) Nietzsche's view, by drawing several basic non-Nietzschean distinctions in the domain of aesthetic experience. Salient among these will be a distinction between *passion* and *vitality*, or the impassioned feeling of *life*, in particular. Namely, I claim that vitality is a *real structure* comprising *agonistically-interacting passions*. This feeling of life or vitality is elicited, in the aesthetic domain, by *beautiful form* as such. In turn, I claim that the ground of beauty is *real agonistic interaction*, which appears to us as holistic structures comprising well-matched *sensory forces*. To that end, however, it is best now to focus on Nietzsche, Schiller, and Kant.

8.2. Again, Nietzsche is highly critical of Kant's account of aesthetic 'disinterestedness'. But Nietzsche's criticism of Kantian aesthetic disinterestedness reflects his own commitment to claims that closely resemble certain Kantian aesthetic principles, specifically as reinterpreted by Schiller. This positive structural continuity between Kantian aesthetic theory and Nietzsche's criticism thereof, mediated by Schiller, has not been noted in the literature on the relation of Schiller's aesthetic theory to Nietzsche's.³⁰⁷ However, the fact that there was such a surprising line of structural continuity indicates the need to distinguish between two currents of Romantic aesthetic theory invoking two kinds of disinterestedness: an *idealistic* current, which emphasizes the interplay of sensuous and rational faculties; and a *dynamistic* current, which asserts the

307 For previous analyses of Nietzsche's relationship to Schiller, see Rehder 1976; Bennett 1979; Silk and Stern 1981 (p. 301-304); Del Caro 1989; Martin 1995 and 1996; Prange 2006; Kalar 2008; and Katsafanas 2011. For Nietzsche's relationship to broader traditions of Classicism, see Del Caro 1980; Bishop and Stephenson 2005. Silk and Stern (1981, 301) discuss disinterestedness, but simply suggest that Nietzsche "half undo[es]" the "nexus between art and disinterestedness" that one finds in Kant and Schiller. In no way do they claim that Nietzsche's view is positively influenced by Schiller's account of disinterestedness, as I argue.

For example, Came (2009) argues that Nietzsche's aesthetic theory is positively influenced by *Schopenhauer's* conception of disinterestedness. Our accounts are largely compatible. But Came supposes that "the Nietzschean aesthetic entails a complete destruction of the subject." This is only plausible with respect to Dionysian (not Apollonian) 'frenzy' [*Rausch*], however. Moreover, Came observes that "unlike Schopenhauer's conception of disinterestedness, Nietzsche's notion of *Rausch* does not exclude the processes of desire." But he does not *explain* this difference, whereas I do, by appeal to Schiller's notion of disinterest. This example indicates the kind of advantages that my account has vis-à-vis salient alternatives.

aesthetic character of all genuine passion and creative power, even in the mode of animalistic vitality or physical force. This illuminates post-Kantian aesthetics. And it also indicates a plausible line of influence, both direct and indirect, by Schiller on Nietzsche, which clarifies a crucial aspect of the intellectual historical genealogy underlying 'will to power'.

For Kant, the experience of beauty is 'disinterested' in that it involves a kind of pleasure which is neither based in, nor directly gives rise to, any desires. Hence, he takes pleasure in the beautiful to be importantly different from 'interested' satisfaction in both the merely 'agreeable' objects of sensuous desire and the instrumentally or finally 'good' objects of rational desire. In turn, freedom from desire may be intuitively associated with freedom from the passions. Thus one might expect that aesthetic theorists directly inspired by Kant's *Critique of Judgment* (1790) would characterize the experience of beauty as thoroughly dispassionate.

But the actual uptake of Kantian aesthetic theory was from the outset more complex. Already in Schiller's *Letters on the Aesthetic Education of Man* (1795), which he acknowledges are based “for the most part” in Kantian principles,³⁰⁸ one finds what appears to be a strange ambivalence towards the passions. On the one hand, Schiller insists that an “impassioned fine art” is a “contradiction in terms,” because “the inevitable effect of the Beautiful is freedom from passions [*Leidenschaften*].”³⁰⁹ On the other hand, though, he also argues that aesthetic freedom originates in a kind of “physical play” [*physische Spiel*] manifest in phenomena like 'joyous movement' and 'high-spirited roaring' which seem paradigmatically impassioned:

Certainly Nature has given even to the creatures without reason more than the bare necessities of life, and cast a gleam of freedom over the darkness of animal existence. When the lion is not gnawed by hunger and no beast of prey is challenging him to battle, his idle energy creates for itself an object; he fills the echoing desert with his high-spirited roaring, and his exuberant power [*üppige Kraft*] enjoys itself in purposeless display [*zwecklosem Aufwand*]. The insect swarms with joyous life in the sunbeam; and it is assuredly not the cry of desire [*der Begierde*] which we hear in the melodious warbling of the song-bird. Undeniably there is freedom in these movements, but not freedom from need [*Bedürfnis*] in general, simply from a definite external need. The animal *works* when deprivation [*ein Mangel*] is the mainspring of its activity, and it *plays* when the fullness of its strength is this mainspring, when superabundant life [*das überflüssige Leben*] is its own stimulus to activity.³¹⁰

308Schiller 1795/2014, 19.

309Schiller 1795/2014, 84.

310Schiller 1795/2014, 105.

Admittedly, in one sense there is simply no tension here. Schiller thinks that unstructured 'physical play' or animalistic 'exuberant power' falls short of *aesthetic* play until and insofar as it takes on form—specifically, rational form. The resultant 'reciprocal action' of sensuous and rational impulses just is what he means by 'freedom from passions.' And this is related, at least, to Kant's own theory of disinterested pleasure in the 'free play' of imagination and understanding.

However, I argue below that this is an oversimplification. Schiller's account of disinterestedness in fact involves a simultaneous appeal to two different distinctions: first, the aforementioned distinction between one-sided determination by either one's 'sense impulse' [*Stofftrieb*] or (rational) 'form impulse' [*Formtrieb*], and states of aesthetic play in which these two impulses are “at once mutually subordinated and coordinated”;³¹¹ second, the distinction between *work* and *play*, or activity rooted in 'desire', 'need', 'deprivation', etc., as opposed to that which expresses 'exuberant power' or 'superabundant life'. Schiller takes the experience of beauty to be disinterested in two distinct ways: insofar as sense and reason both function in it as loci of impassioned *play*, not desire-driven work; and insofar as it involves *aesthetic* play, not just physical play. Notably, no previous commentators seem to have observed this dual account.³¹²

Schiller's distinction between desire-driven 'work' and impassioned 'play' has strong echoes in Nietzsche's aesthetic theory (and broader philosophy). Below I examine these deep structural continuities between Kant and Nietzsche, mediated by Schiller, with particular attention to the way in which Schiller's generic notion of play—which is influenced by Kant's claim that aesthetic pleasure is orthogonal to desire-satisfaction—becomes decoupled from his (further) Kantian view that *aesthetic* play essentially involves the interaction of reason and sense. The result, I suggest, is a self-standing opposition between *desires* and *passions*, with the latter understood as feelings of power lacking any necessary connection to reason or objective judgment. This motivates a recognizably Romantic vision of aesthetic disinterestedness, as freedom from desire realized in a state of creative determination by passion.

8.3. To understand these lines of conceptual connection and their interrelation, we must first review some basic features of Kant's and Schiller's accounts. Kant's appeal to disinterested

311Schiller 1795/2014, 54 n. 8.

312Guyer (1993b) examines 'Kant and Schiller on disinterestedness,' for instance, but discusses only the harmony of sensuous and rational drives, not the contrast between desire-driven activity and power-driven activity. More typically, Wilm (1906), Grossman (1968), and Beiser (2005) mention disinterestedness only in passing as they examine Schiller's views, without attempting to analyze the notion on his behalf.

pleasure in beauty reflects his intellectual debt to 18th-century British aesthetic theorists.³¹³ For our purposes, however, it will prove more helpful to consider his account on its own terms. By 'interest', then, Kant means “[t]he satisfaction that we combine with the representation of the existence of an object.”³¹⁴ In turn, according to Kant, interested satisfaction is always grounded in, or else itself grounds, a *desire*.³¹⁵ In cases where a desire is grounded in interested satisfaction, he refers to the object of this desire as merely *agreeable*. Intuitively, the agreeable is that which we want more of—“it excites a desire for objects of the same sort”—simply because it “gratifies” us in a bodily way.³¹⁶ Kant presents as paradigmatic agreeable things pleasant 'sensations', e.g. pleasant impressions of objects' *color* or *tone*³¹⁷—hence presumably also their *taste*, *smell*, or *tactile quality*. As opposed to the *agreeable*, Kant claims that our satisfaction in representing the existence of something *good* is grounded in our rational desire for it.³¹⁸ Whether we take an object or action to be good in itself or merely a means to such an end,³¹⁹ that is, we take satisfaction in the representation of its existence, and in general do so independently of its capacity to provide us with immediate sensory gratification. Finally, Kant insists that the sensory 'matter' in our representations of beautiful objects cannot be the ground of disinterested pleasure, but at most interested pleasure in agreeable things. On Kant's view, we can take disinterested pleasure only in reflection upon the spatiotemporal “shape or play” of this sensory matter,³²⁰ i.e., aesthetic *form*. Kantian disinterested pleasure is thus the feeling of freedom from desire in open-ended reflection on beautiful aesthetic form: the 'free play'³²¹ or 'harmonious'³²² interaction of our imagination and understanding.

Following Kant, Schiller develops his notion of disinterestedness against the backdrop of a broader theory of human beings' “sensuous-rational nature,”³²³ with aesthetic experience mediating between sensory receptivity and rational spontaneity. Broadly as Kant describes 'free play' between imagination and understanding, Schiller identifies beauty as the object of a “play

313On 'disinterestedness' in 18th-century British aesthetics, see Stolnitz 1961a, 1961b; Berleant 1986; Guyer 1993a; and Rind 2002. For replies to Stolnitz, see also Dickie 1964, 1984. On Kant's relationship to this British context, see White 1973, Townsend 1987, and Guyer 1993b.

314*Kritik der Urteilskraft (KrU)* 5:204 (Kant 1790/2000, 90).

315*KrU* 5:208-9 (Kant 1790/2000, 94-5).

316*KrU* 5:207 (Kant 1790/2000, 92).

317*KrU* 5:224 (Kant 1790/2000, 108-9).

318*KrU* 5:207-209 (Kant 1790/2000, 92-4).

319*KrU* 5:226 (Kant 1790/2000, 111).

320*KrU* 5:225 (Kant 1790/2000, 110).

321*KrU* 5:217 (Kant 1790/2000, 103).

322*KrU* 5:258 (Kant 1790/2000, 142).

323Schiller 1795/2014, 50.

impulse” [*Spieltrieb*] in which both our “sense impulse” and our “form impulse” are combined.³²⁴ Beauty itself is thus “living shape,” where 'life' (“all material being and all that is immediately present in the senses”) is the object of the 'sense impulse', and 'shape' (“all formal qualities of things and all their relations to the intellectual faculties”) is the object of the 'form impulse'.³²⁵

In the experience of beauty we avoid both “overpowering sensuousness” and “overpowering rationality,”³²⁶ Schiller suggests, not through attenuation of either the form or sense impulse, but rather through their “mutual[] subordinat[ion] and coordinat[ion].”³²⁷ If the form impulse totally overpowers the sense impulse ('overpowering rationality'), then there results a lamentable “rigidity of principles” or the “egoism of our reason.”³²⁸ In this state, natural desires or passions are viewed simply as barriers to moral virtue, ethical principles are upheld only robotically, and empirical science becomes perverted by dogmatic refusal to revise general principles in light of contravening observations.³²⁹ Man thus becomes a “barbarian” whose “principles destroy his feelings.”³³⁰ On the other hand, if the sense impulse totally overpowers the form impulse ('overpowering sensuousness'), there results the mere “savage” whose “feelings rule his principles”:³³¹ a person who is driven entirely by particularistic desire and natural impulse without regard for universal moral duty or the value of pure theoretical knowledge.

But, Schiller continues, it is also ignoble for the form and sense impulses to be 'mutually subordinated and coordinated' simply by virtue of being equally weak. Moderation of the sense impulse by means of a “physical incapacity and a dullness of the perceptions” deserves “nothing but contempt,” as does moderation of the form impulse by means of an “intellectual incapacity and a feebleness of thought and will which would degrade humanity.”³³² Hence, the ideal condition of humanity is one of “reciprocal action between the two impulses, of such a kind that the operation of the one at the same time confirms and limits the operation of the other, and each one severally reaches its highest manifestation precisely through the activity of the other.”³³³ On

324Schiller 1795/2014, 59-60.

325Schiller 1795/2014, 60.

326Schiller 1795/2014, 55 n.9.

327Schiller 1795/2014, 54 note 8.

328Schiller 1795/2014, 56 note 9.

329Schiller 1795/2014, 56 n. 9.

330Schiller 1795/2014, 27.

331Schiller 1795/2014, 27.

332Schiller 1795/2014, 57.

333Schiller 1795/2014, 58.

Schiller's view, finally, this 'aesthetic condition' is the essential *human* condition: the “disposition which comprises in itself the wholeness of humanity,”³³⁴ wherein we are “masters in equal degree of our passive and our active powers.”³³⁵ Thus “Man plays only when he is in the full sense of the word a man, and *he is only wholly Man when he is playing.*”³³⁶ (Likewise, poetry is “nothing but *giving mankind its most complete possible expression.*”³³⁷)

Schiller's account of aesthetic disinterestedness is informed by this broadly Kantian notion of open-ended interplay between 'form' and 'sense':

It is neither charm, nor is it dignity, that speaks to us from the superb countenance of a Juno Ludovici;³³⁸ it is neither of them, because it is both at once. While the womanly god demands our veneration, the godlike woman kindles our love; but while we allow ourselves to melt in the celestial loveliness, the celestial self-sufficiency holds us back in awe.[...]Irresistibly seized and attracted by the one quality, and held at a distance by the other, we find ourselves at the same time in the condition of utter rest and extreme movement, and the result is that wonderful emotion for which reason has no conception and language no name.³³⁹

Here Schiller's appeals to 'charm', 'love', and 'attraction' evidently correspond to the Kantian claim that the objects of sensuous desire are *agreeable*, and his appeals to 'dignity', 'veneration', and 'awe' evidently correspond to the Kantian claim that the objects of rational desire are *good*. In Kantian terms, that is, Schiller seems to be claiming that the beautiful is *at once agreeable and good*, yet in a specific way that mitigates the typically 'interested' character of our pleasure in either. This can be understood as a fairly intuitive phenomenological claim: it is precisely in the reciprocal coordination of sensuous and rational modes of necessitation that (Schiller suggests) we cease to experience either as a burdensome load or alien force of compulsion, and so first feel radically unencumbered, empowered, and joyful—and in this sense, free. 'Ideas' make 'actuality' seem “*small*” by comparison. For instance, self-seeking individualism seems petty and small by comparison to properly moral concern for the welfare of all people. And 'necessity' conversely seems to “grow[] *light*,” in the sense that ideal forms or rational principles

334Schiller 1795/2014, 81.

335Schiller 1795/2014, 82.

336Schiller 1795/2014, 63.

337Schiller 1795-6/1966, 111.

338I.e., the head of a 1st-century Roman statue of the goddess Juno. One commentator argues that Schiller's choice “almost certainly reflects the influence of Goethe,” who saw the sculpture in Rome (MacLeod 1998, 244 n. 64).

339Schiller 1795/2014, 64.

appear ethereal and insubstantial, when brought into contact with concrete sensuous 'perception'. In both directions, then, it is not the attenuation of 'form' and 'sense' impulses but rather their full reciprocal activation that lifts us out of *seriousness* into *play*.³⁴⁰ Schiller's account of aesthetic disinterestedness apparently differs from Kant's. For Kant, aesthetic experience is purely *contemplative*, in that it involves neither rational nor sensuous desires—not a balance of the two, as Schiller apparently claims. In fact, I argue below, Schiller appeals to a balance of rational and sensuous *passions*, not *desires*. This is still arguably opposed to Kant's view, but less clearly so.

8.4. We may now turn to Nietzsche's critique of Kantian disinterestedness, which will help to better orient further analysis of his relationship to Schiller. Nietzsche's clearest criticism of Kantian aesthetic disinterestedness occurs in Essay III, §6 of *On the Genealogy of Morals* (1887).³⁴¹ Here Nietzsche complains that Kant's account unduly privileges the experience of the artistic 'spectator' [*Zuschauer*] over “the point of view of the artist (the creator).”³⁴² (In a note from 1888, Nietzsche likewise insists that “to demand of the artist that he should practice the perspective of the audience (of the critic—) means to demand that he should impoverish himself and his creative power—.”³⁴³) He also questions Kant's association of beauty with “impersonality and universality,” which he notes are elsewhere used to dignify *knowledge*:

This is not the place to inquire whether this [viz., Kant's thinking that he was honoring art by associating beauty prominently with impersonality and universality, as predicates which also 'establish the honor of knowledge'] was essentially a mistake; all I wish to underline is that Kant, like all philosophers, instead of envisaging the aesthetic problem from the point of view of the artist (the creator), considered art and the beautiful purely from that of the 'spectator,' and unconsciously introduced the 'spectator' into the concept 'beautiful.' It would not have been so bad if this 'spectator' had at least been sufficiently familiar to the philosophers of beauty—namely, as a great *personal* fact and experience, as an abundance of vivid authentic experiences, desires [*Begierden*], surprises, and delights in the realm of the beautiful! But I fear that

340Schiller 1795/2014, 62. Schiller elsewhere appeals to 'seriousness' in a distinct and more complimentary sense—e.g. he praises “the high solemnity of feeling that must underlie all play if it is to be poetic” (Schiller 1795-6/1966, 123), and argues that “[e]verywhere too little seriousness underlies [Voltaire's] ridicule” (ibid., 124).

341I cite Nietzsche's texts by section and part number using the standard English abbreviations: *A* = *The Antichrist*, *BGE* = *Beyond Good and Evil*, *BT* = *The Birth of Tragedy*, *EH* = *Ecce Homo*, *GM* = *On the Genealogy of Morals*, *GS* = *The Gay Science*, *NCW* = *Nietzsche Contra Wagner*, *TI* = *Twilight of the Idols*, *WP* = *The Will to Power*, *Z* = *Thus Spoke Zarathustra*. I use the Kaufmann and Hollingdale translations. For some notes, I cite *KSA* = *Kritische Gesamtausgabe*, edited by Colli and Montinari, by volume, fragment and aphorism number.

342*GM* III, 6.

343*WP* 811.

the reverse has always been the case; and so they have offered us, from the beginning, definitions in which, as in Kant's famous definition of the beautiful, a lack of any refined first-hand experience reposes in the shape of a fat worm of error. 'That is beautiful,' said Kant, 'which gives us pleasure *without interest*.'³⁴⁴

Insofar as the 'abundance of vivid authentic experiences, desires, surprises, and delights in the realm of the beautiful' is a manifestly *personal* experience, Nietzsche argues that only someone lacking this sort of 'refined first-hand experience' with beauty could claim that judgments of taste are rendered from an 'impersonal' point of view. Moreover, he clearly associates 'vivid authentic experiences, desires, surprises, and delights' with the 'interestedness' of pleasure in beauty.

This link is further clarified by Nietzsche's subsequent interpretation of a passage in which Stendhal describes the beautiful as '*une promesse de bonheur*' ('a promise of happiness'). "[T]o [Stendhal]," Nietzsche suggests, "the fact seems to be precisely that the beautiful *arouses the will* ('interestedness') [*die Erregung des Willens* (des 'Interesses')]."³⁴⁵ Here several threads of Nietzsche's critique come together. Stendhal is a "genuine 'spectator' and artist," on Nietzsche's view, and so naturally understands beauty from this creative perspective as opposed to that of a creatively inert spectator.³⁴⁶ Part of what Stendahl sees from this creative perspective, in turn, is that beauty produces 'arousal of the will', which is directly opposed to the 'will-lessness' that Schopenhauer links to aesthetic experience.³⁴⁷ For Nietzsche, this state of 'arousal' is *personal* in that it involves 'an abundance of vivid authentic experiences, desires, surprises, and delights' with respect to beauty. And he identifies this 'arousal of will' in 'personal' experiences directly with the 'interestedness' of truly artistic or creative responses to beauty.³⁴⁸

According to Nietzsche, then, the Kantian theory of disinterestedness reflects Kant's merely spectatorial and so overly passive relationship to beauty. Creative people understand that

344GM III, 6.

345GM III, 6. See Nehamas 2007 for thoughtful reflection upon Stendahl's remark vis-à-vis Nietzsche and Kant.

346GM III, 6.

347Schopenhauer (1819/1966, 219) takes contemplation of beauty to be a "painless state" of temporary "freed[om] from the terrible pressure of the will," in which we "celebrate the Sabbath of the penal servitude of willing."

348To be in a state of 'aroused will' is plausibly to be *willful* as opposed to *will-less*, for Nietzsche. The broader subject of the third essay of the *Genealogy* is the meaning of the 'ascetic ideal' that Nietzsche takes to manifest in a self-abnegating drive to be will-less (GM III, 28). In GM III, 6 Nietzsche is also attacking Schopenhauer, who claims that pleasure in beauty arises from self-consciousness "not as an individual, but as *pure, will-less subject of cognition*," such that "our attention is no longer directed to the motives of willing but instead grasps things freed from their relation to the will, and hence considers them without interests, without subjectivity, purely objectively" (Schopenhauer 1819/1966, 219). Schopenhauer's Kantianism is mediated by his own pessimistic theory of individualized willing as essentially tied to suffering, grounded in alienation from the objects of desire.

beauty in fact systematically *arouses* the will, Nietzsche thinks, precisely because their creative power itself *is* such a state of willful 'arousal'. Thus, in *Twilight of the Idols* (1889), Nietzsche insists that 'Apollonian' and 'Dionysian' art forms both elicit a state of 'frenzy' or 'intoxication' [*Rausch*].³⁴⁹ More explicitly, he writes in a note from 1888 that “the effect of works of art is to *excite the same state that creates art*—intoxication.”³⁵⁰ And, as he clarifies in another note from 1888, this “condition of pleasure called intoxication” is “precisely an exalted feeling of *power*.”³⁵¹

Finally, for the purposes of the present analysis, it should be emphasized that Nietzsche connects creative 'arousal' in states of 'interested' willful engagement with beauty directly to *desire*, including even paradigmatically sensuous desires like basic feelings of sexual attraction:

If our aestheticians never weary of asserting in Kant's favor that, under the spell of beauty, one can *even* view undraped female statues 'without interest,' one may laugh a little at their expense: the experiences of *artists* on this ticklish point are more 'interesting,' and Pygmalion was in any event *not* necessarily an 'unaesthetic man.' Let us think the more highly of the innocence of our aestheticians which is reflected in such arguments; let us, for example, credit it to the honor of Kant that he should expatiate on the peculiar properties of the sense of touch with the naiveté of a country parson! (*GM* III, 6)

Here one may also recall Nietzsche's explicit appeal to 'desires' [*Begierden*] as part of the 'great *personal* fact and experience' that a 'genuine “spectator” and artist' would associate with beauty.

8.5. Schiller anticipates Nietzsche's dual emphasis on the point of view of 'creators' rather than 'spectators' and on the 'arousal of will' in genuinely creative receptivity to beauty, in certain respects. This is especially noteworthy insofar as Schiller's aesthetic theory is heavily inspired by his reading of Kant. By no means do I claim that Schiller was Nietzsche's main or only influence in this context.³⁵² (Nietzsche did read Schiller's *Letters on the Aesthetic Education of Man* in

349*TI* “Skirmishes of an Untimely Man,” 10.

350*WP* 821. Nietzsche does not always use *Rausch* so expansively. In *The Birth of Tragedy*, e.g., he maps the distinction between Apollonian and Dionysian drives onto *dreams* and *intoxication* [*des Traumes und des Rausches*] (*BT* 1).

351*WP* 800 [1888].

352Among others, Emerson and Goethe also likely guided Nietzsche's hostility to 'will-less' aesthetic contemplation. (Nietzsche's view of Goethe was in part mediated by Emerson's account in *Representative Men*—see Brobjer 2008, 247.) A broader Romantic tradition also clearly influenced Nietzsche's notion of Dionysian ecstasy, and his emphasis on creative-destructive power and nature's 'superabundance'—all of which bears on his assessment

1862, studied his *Sämtliche Werke* and essay *On Naive and Sentimental Poetry* in 1871, and returned to the latter again in 1873.³⁵³) But Schiller's particularly close theoretical proximity to Kant, on various points, helps to show how Nietzsche's appeal to 'willful arousal' in creative responses to beauty echoes accounts of disinterestedness arising within the Kantian tradition.

As we have seen, Schiller evidently understands aesthetic disinterestedness, not as the absence of interests or desires, but as freedom in the reciprocal coordination of sensuous and rational drives: “[...]the freedom in which [one] quite rightly place[s] the essence of Beauty is not lawlessness but harmony of laws, not arbitrariness but the utmost inner necessity.”³⁵⁴ Likewise: “[e]very exclusive domination of either of [Man’s] two fundamental impulses is for him a condition of constraint and of force, and freedom consists solely in the co-operation of both his natures.”³⁵⁵ Clearly, these formulations indicate how to properly interpret Schiller's claim that an “impassioned fine art” is a “contradiction in terms,” and “no less self-contradictory is a fine instructive (didactic) or improving (moral) art, for nothing is more at variance with the concept of Beauty than that it should have a tendentious effect upon the character.”³⁵⁶ For Schiller, beauty elicits freedom from sensuous 'passions' and avoids 'tendentious' moral-rational effects because it involves the harmony of sensuous and rational laws, not their absence or attenuation.

Some of Nietzsche's central criticisms of Kantian aesthetic disinterestedness therefore do not apply to Schiller's account, at least in any straightforward way. Again, Nietzsche insists that Pygmalion was “*not* necessarily an 'unaesthetic man'” by virtue of falling in love with the statue he carves, and so chastises Kant for approaching aesthetics “with the naiveté of a country parson.” But as we saw above, Schiller explicitly allows that the Juno Ludovici's sensuous aspect “kindles our love”: we are “irresistibly seized and attracted” by it, as a godlike *woman*, and “melt in [its] celestial loveliness.” Schiller simply adds that we are equally held at distance from the statue insofar as it stimulates our drive to rational form, as a womanly *god* who “demands our veneration.” If anything, then, Nietzsche's analysis may appear more naive than Schiller's. For in his rush to reject the anti-sensualism that he sees in the Kantian notion of aesthetic disinterestedness, Nietzsche arguably fails to appreciate the extent to which Kant's view

of aesthetic disinterestedness, as I will argue. See Bauemer 1976 for a survey of this Dionysian tradition. See also Norman 2002, on Nietzsche's relationship to early Romanticism. These studies of Nietzsche and Romanticism are typical in excluding Schiller (who is often viewed as a Classicist, not a Romantic).

353Brobjer 2008.

354Schiller 1795/2014, 71.

355Schiller 1795/2014, 68.

356Schiller 1795/2014, 84.

emphasizes the full activation of sensuous and rational powers, in equal measure. This is the crux of the Kantian notion of 'free play', after all, at least as interpreted by theorists like Schiller.

Here one may object: if Nietzsche reacts to Kantian aesthetic theory with such intense aversion, surely this indicates that Nietzsche's criticism of aesthetic disinterestedness is *not* directly influenced by Schiller, at least insofar as Schiller's view is still broadly Kantian? Here several points are worth clearly noting. First, Nietzsche's criticism of Kant is at least in part predicated on his hostility to *Schopenhauer's distinctive interpretation* of Kantian aesthetic disinterestedness, in terms of the cessation of 'interested' activity like sexual desire.³⁵⁷ To some extent, Nietzsche even seems to be aware of the fact that he is at least as much engaged with Schopenhauer's version of Kantian aesthetic theory, in *GM III §6*, as he is with Kant himself.³⁵⁸ Thus, insofar as Schopenhauer's interpretation of Kant is far from clearly correct, by comparison to less ascetic interpretations like Schiller's, Nietzsche may well reject *Schopenhauer's Kantianism* in a way that reflects his own positive influence by *Schiller's Kantianism*. Insofar as Nietzsche takes Schopenhauer's interpretation of aesthetic disinterestedness to accurately reflect Kant's view, in turn, Nietzsche himself seems not to clearly apprehend this complex dynamic.

Nor does Schopenhauer's interpretation of Kantian aesthetic disinterestedness have to be simply *wrong*, in order for Schiller's alternate interpretation to be at least partly accurate. Rather, it is most plausible that both Schopenhauer and Schiller here understand something real in, and critical to, Kant's aesthetic theory. Namely, both clearly perceive that Kant associates pleasure in beauty with a kind of *freedom from desire*, and both agree with Kant on this point. Schopenhauer offers a *negative* vision of this Kantian state of freedom from desire, in terms of the *absence* of desires or willful activity. Correspondingly, he valorizes a drive to 'will-lessness', which Nietzsche diagnoses as perversely ascetic. Schiller instead offers a *positive* vision of Kantian pleasure in freedom from desire, in terms of the 'harmony' of sense- and form-impulses.

As construed by Schiller, moreover, aesthetic freedom does not clearly preclude 'desire' or willful 'arousal', in Nietzsche's sense. In fact, I will argue, Schiller's account makes salient a distinction between *desire* and *passion*, which indicates how aesthetic experience could involve passion but not desire. And there is even good reason to think that Nietzsche would find this view amenable. Note that my claim here is not that Nietzsche was positively influenced by *non-*

³⁵⁷Here I am very much in agreement with Came (2009).

³⁵⁸Compare Janaway's suggestion that "[a]fter the brief discussion of Kant, Nietzsche reverts [in *GM III*, 6] to his more serious target, Schopenhauer" (2007, 191). This is a slightly stronger claim than I take to be warranted, given my analysis here. But I agree that Nietzsche is here at least as concerned with Schopenhauer as with Kant.

Kantian elements in Schiller. Rather, Schiller's view contains two distinct currents of Kantian influence. First, Schiller's distinction between 'work' and 'play' reflects the direct influence of Kant's distinction between pleasure in desire-satisfaction and pleasure entirely free from desire. Second, Schiller's emphasis on 'harmony' between sense- and form-impulses reflects the direct influence of Kant's appeal to the feeling of 'free play' between imagination and understanding. Nietzsche is in turn directly influenced by Schiller's work-play distinction, hence indirectly by one main aspect of Kantian aesthetic theory, even while he moves further away from the other main aspect of Schiller's Kantianism, concerning the 'harmony' of sensuous and rational activity.

8.6. Schiller views aesthetic disinterestedness not *just* as freedom in the harmony of sensuous and rational faculties, but also insofar as the form- and sense-impulses function as *passions* or loci of *power*, rather than *lack*. Here recall his claim that it is “assuredly not the cry of desire which we hear in the melodious warbling of the song-bird,” for “[t]he animal *works* when deprivation is the mainspring of its activity, and it *plays* when the fullness of its strength is this mainspring, when superabundant life is its own stimulus to activity.”³⁵⁹ 'Play' is here associated directly with freedom from desire, which is in turn intuitively tied to Kantian disinterestedness. In order to analyze this intuitive connection more precisely, however, it will prove helpful to explicitly distinguish several aspects of Schiller's opposition between 'play' and 'work'.

First, Schiller associates work directly with 'deprivation', which he explicitly contrasts against play as manifest in 'superabundant life' and 'the fullness of strength'. This bears close resemblance to a distinction he draws elsewhere, in an epigram on 'Love and Desire' [*Liebe und Begierde*]: “[...]One *loves* what he has, one *desires* what he has not; / Only the rich soul loves, only the poor one desires.”³⁶⁰ Schiller associates 'desire' [*Begierde*] with lack or deprivation in both contexts. The relationship between the 'love' of a 'rich soul' and the 'play' of a swarming insect or warbling songbird is arguably less direct. Partly for this reason, I will refer to this aspect of Schiller's distinction between 'work' and 'play' as the distinction between *desire-driven activity* grounded in lack or external need and *impassioned activity* grounded in power or internal necessity—or, for short, *desire* as opposed to *passion*. Sorrow or joy thus plausibly functions as

³⁵⁹Schiller 1795/2014, 105.

³⁶⁰Dwight 1839, 352. Notably, Emerson draws a similar contrast in 'Self-Reliance': "What we love that we have, but by desire we bereave ourselves of the love" (Emerson 1983, 273). Indeed, Emerson places this statement in quotation marks because he is (mis)quoting Schiller (Arsić 2010, 193).

a passion, in the present sense, insofar as it feels like a force or locus of motive power by which one seems to be physically or psychically seized and hence actively compelled from within, without any goal beyond the exercise of this passion itself. (Thus, perhaps, we can understand the sense of 'joyous' in Schiller's appeals to 'joyous life' and 'joyous movement'.) Sadness functions as a desire, by contrast, insofar as it feels like having a void inside of oneself which one wishes to fill, and happiness functions a feeling of desire-satisfaction or the mere absence of external needs insofar as it feels like being complete or having nothing missing within oneself. For Schiller, then, the form-impulse and the sense-impulse both function as loci of *passion*, not *desire*, in aesthetic experience. Aesthetic play is the interplay of rational and sensuous *powers*.

Drawing this explicit contrast between *desire* and *passion* helps to demarcate a specific aspect of Schiller's opposition between 'work' and 'play', and hence to prevent terminological confusion in subsequent interpretive analysis. But explicitly appealing to 'passion' also helps to bring out an otherwise merely implicit, or perhaps merely latent, phenomenological dimension of Schiller's account: states of 'exuberant power', 'joyous movement', 'superabundant life', and so on, are intuitively associated with passion. 'Passion' is also arguably preferable to 'love', in this respect.³⁶¹ Thus my contrast between 'desire' and 'passion' constitutes a fair compromise between the goals of (i) deferring to Schiller's own terminology, and (ii) situating his account in a broader aesthetic theoretical context, in a way that is maximally illuminating and minimally misleading.

Nietzsche's account of will to power is another important aspect of this broader context. Here first recall his insistence that “the effect of works of art is to *excite the same state that creates art*—intoxication,”³⁶² and his elaboration elsewhere that “[t]he condition of pleasure called intoxication” is “precisely an exalted feeling of *power*.”³⁶³ This is part of Nietzsche's broader metaphysical vision of life, and arguably all reality, as essentially characterized by a drive to 'self-overcoming' or the continual expansion of power.³⁶⁴ Life, the “really fundamental

361 Here consider that Burke also associates beauty with “love” as opposed to “desire or lust” (Burke 1757/1958, 91), but sees the 'love' evoked by beautiful things as an “affection and tenderness” (ibid., 51) that is *not* elicited by sublime things, which instead arouse “astonishment” and “terror” in us (ibid., 57-8). Burke understands *both* love and terror as 'passions' (ibid., 57, 91, 136). This is also intuitive, which suggests that an aesthetic theory appealing to passion, rather than to love, is more likely to have intuitive purchase on aesthetic experiences of both beauty and sublimity. Burke also subsumes “violent and tempestuous passions” under the ambit of 'desire' (ibid., 91). Thus his notion of 'passion' is not opposed to 'desire' in the way that Schiller's notion of 'love' is.

362 WP 821. Nietzsche does not always use 'frenzy' so expansively. In *The Birth of Tragedy*, for example, he describes the distinction between Apollonian and Dionysian drives in terms of that between *dreams* and *intoxication* [*des Traumes und des Rausches*] (BT 1).

363 WP 800 [1888].

364 While some commentators interpret Nietzsche as attributing a will to power only to things that are alive in an intuitive sense, he occasionally suggests that the will to power is literally *everywhere*. E.g. “[L]ife is merely a

instinct” of which “aims at *the expansion of power*” (*GS* 349), is on Nietzsche's view “the instinct for growth, for durability, for an accumulation of forces, for power” (*A* 6). The “will of life” is “bent upon power” (*GM* II:11) and so itself *is* the will to power (*GS* 349). Will to power is “the essence of life” (*GM* II:12), in short, and in this sense “life itself simply *is* will to power” (*BGE* 259).³⁶⁵ This account of will to power in turn underlies the “main distinction” that Nietzsche draws in the domain of aesthetic value:

Regarding all aesthetic values I now avail myself of this main distinction: I ask in every instance, “is it hunger or superabundance that has here become creative?” At first glance, another distinction may seem preferable—it is far more obvious—namely the question whether the desire to fix, to immortalize, the desire for *being* prompted creation, or the desire for destruction. for change, for future. for *becoming*. But both of these kinds of desire are seen to be ambiguous when one considers them more closely; they can be interpreted in accordance with the first scheme that is, as it seems to me, preferable. The desire for *destruction*, change, and becoming can be an expression of an overflowing energy that is pregnant with future (my term for this is, as is known, “Dionysian”); but it can also be the hatred of the ill-constituted, disinherited, and underprivileged, who destroy, *must* destroy, because what exists, indeed all existence, all being, outrages and provokes them. To understand this feeling, consider our anarchists closely.

The will to *immortalize* also requires a dual interpretation. It can be prompted, first, by gratitude and love; art with this origin will always be an art of apotheoses, perhaps dithyrambic like Rubens, or blissfully mocking like Hafiz, or bright and gracious like Goethe, spreading a Homeric light and glory over all things. But it can also be the tyrannic will of one who suffers deeply, who struggles, is tormented, and would like to turn what is most personal, singular, and narrow, the real idiosyncrasy of his suffering, into a binding law and compulsion—one who, as it were, revenges himself on all things by forcing his own image, the image of his torture, on them, branding them with it.³⁶⁶

Nietzsche embraces art grounded in 'superabundance', and spurns art grounded in 'hunger'. This distinction in turn informs his basic criticism of *romanticism*: “[a]ll romanticism in art and insight” reflects the suffering of “those who suffer from the *impoverishment of life*,” he claims,

special case of the will to power” (*KSA* 13:14[121])). See Richardson 1996, 18 n.4 for further examples.

³⁶⁵Similarly: “Only where there is life is there also will: not will to life but—thus I teach you—will to power” (*Z* II: “On Self-Overcoming); “life itself is *will to power*” (*BGE* 13); “There is nothing to life that has value, except the degree of power—assuming that life itself is the will to power” (*KSA* 12:5[71].10).

³⁶⁶*GS* 370. See *WP* 846 [1885-1886] for a draft version. Compare *NCW*, “We Antipodes”: “Regarding artists of all kinds, I now avail myself of is main distinction: is it the *hatred* against life or the *excess* [*der Überfluß*] of life which has here become creative?”

rather than from “the *over-fullness of life*.”³⁶⁷ Likewise, but more broadly: “Points of view for *my* values: whether out of abundance [*der Fülle*] or out of want [*dem Verlangen*]?![...]*—whether sick from sickness or excessive health?*”³⁶⁸ (Compare Goethe's characterization of Romanticism in a letter to Eckermann from 1829: “The classical I call healthy and the Romantic sick...Most of the new poetry is not Romantic because it is new, but because it is weak, sickly, and ill, and the old is not classical because it is old, but because it is strong, fresh, cheerful, and healthy.”³⁶⁹)

Nietzsche thus takes all good art to induce feelings of power and abundance as opposed to weakness and deprivation. He diagnoses Schopenhauer as the type of romantic who seeks out “rest, stillness calm seas, redemption from themselves through art and knowledge” as a symptom of spiritual 'hunger' and the 'impoverishment of life'.³⁷⁰ Hence, Nietzsche rejects Schopenhauer's vision of contemplating beautiful form as a 'pure, will-less' subject. But here Nietzsche's view is still essentially compatible with Schiller's reinterpretation of Kantian aesthetic disinterestedness in terms of the coordination of sensuous and rational *passions*, in the absence of all mere *desires*.

Here one might object that 'passion' (via the Latin *passio* and Greek *pathos*) and '*Leidenschaft*' both strongly connote suffering and passivity, in a way that seems to run counter to my proposed distinction between passions and desires. Thus, indeed, Nietzsche is sometimes explicitly critical of 'passions' [*Leidenschaften*], as in a section of *Thus Spoke Zarathustra* on '*[D]en Freuden- und Leidenschaften*',³⁷¹ The term '*Freudenschaften*' is an original coinage by Nietzsche, from *Freude* ('joy'), which Walter Kaufmann translates aptly as 'passions-enjoyed', by contrast to *Leidenschaften* construed as 'passions-suffered'. Nietzsche directly links the *suffering* of passions (i.e., *Leidenschaften*) to a (moralistic) impulse to label these passions as *evil* [*böse*]. By contrast, virtues [*Tugenden*] “grow out of” [*wuschen aus*] passions insofar as “[y]ou set your highest goal to [these passions'] heart [*Du legtest dein höchstes Ziel diesen Leidenschaften an's Herz*].”³⁷² In this way, passions-suffered [*Leidenschaften*] are transformed into “your virtues and passions you enjoy [*deine Tugenden und Freudenschaften*].” Moreover, we have seen above that Nietzsche sometimes draws positive links between 'desire' [*Begierde*] and aesthetic experience.

But these terminological points do not undermine my view. Quite to the contrary, the

367GS 370. Similarly: “Deepest difference: whether hunger or overabundance [*der Überfluß*] becomes creative? The former generates the ideals of romanticism” (*WP* 59 [1885-1886]).

368*WP* 1009 [1887].

369Quoted in Richards 2002, 458.

370GS 370.

371*Z I*, 5. I thank an anonymous referee at *Ergo* for pressing me on this point.

372*Z I*, 5.

essential point is that I am using the term 'passion' to indicate something close to, if not simply identical to, what Nietzsche means by 'Freudenschaft' as opposed to 'Leidenschaft'. Instead of coining a new English word, I have simply elected to appropriate the term 'passion' for this purpose, in part for reasons already indicated above. *Thus construed*, I distinguish 'passion' from 'desire', to which I relegate all connotations of suffering and passivity, in order to gain conceptual and interpretive clarity. In this way, I accommodate the fact that Nietzsche's use of the words 'passion' and 'desire' does not always neatly track the conceptual distinction that I am indicating with these terms, and which clearly structures his view. There is good reason to believe that Nietzsche's emphasis on the distinction between passion and desire reflects his positive influence by Schiller, at least in part. And there is good reason to believe that Schiller's emphasis on the same distinction is at least partly informed by Kant's claim that our pleasure in beauty is orthogonal to both rational and sensuous modes of desire-satisfaction.

One final terminological point may shed further light on the relationship between my analysis and other areas of Nietzsche scholarship. Namely, if despite all of the above one were to still resist my use of the term 'passion' to indicate activity grounded in power or internal necessity, then one might instead choose to appeal to terms like 'impulse' or 'drive' [*Trieb*], which are ubiquitous in Nietzsche's writings, for the same purpose. Hence, one might contrast 'passions' and 'desires', alike, against genuine 'drives'. One cost of this interpretive decision, however, is that terms like 'impulse' and 'drive' do not evoke *intense affective states* in the way that 'passion' does. In this light, moreover, my use of the term 'passion' could perhaps be leveraged to draw Nietzsche's 'third-personal' drive-psychological theory into closer relation with a more 'first-personal' or phenomenological analysis of the kinds of affective states that he—like Schiller—evidently associates with aesthetic experience.

8.7. Second, Schiller associates play with 'purposeless display', and hence implicitly associates 'work' with purposive activity. This is informed by Kant's (more complex) claim that beautiful form displays a “purposiveness without an end [*Zweckmäßigkeit ohne Zweck*],” and so is “entirely independent of the representation of the good.”³⁷³ The link between this distinction and the previous one depends on whether purposive activity necessarily stems from 'deprivation'.

Notably, Nietzsche sometimes characterizes the will to power in fairly similar terms. For

373 *KrU* 5:226 (Kant 1790/2000, 111).

instance, he claims in *Twilight of the Idols* that the Darwinian “struggle for existence” exists only “as an exception,” because “the total appearance of life is not the extremity, not starvation, but rather riches, profusion, even absurd squandering—and where there is struggle, it is a struggle for *power*.”³⁷⁴ Life's essential drive to self-overcoming has no extrinsic *purpose* or *goal*, on Nietzsche's view. Rather, the world viewed as “*the will to power—and nothing besides*” is his “‘beyond good and evil,' without goal, unless the joy of the circle is itself a goal”:

This world: a monster of energy, without beginning, without end[...]a sea of forces flowing and rushing together, eternally changing, eternally flooding back, with tremendous years of recurrence, with an ebb and a flood of its forms; out of the simplest forms striving toward the most complex, out of the stillest, most rigid, coldest forms toward the hottest, most turbulent, most self contradictory, and then again returning home to the simple out of this abundance, out of the play of contradictions back to the joy of concord, still affirming itself in this uniformity of its courses and its years, blessing itself as that which must return eternally, as a becoming that knows no satiety, no disgust, no weariness.³⁷⁵

Despite his criticism of Kantian disinterestedness, then, Nietzsche is clearly friendly to Schiller's claim that 'exuberant power enjoying itself in purposeless display' is aesthetically significant. And Schiller's view here tracks Kant's account of 'disinterested' pleasure more closely than it might appear to. When either 'form' or 'sense' acts as a passion, it is evidently 'purposeless': activity undertaken *for its own sake*, free from interest in the existence of any objects of desire.

8.8. Third, Schiller associates work with 'external need' [*äußern Bedürfnis*], which he implicitly contrasts against 'inner need'. In his *Kallias Letters* to Gottfried Körner (1793), he elaborates on this sort of inner need or necessity and its relationship to 'purposeless display':

[Nature in artfulness is] the pure coincidence of the inner essence with form, *a rule, which is at once given and obeyed by the thing*. (The beautiful is merely a symbol of the completed and perfect, because it does not, as does the purposeful, require anything outside itself, but commands and obeys itself for the sake of its own law.)³⁷⁶

Schiller proposes that a beautiful thing must be “heautonomous”: its *form* must be “self-

374 *TI* “Anti-Darwin”.

375 *WP* 1067 [1885].

376 Schiller 1793/2003, 167.

determining and self-determined,” such that the thing seems not only to obey or realize its own essence, but moreover to freely create it. As one commentator puts it, “what seems to be a constraint never appears beautiful to us,” and so “the law or form of a [beautiful] thing must appear to derive from it naturally, spontaneously, flowing from its inner energies.”³⁷⁷ Autonomy by contrast only requires that something determines itself in accordance with its own essence or form. So an autonomous being may impose its own form upon itself in the mode of a constraint —e.g., a person may impose rational form on her own behavior merely in the mode of an alien force of compulsion, yielding genuine autonomy or self-determination, but not heautonomy or beauty. (Likewise, recall Schiller's caution against 'overpowering rationality'.) Autonomy and heautonomy are thus two different kinds of freedom, for Schiller.³⁷⁸ And *nature* construed as “*the inner necessity of form*” [die innere Notwendigkeit der Form], as opposed to form that has been artificially or otherwise externally imposed onto matter, appears as 'purposeless display' precisely because it is heautonomous.³⁷⁹

Still, Schiller argues in *On Naive and Sentimental Poetry* (1795-6) that “*true nature*” [wahre *Natur*] must be carefully distinguished from mere “*actual nature*” [wirkliche *Natur*]:

Actual nature exists everywhere, but true nature is all the rarer, for to it belongs an inner necessity of existence [*innere Notwendigkeit des Daseins*]. Actual nature is every outburst of passion [*Leidenschaft*], however crude; it may even be true nature, but truly *human* it cannot be, for this requires some participation of the independent faculties in every utterance the expression of which is to possess dignity. Actual human nature includes every moral baseness, but it is to be hoped that true human nature does not; for the latter cannot be other than noble.³⁸⁰

Rather than the phrase 'inner necessity of *form* [Form]', as in his explanation of heautonomy, Schiller here appeals to the 'inner necessity of *existence* [Daseins]' in 'true' nature. Although this terminological variation is somewhat obscure, and its significance perhaps easily overstated, it can arguably be understood in the following terms. 'True nature', in the context of *On Naive and Sentimental Poetry*, is nature construed as that of which every poet is properly the “*guardian*[],”

³⁷⁷Beiser 2005, 67.

³⁷⁸Compare Schiller 1975/2014, 76 n.14.

³⁷⁹Schiller 1793/2003, 166. Kant also uses the term 'heautonomy', but with a different meaning. For Kant, the power of judgment displays *heautonomy* insofar as it 'prescribes a law' to *itself*, rather than (as in the case of *autonomy*) to nature. See *KrU* 5:185-6; 20:225 (Kant 1790/2000, 72-3; 27-8).

³⁸⁰Schiller 1795-6/1966, 158-9.

whether as a 'naive' poet who “*is nature*” or a 'sentimental' poet who “*seek[s]* lost nature”:³⁸¹

Nature, considered in this wise, is for us nothing but the voluntary presence, the subsistence of things on their own, their existence in accordance with their own immutable laws. ... [W]hat could a modest flower, a stream, a mossy stone, the chirping of birds, the humming of bees, etc., possess in themselves so pleasing to us? ... It is not these objects, it is an idea represented by them which we love in them. We love in them the tacitly creative life, the serene spontaneity of their activity, existence in accordance with their own laws, the inner necessity, the eternal unity with themselves ... Yet their perfection is not to their credit, because it is not the product of their choice. They accord us, then, with the quite unique delight of being our example without putting us to shame ... We are free, they are necessary; we change, they remain a unity. But only if both are joined one with the other—if the will freely obeys the law of necessity, and reason asserts its rule through all the flux of imagination, does the ideal or the divine come to the fore.³⁸²

Many aspects of 'true' nature thus arguably fail to be heautonomous insofar as their 'inner necessity,' or 'existence in accordance with their own laws,' is '*not the product of their choice.*' Whereas a heautonomous thing's form is 'self-determining and self-determined', the modest flower or mossy stone's form cannot *literally* flow freely from within itself, because only rational beings are literally capable of freedom. Inhuman nature displays only the “choiceless but calm necessity of the irrational.”³⁸³ Hence, Schiller arguably associates heautonomy in a strict sense only with true human nature, i.e. aesthetic play or freedom, not with true nature more generally. This helps to explain why, as Schiller is drawing the distinction between 'actual' and 'true' nature, he acknowledges that 'every outburst of passion, however crude...*may even be true nature*' (my emphasis). 'Crude' passion simply cannot be “truly *human*”³⁸⁴—nor (hence) truly *beautiful*.

Schiller is a fairly strict Kantian, in this respect, whereas Nietzsche embraces a far more radical aesthetic amoralism. In *The Birth of Tragedy*, for example, Nietzsche describes the Dionysian as one of two fundamental art-impulses, even though it manifests as a drive towards ecstatic identification with 'titanic' and 'barbaric' forces of nature.³⁸⁵ The Nietzschean Dionysus

381 Schiller 1795-6/1966, 106, 110.

382 Schiller 1795-6/1966, 84-5.

383 Schiller 1795-6/1966, 103.

384 Schiller 1795-6/1966, 158.

385 BT 4

enjoys all “productive and destructive force,” evidently without regard for its moral quality.³⁸⁶ More broadly, Nietzsche's theory of a universal will to power, incorporating both Dionysian and Apollonian aspects, is his vision of an “entirely reckless and amoral artist-god,” who in “creating worlds, frees himself from the *distress* of fullness and *overfullness*”:³⁸⁷ an *impassioned* god.

For Kant, on the other hand, taste is “at bottom a faculty for the judging of *the sensible rendering of moral ideas*.”³⁸⁸ He understands the feeling of harmonious free play as a special kind of 'reflecting judgment', which aims not at subsuming a given beautiful intuitive form under the concept of a *determinate kind of object of possible experience* (as in the standard 'objective' use of the reflecting power of judgment), but rather at relating this beautiful form to the non-objective concept of the *universal subjective conditions of possibility of objective (reflecting) judgment itself*.³⁸⁹ Roughly speaking, Kant claims that finding something beautiful essentially involves synthesizing the manifold of sensations it elicits by means of the *universal subjective concept* of a generic theoretically rational *subject* who perceives objects in space and time, as opposed to the concept of a specific kind of *object*. In short, one can roughly understand Kant to be claiming that things are beautiful insofar as they sensuously represent the generic structure of human cognition, or the intuitive 'shape' of a generic sensuous-rational subject like us.

Schiller's claim that we “believe ourselves to *perceive form immediately*” in the experience of beauty must be understood in this context.³⁹⁰ Broadly as Kant claims that taste is 'a faculty for the judging of the sensible rendering of moral ideas,' Schiller claims that the objective correlate to the aesthetic play impulse is beautiful “living shape,” which can be understood in Kantian terms as the 'sensible rendering' of human freedom.³⁹¹ Here 'objective' should be understood in the sense of an objective secondary quality like the greenness of a meadow: this greenness inheres in the meadow itself, in a sense, even though it only appears in relation to perceiving subjects. Thus the meadow's greenness can be described as its objectively-grounded power to affect subjects like us in a certain way. Likewise, then, Schiller posits 'living shape' as

386 *WP* 1049 [1885-1886]. See also *WP* 1050 [1888].

387 *BT* “Attempt at a Self-Criticism” §5. Compare Friedrich Schlegel's remark that “the sacred plays of art are only a remote imitation of the infinite play of the universe, the work of art which eternally creates itself anew” (Schlegel 1968, 89). See also Norman 2002.

388 *KrU* 5:356 [Kant 1790/2000, 230].

389 For Kant, to judge that a given object is beautiful is to claim that the spatiotemporal form of a corresponding intuitive representation of the object is 'subjectively purposive', or “purposive for the reflecting power of judgment by itself, i.e., in the mere intuition without any concept” (*KrU* 20:249 (Kant 1790/2000, 49).

390 Schiller 1795/2014, 97.

391 Compare Hegel 1975.

beautiful things' objectively-grounded power to elicit a broadly Kantian state of 'play'. This state of 'aesthetic play' is the most fully human state, on his view, as we have seen. Hence, 'living shape' is the sensuous expression of essential human powers, for Schiller. For Nietzsche, by contrast, good art can express entirely amoral forms of power, including that of inhuman nature.

8.9. Nietzsche's radical amorality is arguably facilitated by views like Schiller's, however. Schiller's emphasis on 'true nature' that is neither mere 'actual nature' nor 'true human nature' motivates (latently) amoral standards of value that become fundamental for theorists like Nietzsche. While these more indirect forms of conceptual interrelation may seem tenuous, my primary intention in the present section is simply to show how what appears to be especially tenuous or indirect evidence in fact reveals deep structural continuities, running from Kant to Schiller to Nietzsche, that cannot otherwise be easily or fully appreciated. Note that these structural continuities are philosophically significant even if one insists that they do not amount to Schiller's direct or indirect *historical influence* on Nietzsche. However, it is also probable that Nietzsche was in fact positively influenced by Schiller in this regard, both directly (through his own reading of Schiller, as established above) and indirectly (through the mediating influence of figures like Emerson who, as indicated above, were themselves directly influenced by Schiller).³⁹² The more indirect evidence adduced in this section would not, in itself, be sufficient grounds for claiming Schiller's historical influence on Nietzsche. But it does provide some support for the intellectual historical hypothesis that Nietzsche was so influenced. And my primary intention is not to defend this claim of historical influence, but to use Schiller to reveal surprising deep structural continuities between Kantian aesthetic theory and Nietzsche's criticism of Kant. The significance of these continuities grounds the importance of a bare claim of

³⁹²See notes 352, 353, and 360, as well as associated main text. Indeed, it is even plausible that Nietzsche's account of the interplay of Dionysian and Apollonian drives in Attic tragedy is influenced in part by Schiller's account of the interplay between sensuous and rational powers in aesthetic experience, which is of course directly influenced by Kant's aesthetic theory. To sustain any such interpretive hypothesis would require far more analysis than I can here provide, however. For instance, Rehder (1976, 159) claims in a superficially similar vein that “[b]ehind the Apollonian and the Dionysian there still glow the well discussed polarities of the Classical and the Romantic or, *mutatis mutandis*, those of Antiquity and Christianity;” but that this is an oversimplification is immediately apparent from the fact that Nietzsche contrasts both the Apolline and the Dionysian against the Socratic, which in turn he clearly associates with Christian moralism. Likewise, Baeumer (1976, 181) claims that “[t]he well-known argument 'Classical-Romantic' ends in the controversy 'Classical-Dionysian,’” and that “Nietzsche stands on the side of the Romantics.” But this clearly cannot be correct if the 'Classical' is associated directly with the *Apollonian* (given that Nietzsche approves of Apollonian and Dionysian drives alike). Baeumer's claim is plausible, rather, only insofar as 'Classical' is interpreted in terms of the notion of Greek 'cheerfulness' that Nietzsche situates himself against polemically in *The Birth of Tragedy* (for instance).

historical influence.

That Nietzsche's amorality is plausibly facilitated by Kantian principles interpreted as by Schiller can be appreciated more fully by returning to Schiller's notion of 'physical play':

Even in mindless Nature there is revealed a similar luxury of powers [*Luxus der Kräfte*] and a laxity of determination [*Bestimmung*] which in that natural context might well be called play. The tree puts forth innumerable buds which perish without developing, and stretches out for nourishment many more roots, branches and leaves than are used for the maintenance of itself and its species. What the tree returns from its lavish profusion [*verschwenderischen Fülle*] unused and unenjoyed to the kingdom of the elements, the living creature may squander in joyous movements. So Nature gives us even in her material realm a prelude to the infinite, and even here partly removes the chains which she casts away entirely in the realm of form. From the compulsion of needs [*Zwang des Bedürfnisses*], or *physical seriousness* [physischen Ernste], she makes her way through the compulsion of superabundance [*Zwang des Überflusses*], or *physical play* [physische Spiel], to aesthetic play; and before she soars in the lofty freedom of the Beautiful above the fetters of every purposed end [*Zweck*], she is already approaching this independence, at least from a distance, in the *free movement* which is itself end and means [*Zweck und Mittel*].³⁹³

In terms of the aforementioned distinctions, 'physical seriousness' ('the compulsion of needs') is evidently closest to mere 'actual nature'. 'Physical play' ('the compulsion of superabundance') then evokes 'true nature' that is not yet 'truly *human*'. Physical play encompasses 'free movement which is itself end and means,' and thus resembles the heautonomous or beautiful thing that 'does not require anything outside itself.' But the physical play of the roaring lion, swarming insect, and warbling bird is not truly free play, as it is still grounded in 'compulsion'—albeit the *internal* compulsion of *passion* or their own superabundant power, not the *external* compulsion of *desire* or deprivation. So, like the modest flower or mossy stone, presumably, physically playful things have a 'perfection' that is yet 'not to their credit, because it is not a product of choice.'

'Physical play' is thus arguably a state of *purely sensuous passion* or superabundant *sensuous power*, for Schiller, whereas 'physical seriousness' is a state of *purely sensuous desire* or *sensuous deprivation*. 'Aesthetic play' is then an interplay between sensuous and rational *powers*, which manifest affectively as reciprocally-coordinated sensuous and rational *passions*.

Note that 'play' in the generic sense that encompasses both physical play and aesthetic

393Schiller 1795/2014, 105.

play seemingly cannot be the same thing as 'play' construed as the object of the 'play impulse', in which sense and form impulses are “combined.”³⁹⁴ For when Schiller says things like “Man plays only when he is in the full sense of the word a man, and *he is only wholly Man when he is playing*,”³⁹⁵ he is clearly referring to 'aesthetic play' and *not* to 'physical play'. Apparently, then, Schiller uses the term 'play' in two different senses. In the narrower sense, 'play' only refers to the free (inter)play of the form and sense impulses, as in Kant's account of aesthetic experience. In the broader sense, 'play' is any self-expressive, autotelic display of internal powers (as opposed to external needs), encompassing both 'physical play' and 'aesthetic play'.

Schiller arguably uses the term 'play' in both senses, not simply due to confusion or lack of concern for precision, but because he views play fundamentally in terms *freedom*. Physical play is *more free* than physical seriousness, and aesthetic play is *freer still*. Hence, aesthetic freedom is in some sense the only true form of play, for Schiller, as is reflected in his characterization of the 'play impulse' as that in which the form and sense impulses are 'combined.' But the 'compulsion of superabundance' is closer to true play than the 'compulsion of needs' is, so the former is aptly termed 'physical *play*', even if only in an approximate or analogical sense. The qualifier 'physical' thus serves not simply to differentiate physical and aesthetic play, as two different modes of play, but also to qualify the degree to which 'physical play' is genuine play. Physical play only approximates genuine play, which must be truly *free*.

One can arrive at a more radically amoral aesthetic theory, in the vein of Nietzsche's, by emphasizing that 'play' in the narrower sense is simply a special case of 'play' in the broader sense: it is the autotelic, coordinated, self-expressive display of essential *human* powers. 'Play' in the broader sense manifests 'superabundance' or 'exuberant power' in even arational natural phenomena. Hence, one might come to view human freedom as valuable *because* it is a form of play, rather than viewing physical play as valuable because it foreshadows human freedom.

Again, this is not Schiller's view: he consistently exalts human freedom as evaluatively fundamental. This is further evidenced by the moralistic denouement of his letters on aesthetic education: “aesthetic freedom” is ultimately just an “intermediate condition,” he claims, or “the necessary condition by which alone” it is possible to “make the sensuous man rational,” where in turn *morality* is the paragon of 'rationality':³⁹⁶ “Man is his *physical* condition is subject to the

394Schiller 1795/2014, 59.

395Schiller 1795/2014, 63.

396Schiller 1795/2014, 85.

power of Nature alone; he shakes off this power in the *aesthetic*; and he controls it in the *moral* condition.”³⁹⁷ This moralism is perhaps surprising, given Schiller's claim that Man “*is only wholly Man when he is playing*,”³⁹⁸ which is to say when he is experiencing beauty. But any apparent tension here is only superficial. Schiller's considered view is that the 'moral condition' *is* a condition of aesthetic freedom, and indeed the highest one.³⁹⁹ He differentiates this moral condition from the 'intermediate condition' of aesthetic freedom in certain contexts only in order to highlight the existence of a pre-moral form of aesthetic freedom, which (he argues) must precede the highest aesthetic condition of complete reciprocal coordination between moral principle and feeling. Nevertheless, Schiller's account of physical play indicates how more amoral theorists may revalue human freedom, as one among many kinds of impassioned activity.

8.10. Two points remain to examine more explicitly: Schiller's anticipation of Nietzsche's emphasis on the perspective of artists, and the relation between passion and will. Regarding the former, it is helpful to consider Schiller's account of a teleological progression from “crude taste” to authentically felt respect for moral law in a truly “*aesthetic state*”.⁴⁰⁰ The stages in this progression explicitly involve creative activity, not just reflection or contemplation. 'Crude taste' “fashions grotesque shapes,” for instance, and calls beautiful that which “gives [Man] material *for possible shaping*.”⁴⁰¹ Man then passes onward to more sophisticated taste in *outward* form:

[Now what Man possesses, what he produces, must] reflect the genial intellect which conceived it, the loving hand which executed it, the serene and free spirit which chose and established it. Now the ancient German goes in search of glossier animals' skins, statelier antlers, more elegant drinking horns, and the Caledonian selects the choicest shells for his festivals.[...]Man *adorns* himself.⁴⁰²

Here again, Schiller clearly emphasizes creative expression, not the reflective activity of passive aesthetic 'spectators'. This stage in turn evolves into more sophisticated taste in *inward* form:

The lawless leap of joy becomes a dance, the shapeless gesture a graceful and

397Schiller 1795/2014,89.

398Schiller 1795/2014, 63.

399Schiller 1795/2014, 109-110.

400Schiller 1795/2014, 107-110.

401Schiller 1795/2014, 107. For *Bilden*, I replace Snell's 'fashioning' with 'shaping', to emphasize the link to *form*.

402Schiller 1795/2014, 107.

harmonious miming speech; the confused noises of perception unfold themselves, begin to obey a rhythm and weld themselves into song. While the Trojan host with shrill cries storms like a flight of cranes across the battlefield, the Greek army approaches quietly, with noble tread. There we see only the arrogance of blind strength, here the triumph of form and the simply majesty of law.⁴⁰³

And humanity thereby ultimately achieves authentically felt respect for universal moral law:

A lovelier necessity now links the sexes together, and the sympathy of hearts helps to maintain the bond which was knitted only capriciously and inconstantly by desire. Released from its sullen chains, the quieter eye apprehends form, soul gazes into soul, and out of a selfish exchange of lust there grows a generous interplay of affection.⁴⁰⁴

Schiller thus interprets the 'moral condition' as a state of creative expression, arising from 'cruder' expressions of the same "aesthetic creative impulse."⁴⁰⁵ The result is a vision of creative 'harmony' between form and sense impulses, which is rightly contrasted against Kant's more contemplative theory of 'free play'. Schiller thus anticipates Nietzsche's emphasis on 'creators', in texts that Nietzsche actively engaged with. Moreover, Schiller's account shows how this emphasis is compatible with an otherwise broadly Kantian theory of aesthetic disinterestedness.

8.11. Finally, we may return to the relationship between disinterestedness and 'willlessness'. Although Nietzsche objects to (what he sees as) Schopenhauer's nihilistic drive to self-abnegation, Nietzsche himself embraces a certain kind of *de-individuation*, i.e., dissolution of individualized subjectivity. This is especially pronounced in *The Birth of Tragedy*, where Nietzsche is still heavily influenced by the Schopenhauerian metaphysics of 'will and representation'. But it persists even through his later writings. This is not a contradiction on Nietzsche's part, however, insofar as the 'arousal of will' that he associates directly with 'interestedness' in the *Genealogy* is compatible with an *impassioned* mode of de-individuation. In other words, there is no tension in Nietzsche's view insofar as the Dionysian drive to de-individuation is not *romantic*, in his sense of 'romanticism'.

Here there is an important difference between Nietzsche's view when *The Birth of*

403Schiller 1795/2014, 107-108.

404Schiller 1795/2014, 108.

405Schiller 1795/2014, 108.

Tragedy was first published in 1872, and his view in in the mid- to late-1880s, when he published a revised edition of *The Birth of Tragedy* with a prefatory 'Attempt at a Self-Criticism' (1886) and the *Genealogy* (1887). In the new 'Attempt at a Self-Criticism', Nietzsche criticizes his own youthful romanticism, and in particular his earlier call for an '*art of metaphysical comfort*'.⁴⁰⁶ The older Nietzsche associates the drive to 'metaphysical comfort' with romanticism and Christianity, and instead recommends learning "the art of *this-worldly* comfort first."⁴⁰⁷

Nevertheless, Nietzsche does not abandon his earlier appeal to Dionysian processes of de-individuation. In *Twilight of the Idols* (written in 1888), he 'baptizes' with the name Dionysus "the *faith* that only the particular is loathsome, and that all is redeemed and affirmed in the whole," which he calls "the highest of all possible faiths."⁴⁰⁸ Likewise, in an unpublished note from 1888 he explains that the word 'Dionysian' means to him:

... an urge to unity, a reaching out beyond personality, the everyday, society, reality, across the abyss of transitoriness: a passionate-painful overflowing into darker, fuller, more floating states; an ecstatic affirmation of the total character of life as that which remains the same, just as powerful, just as blissful, through all change; the great pantheistic sharing of joy and sorrow that sanctifies and calls good even the most terrible and questionable qualities of life; the eternal will to procreation, to fruitfulness, to recurrence; the feeling of the necessary unity of creation and destruction. (*WP* 1050 [1888])

By contrast, 'Apollonian' means "the urge to perfect self-sufficiency, to the typical 'individual,' to all that simplifies, distinguishes, makes strong, clear, unambiguous, typical; freedom under the law."⁴⁰⁹ Hence, for Nietzsche in the late 1880s, the Dionysian is clearly aligned with de-individuation and identification with nature, and the Apollonian with heroic individuality. This is largely in the spirit of Nietzsche's view in the first edition of *The Birth of Tragedy*, where he suggests that Dionysian frenzy involves ecstatic identification with a "universal will" or "world-will" [*Weltwillens*],⁴¹⁰ which he also identifies as "nature"⁴¹¹ or "primordial being" [*Urwesen*],⁴¹² and so yields insight into "vast universality and absoluteness."⁴¹³ This is to be contrasted against

406*BT* §18.

407*BT* "Attempt at a Self-Criticism" §7.

408*TI* "What the Germans Lack" §49; Kaufmann p. 554.

409*WP* 1050.

410*BT* 17, 21.

411*BT* 2, 4, 8.

412*BT* 17.

413*BT* §6.

the Apollonian “rhapsodist who does not become fused with his images but, like a painter, sees them outside himself as objects of contemplation” (*BT* 8).

Dionysian de-individuation is distinct from Schopenhauerian 'will-lessness' insofar as Nietzsche stipulates—particularly in the 1880s—that it must be grounded in an “*excess of force*.”⁴¹⁴ The Dionysian is will to power in the mode a drive to “[e]ternal life, the eternal return of life[...]the triumphant Yes to life beyond all death and change; true life as the over-all continuation of life through procreation, through the mysteries of sexuality.”⁴¹⁵ Thus Dionysian processes are *willful*, but not essentially *individualized*. They reflect the activity of holistic and hence *impersonal* modes of will to power, as opposed to 'Apollonian' heroic individuality.

Insofar as Nietzsche embraces both the Apollonian and Dionysian as 'art-impulses', he clearly does not insist that all genuine aesthetic experience involves de-individuation. But he also clearly believes that genuine aesthetic experience is *compatible* with de-individuation, as long as it is 'Dionysian' and not 'romantic'. Hence, Nietzsche's appeal to 'great *personal* fact and experience[...]in the realm of the beautiful' is evidently meant to be consistent with the existence of some (but not all) genuine aesthetic experiences that involve radical de-individuation.

Dionysian de-individuation is an *impassioned* state, clearly. But in Dionysian frenzy, the passions by which one is compelled will evidently seem to have been 'channeled' from without. They will be *objective* passions, that is, which are (at least as if) localized in 'nature', 'eternal life', or other transpersonal phenomena, not just within individual human subjects. Schiller's contrast between 'internal' and 'external' compulsion thus loses clarity in the context of Dionysian de-individuation. Hence, on Nietzsche's account aesthetic experience is no longer essentially tied to human self-expression, individually or collectively. For in Dionysian frenzy humanity may be impassioned from without, or *determined* by the amoral power of nature.

8.12. Schiller is by no means the only important conceptual influence—or the only plausible *historical* influence—on Nietzsche's aesthetic theory. And Schiller is not a strict Kantian in all respects. But Schiller does play an important mediating role between Kant and Nietzsche: Schiller's distinctive interpretation of Kantian aesthetic principles illuminates how Nietzsche's critique of aesthetic 'disinterestedness' reflects commitments that are far closer to Kantian than they appear to be. None of this is to say that Nietzsche's view is derivative upon

414*TI* “What I Owe to the Ancients,” 4. Compare *NCW*, “We Antipodes.”

415*TI* “What I Owe to the Ancients,” 4.

Schiller's, let alone Kant's. Nietzsche is an amoralist in a way that Schiller is not. Schiller treats human freedom as fundamental, and hence values states like 'physical play' as partial realizations or symbolic prefigurations of 'true human nature'. But by characterizing Kantian 'free play' in terms of the interaction of form and sense insofar as they function as loci of internal *power* rather than external *need*, Schiller paves the way for a more radical naturalism that emphasizes power, not human freedom, as aesthetically fundamental.

The present analysis demonstrates the utility—for the history of post-Kantian aesthetic theory, but plausibly also for 19th-century intellectual history more broadly, and arguably even for normative aesthetics—of a distinction between two modes of Romantic aesthetic theory, invoking two kinds of disinterestedness. On the one hand, there is a broadly *idealistic* current of Romanticism, which emphasizes the interplay of sensuous and rational faculties. On the other hand, there is a *dynamistic* current, which asserts the aesthetic character of all genuine passion and 'abundant' power, even in the form of arational natural force. Radical amoralists like Nietzsche emphasize this dynamism, and reject the idealistic tendency as 'romantic', in a pejorative sense. But both currents are arguably basic to Schiller's aesthetic theory. And it is perhaps to Schiller's credit that he struggles to fully recontain this dynamistic impulse under the purview of his idealistic emphasis on human freedom. In the core of Schiller's thought, rather, a moral drive to human freedom and an amoral drive to 'superabundant life' enter into dynamic relation, as natural powers or agonistically-interacting passions in their own right.

8.13. In part through Schiller's mediating influence, then, Nietzsche arrives at a naturalized notion of *willing* as impassioned activity: the autotelic expression of arational power or internal abundance. So understood, willing is to be contrasted against rational or sensuous *desiring*, insofar as the latter is essentially a manifestation of weakness, lack, or need.

The phenomenological association between Nietzschean power and feelings of passion, described above, equally holds for my own account of force. On my view, that is, *a passion just is an affective force*. Passions are thus a species of *drive*, or the objectively-impactful exercise of will-power, more broadly. Passions can impact mind-independent objects, e.g. via actions performed by impassioned agents. But passions can also interact with each other, within a given individual. Indeed, a genuine subject of affective experience is a real structure—a holistically-forceful structural form—comprising agonistically- and hierarchically-interacting passions.

9. Force Beyond 'Nature' and 'Culture'

Nietzsche's healthy turn towards the perspective of the artistic 'creator', as opposed to that of the Kantian aesthetic 'spectator', does not only involve his embrace of passion or affective power. It also crucially involves his reinterpretation of human cultural products, like art, as manifestations of their creators' will to power. Thus Nietzsche is concerned not just with the *experience* of true creative expression as one of impassioned freedom from desire, but also with the *products* of creative expression as external manifestations of creators' superabundant power.

This aspect of Nietzsche's view bears directly on his account of philosophy and scientific theories, as well as artworks. Nietzsche sees theoretical systems as manifestations or objective expressions of theorists' basic drives. In this sense, theories are ultimately just expressions of theorists' will to power. This does not mean that all theories are equally good, on Nietzsche's view, any more than his metaphysics entails that all forms of will to power are equally strong or healthy. But it does suggest that knowledge is not the transparent 'window' into mind-independent reality that some take it to be. Rather, according to Nietzsche, theoretical descriptions of the world are *essentially* expressive of theorists' drives, and only *inessentially* more or less accurate 'copies' of reality. *What if the 'drive' in question, for a given theorist, is a drive to truth?*, one might object. But even in this case, the Nietzschean epistemologist is more deeply interested in the *drive* to truth than in truth abstracted from this drive. (See Appendix B.)

I wish to adopt many central features of Nietzsche's view for my own accounts of scientific knowledge and human understanding more broadly. By analogy to Nietzsche's claim that scientific theory and philosophy are (like art) expressive of their creators' basic drives, I conceive of objective scientific and philosophical theories as, ultimately, manifestations of elemental forces. My view is less psychological and less subjectively-oriented than Nietzsche's, however. Here the distinction between *force*, as I understand it, and Nietzschean *drives* or *will to power* is again crucial. Force does not strive towards or aim at any 'ends' or 'goals'. Force is just the objective exercise of power. Force is just the real ground of impact. I agree with Nietzsche that art, philosophy, and science can often be plausibly interpreted as objective expressions of

their human creators' basic psychological drives. But I insist that, at least with respect to the highest forms of human cultural production, this is not a fundamental level of analysis. Nietzsche himself recognizes this, to an extent, insofar as he offers robustly metaphysical characterizations of will to power—an all-encompassing drive-'psychological' ontology that is more an organicist theory of all-pervasive vital force than a theory of human or animal psychology, per se. Hence, at least in his most metaphysical moods, Nietzsche himself recognizes that human cultural products are essentially just expressions of *life*, construed as the the same will to power or drive to self-overcoming that he takes to be evident in all living things, prior to any 'psychology' in the more standard sense. In this light, I seek to further develop Nietzsche's naturalistic vision of human culture, by reinterpreting human culture as a manifestation of *force*, not of *vital force* or will to power. This raises a fundamental question: *What exactly does it mean for a scientific theory, artwork, or any other cultural form to be a 'manifestation' of force, and how is this diagnosis to be justified?*

I address this question at length below, in developing interrelated accounts of natural art and natural science. For now, though, let me return to the other point of difference indicated directly above: whereas Nietzsche's account presents human cultural products as expressions of *human creators'* basic drives or will to power, I am fundamentally concerned with the possibility of cultural forms that are aptly characterized as manifestations of higher and often entirely impersonal natural forces. This is the possibility of *objective*, rather than *subjective*, culture.

Human beings are clearly still centrally involved in the production of objective cultural forms, to the extent that they exist. Moreover, the production of objective culture also centrally involves human *creativity*—this creativity just requires receptivity to external reality in a way that modern 'expressive' theorists like Nietzsche tend to ignore, or at least under-emphasize. Nietzsche does at times highlight the possibility of receptivity to higher power, particularly in his account of 'Dionysian' de-individuation as a kind of ecstatic frenzy that dissolves the boundaries between individualized subjects and correspondingly affords primal insight into 'universal will'. But for Nietzsche this Dionysian mode of receptivity to higher power is directly opposed to the 'Apollonian' drive towards beautiful 'semblance' [*Schein*] that he associates with the plastic arts, heroic individuality, distinction between objects, and higher forms of theoretical contemplation. This leads Nietzsche to associate the 'artistic' knowledge of 'genuine philosophers' with *illusion*, *error*, *falsification*, and so forth, in a way that renders his account overly subjective and

epistemologically unsatisfactory. To pursue this point further would be a distraction, however.

At present, I simply wish to note another basic point of continuity between Nietzsche's account and my own. Namely, as we have seen, Nietzsche believes that our basic drives can manifest both in the form of 'higher culture' and as 'savage' natural impulse. Will to power is ontologically and evaluatively prior to the distinction between 'nature' and 'culture'. Likewise, I take *force* to be ontologically and evaluatively prior to the nature-culture opposition. Force does not 'aim' to manifest in the form of 'higher culture' as opposed to 'savage' impulse. Nor are 'high-cultural' manifestations of force *better* than 'unrefined' ones, generally speaking. Rather, the relative value of 'refined' and 'coarse' phenomena, just like anything else, is ultimately determined by the relative *degree or intensity of force* that they manifest. Again, I say this directly by analogy to Nietzsche's claim that “[w]hat determines rank, sets of rank, is only quanta of power, and nothing else” (*WP* 855), and that the “objective measure of value” is “[s]olely the quantum of enhanced and organized power” (*WP* 674).

Objective scientific knowledge is a formal manifestation of fundamental natural forces, in and through human beings. This raises several important questions: What exactly does it mean for an objective scientific theory or explanation to be a 'formal manifestation' of a basic natural force? What are specific examples of the kinds of 'basic natural forces' in question? And what is the value of human beings' objective scientific receptivity to elemental forces? For instance, does objective science have any value beyond or apart from that of the forces of which it is a formal manifestation? This relates to broader questions about the value of human beings, in a dynamistic worldview that locates ultimate value in higher forces that have no 'need' for us.

In order to address these questions, several phenomena must be further clarified. First, we must gain a deeper understanding of objectivity—of poetic objectivity, of scientific objectivity, and of their interrelation. Second, we must gain a deeper understanding of what makes a given force elemental or fundamental, both in general and in the empirical scientific context. Third, we must gain a deeper understanding of what scientific theories and explanations are. Fourth, we must gain a deeper understanding of how a given theory or explanation can be more or less aptly characterized as a manifestation of an elemental natural force. Here I will ultimately argue that objective scientific theories are *objectively valid fields* of elemental forces. Empirical scientific explanation is a structural manifestation of natural forces distinguished by virtue of their impact on observable phenomena. Physical scientific explanation is a species of scientific explanation,

which involves formally manifesting strictly intelligible forces with empirical impact—i.e. *physical forces* without sensory qualities or spatiotemporal properties, which produce observable phenomena ordered into strictly intelligible *physical structures* constituted by mathematical relations among measurable physical properties.

Again, it is a crucial conclusion of my argumentation that the higher forces 'expressed' in objective scientific theories need not be part of these theories' representational content. Rather, they dictate what these theories represent, and how. The 'expression' of higher natural forces thus grounds objective scientific representation, without necessarily being part of its objective contents. One cannot understand science without seeing that its grounds lie beyond its contents. This is perhaps related to the sense of 'disenchantment' [*Entzauberung*] that Max Weber famously linked to modernity. The *contents* of modern science are 'disenchanted' in a sense, insofar as science subordinates 'sense' to 'intellect' by treating sensory properties and observable phenomena as 'matter' to be extrinsically 'formed'. This bears on the difference between scientific cognition and aesthetic experience, as I elaborate further below. But the deeper grounds of modern science need not be disenchanted. Objective science provides a *non-depictive* way to apprehend elemental forces—by *using* them to explain, not by *beholding* them.

In light of this analysis, finally, I will return to the problem of creativity in human beings' objective scientific receptivity to fundamental natural forces, in the context of questioning the value of science. Again, an intuitive worry here at issue is that if we are only 'channeling' or 'canalizing' elemental natural forces in objective scientific inquiry, then this exercise may seem pointless—given that these forces already exist and have causal impact regardless of what we do. Here one must confront the anthropocentrism and hyper-individualism of modern liberal society head on. Notwithstanding the lip service that we pay to the importance of community, many of us in modern societies evidently cannot appreciate that our deeper value often derives from our participation in forms of collective life and social organization that are fundamentally indifferent to our status as 'autonomous individuals'. Likewise, notwithstanding the lip service that we pay to the importance of the broader natural world, many of us cannot appreciate that our deepest value might actually derive from our participation in totally impersonal phenomena—whether it be the ebb and flood of diurnal, seasonal, and epochal change; the growth and decay of all life; the incursion of vital force into inorganic nature; or the 'cold' order and precision of physical law.

All that said, insofar as we are real beings, we are forceful beings and not merely objects

for the outlet of impersonal forces. Some people are genuine personalities who influence the form of collective life, even if many more are only ever really objects for the outlet of pre-existing cultural forces. Of course, genuine personae, too, are bearers of culture and history—are socially determined. But they nevertheless also contend with the cultural forces by which they are impacted, and thus emerge as loci of force in their own right. Looking at humanity in broader context, likewise, we are objects for elemental natural forces' outlet or expression. We are objective appearances of underlying reality. We are beings in and through which elemental forces objectively appear. Humans are objects for higher force. And our higher forms of scientific activity are thus objective appearances of basic natural forces. But we are also loci of force in our own right. We are beings *for* whom elemental forces appear, whether directly (as in poetry) or indirectly (as in science). We are subjects for the appearance of elemental forces (in poetry), or at least (in science) the appearance of their objective impact. Hence, as humans we are not essentially self-conscious beings. Rather, we are beings with *objective experience*.

With this in mind, I develop an account of science as involving a creative distillation or intensifying simplification of empirical phenomena. I contrast this kind of *objective abstraction* against the sort of rationalistic abstraction that I take idealists to prioritize. I argue that objective abstraction is valuable as a human mode of force, despite yielding *objects that have no mind-independent reality*—such as the empirical contents of scientific representation. In objective scientific inquiry we thus *focalize* elemental forces in a way that they are not focalized apart from us. This abstractive act literally *is* elemental natural force, manifesting in and through us. But it is *also* a genuinely distinct and essentially human mode of outlet for these higher forces. My analysis of science thus bears noteworthy resemblance to Hippolyte Taine's account of art:

In nature the character is only dominant; the concern in art is to make it dominating. This character forms the real object; but it does not form it completely. In its effectiveness it is inhibited by the appearance of other causes. It is unable to stamp itself upon the object in a perfectly clear and visible imprint. Man senses this gap—and in filling it he invents art.⁴¹⁶

Here one might also recall Emerson's claim that art is “nature passed through the alembic of man,”⁴¹⁷ as well as similar formulations in Goethe and Nietzsche. Although characterizations like

⁴¹⁶*Philosophie de l'art*. Quoted in Cassirer 2000, 84. The translation is Cassirer's.

⁴¹⁷Emerson 1983, 18–19. Regarding the depth of Emerson's impact on Nietzsche, see e.g. Brobjer 2008, 23.

this are often associated with philosophical idealism, I believe that they can be naturalized. The 'dominant character' that Taine notes need not be an *ideal* or *rational* form. Rather, it is more plausibly viewed as a field of higher forces that do exist naturally, but always only alongside the weaker forces that ground less fundamental things' reality. By scientifically representing nature in the image of explanatorily basic structures, we artificially amplify natural causal hierarchies and thereby exert cognitive force on inessential objects.

10. Aesthetic Objectivity as a Sensuous Presentation of the Elemental

Aesthetic objectivity is a direct experience of elemental reality in the mode of *sensory force*. Two basic loci of sensory force especially familiar from aesthetic theory are the *beautiful* and the *sublime*. Sensory force manifests through beauty as the direct appearance of agonistic form, and in experiences of the sublime as the overwhelming impact of higher force. Beauty and sublimity correspond roughly to the two basic modes of interaction discussed above, agon and hierarchy, insofar as both can involve the impact of *sensory* forces on perceiving subjects. (In analyzing scientific objectivity in Chapter IV, I will turn at length to modes of force that are *strictly intelligible*, in the sense of having no sensory qualities or other imaginatively 'picturable' modes of impact.) Beauty involves the sensory appearance of agon, i.e. the aesthetic impact of dynamic relations among relatively well-matched loci of sensory force. And sublimity involves the overwhelming aesthetic impact of radically-intensified sensory force, i.e. subjects' radical determination by elemental sensory force. I will elaborate both of these claims below, of course.

For now, it should be noted that these initial characterizations of beauty and sublimity are quite narrowly focused on sensory perception. This is intentional, in part insofar as I wish to distinguish properly aesthetic phenomena—i.e. those related to *aesthesis* or sensory perception—from other ways of apprehending force which simply *appear* to be aesthetic, given the triumph of moralized standards of evaluation. That is, given the pervasive influence of moralism on modern conceptions of ethical and political value, any genuine affirmation of amoral force, including amoral sensory force, is now likely to be diagnosed as merely 'aesthetic'—if it is not simply dismissed as evil. Amoral value judgments often seem 'safe' when relegated to the aesthetic domain, even to people who are unwilling to frankly value amoral force in the ethical or political domain. Nietzsche also recognized this, I believe. At least in his mature works, then,

he was not truly the 'aestheticist' that some claim he was.⁴¹⁸ But he did know that aesthetics remains an intuitive inroad into appreciating the value of amoral power. Again, this is not because all affirmation of force, or all feelings of one's own power, are truly aesthetic. It is simply because aesthetic value is one (but only one) genuine way of valuing force, which remains intuitive even to modern people who view aesthetic value as ethically and politically inert, or at least as always subordinate to morality.

Even given this fairly strict focus on *sensory* force, however, I certainly also allow that objective aesthetic experience sometimes involves feelings of *affective force* or *passion*, and perhaps even always does so. Thus, whereas beauty elicits focused feelings of love, sublimity gives rise to feelings of all-consuming infatuation and godlike indifference. As against the prophetic clarity of Cassandra's sadness, the sublime manifests in totalizing despair. To Helen's radiant beauty and the noble restraint of the Achaean army, the sublime opposes Caspar David Friedrich's monk on a barren shore beneath endless gray sky, staring out onto the dark sea—but also the Maenads' bacchanalian frenzy, the unbridled excess of Achilles' rage, and the Trojans' advance with “clamor and battle-shout,” like a flight of cranes “bearing slaughter and fate” with the beat of their wings,⁴¹⁹ that maelstrom of fury, awe, primal terror, sexual power, and ecstatic joy borne of identification with the ebb, flood, endless chaos, and eternal order of titanic forces.

Moreover, truly objective aesthetic experiences of sensory force always have a *mind-independent ground*. Sensory force is not just a 'sensory impression' or 'mental state'. Sensory force is also the external *ground* of conscious experiences of sensory quality. Hence, we may distinguish between mind-independent loci of *sensory force* and mind-dependent *aesthetic force* construed as the sensory impact of mind-independent sensory forces on perceiving subjects. This distinction can also be referred to as that between *objective* and *subjective* sensory force. For instance, imagine experiencing the visceral massiveness or heaviness of stone in the ruins of an ancient Greek temple. The stone itself functions a locus of objective sensory force: the force of its massiveness and heaviness, construed as mind-independent powers. But insofar as we apprehend this massiveness, it also functions as a purely aesthetic or subjective sensory force.

418E.g. see Nehamas 1985. Cf. Leiter 1992.

419*The Illiad* Book III. Schiller appeals to this example in a related context, but with a very different reading, in his *Letters on the Aesthetic Education of Man*: “[...]The lawless leap of joy becomes a dance, the shapeless gesture a graceful and harmonious miming speech; the confused noises of perception unfold themselves, begin to obey a rhythm and weld themselves into song. While the Trojan host with shrill cries storms like a flight of cranes across the battlefield, the Greek army approaches quietly, with noble tread. There we see only the arrogance of blind strength, here the triumph of form and the simply majesty of law” (Letter 27; Schiller 2014, 107-108).

The fact that objective aesthetic experience is of external things, and not just one's own feelings or any other mental states, does not mean that it is possible to 'prove' that something is beautiful (etc.) simply by pointing to certain determinate features that it has. As Kant says, beauty involves a 'freedom from concepts' that makes 'proofs' of this sort impossible. (The same goes for the sublime, and for every other locus of genuinely aesthetic value.) Nevertheless, in working to ground our aesthetic judgments *objectively* and not merely *subjectively*, we must describe a given object's aesthetically-salient features, and not just the way that it makes us feel. Note that this sort of aesthetic *objectivity* does not entail the *universal validity* of judgments of beauty or any other kind of aesthetic value. Objective validity is not universal validity.

The following discussion of aesthetic objectivity should help to further clarify the categories of *agon* and *hierarchy* introduced above. Hence, this aesthetic discussion will help to further motivate and clarify my basic dynamistic thesis that the natural world is just an order of interacting forces—including interacting sensory forces. This will evince the explanatory power of the dynamistic ontology here on offer, insofar as I show that aesthetic experience, as one among several basic dimensions of human experience more broadly, can be plausibly and fruitfully analyzed in terms of a basic metaphysics and ontology of *force*. The discussion below will also provide further intellectual historical context for my own notion of force, based in a deeper examination of Kantian and post-Kantian aesthetic theory. I will demonstrate meaningful continuity, as well as discontinuity, between broadly Kantian theories of 'free play' and my own notion of *agon*. Likewise, I will indicate conceptual connections and disjuncture between my notion of hierarchy and various aspects of modern aesthetic theory.

Finally, this discussion of aesthetic experience contributes to the overall contrast that I am working to establish, between poetic and scientific modes of objectivity. I take aesthetic objectivity to be a species of poetic objectivity, along with other phenomena like objective artistic creativity and religious experience. Over the course of this chapter, I will proceed from focus on the purely sensory aspect of aesthetic experience, to a broader account of other modes of mental and affective activity involved in objective aesthetic experience, to a more 'creator-side' emphasis on objectivity in artistic activity, and ultimately (in the final section) to a still-broader account of poetic objectivity. Again, my basic contention is that poetic objectivity and scientific objectivity are perspectival duals. Both involve outwardness, in the sense of receptivity to elemental reality. But in objective poetic understanding we achieve this outwardness through

direct experiences *of* elemental reality, *from* the standpoint of lesser orders of being. In objective scientific understanding, by contrast, we achieve outwardness through direct experiences *of* objective phenomena, *from* the standpoint of elemental reality or higher force. In the spirit of poetic objectivity we may thus directly behold the gods or their impact on the natural world, and even consciously act under their influence as conduits for divine power. Or, in aesthetic experience, we may behold the elemental in a more abstract mode—as pure sensory force, which drives us into true passion and affective force, if not into artistic creativity.

Theories of aesthetic experience vary widely, of course, as we have already seen above. Base hedonists claim that beautiful things, as such, produce pleasant feelings. Schopenhauerian ascetics insist that aesthetic contemplation provides momentary release from the endless suffering of will, construed in terms of essential lack or inescapable alienation from the objects of one's desire. Kantians distinguish sharply between (on the one hand) 'interested' pleasure in both merely 'agreeable' sensations and rationally-desirable goods and (on the other) 'disinterested' pleasure in open-ended reflection upon beautiful 'form'. Kantian *theoretical rationalists* in turn insist that this open-ended 'free play' of cognitive faculties embodies the reciprocal relationship between powers of sensible 'receptivity' and rational 'spontaneity' that grounds the possibility of theoretical 'cognition in general'. Broadly Kantian *autonomists* like Schiller emphasize the connection between aesthetic experience and practical reason, claiming that Kantian free play between sensory and rational faculties is a state of *freedom* wherein we first spiritualize our merely animal needs by subsuming them under universal laws (of beauty), thus preparing ourselves for higher rational self-determination in accordance with universal laws of morality. Nietzsche claims that good art elicits a state of *frenzy* or *intoxication* [*Rausch*] opposed to both petty melodramatic affect and rationalistic 'disinterest', and suggests that this frenzy or intoxication is also the state that gives rise to artistic creation.

Here one cannot remain neutral, muddy though the waters may appear. Perhaps it is unclear, in particular, how one can arbitrate between competing theories of aesthetic experience that are all so clearly informed by their authors' distinctive tastes and corresponding conceptions of paradigmatic aesthetic phenomenology. But this 'personal' influence is consistent with all but the most ham-handedly rationalistic approaches to aesthetic inquiry. Like artistic practice itself, aesthetic theory is and should be permeated by style. This entails neither that all aesthetic sensibilities are equally good nor that all theories of aesthetic experience are equally plausible. It

does suggest, however, that the aesthetic theorist inevitably takes a stand *poetically* and not just *analytically*—a stand not merely in the name of truth about beauty and sublimity, that is, but also in the name of beauty and sublimity themselves. There are no 'aesthetically neutral' facts about the nature of beauty, sublimity, or aesthetic value. There is only objective aesthetic insight—the theorist's creative determination by elemental sensory force, manifesting as his aesthetic theory.

11. Sensory Force, Sublime Impact, and Beautiful Form⁴²⁰

11.1. Can a basic sensory property like a bare color or tone be beautiful? Some say no. For instance, Kant claims that experiences of beauty are always elicited by the spatiotemporal “shape or play” of sensations like colors or tones—by sensible 'form', as he says, never by the sensory 'matter' it comprises.⁴²¹ Kant's brand of aesthetic formalism hence involves a structuralist analysis of beauty. This is somewhat atypical: aesthetic or artistic 'formalism' now more often refers to the view that only properties available via sensory perception, or things' appearances, bear directly on judgments of aesthetic or artistic value. Colors and tones are 'formal' features, in this sense. Thus 'form' is often opposed to cognitive or expressive '*content*', not sensory *matter*.⁴²²

The stark contrast that Kant draws between beautiful form and sensory matter may seem implausible. Indeed, Heidegger suggests that it is precisely in art that “metals come to flitter and shimmer, colors to glow, tones to sing, the word to speak.”⁴²³ Likewise, the stone of the Greek temple first “comes to bear and rest and so first becomes rock” in its incorporation into the 'temple-work'.⁴²⁴ Hence, the rock in the temple is *set forth*—not just *used up*, as it is in fashioning a mere stone *tool*.⁴²⁵ “To be sure,” Heidegger allows, “the painter also uses pigment, but in such a

⁴²⁰The following section is a draft of an article that has been accepted for publication by Oxford University Press in the *British Journal of Aesthetics*, reproduced by permission of Oxford University Press: <https://global.oup.com/>. This is the un-refereed Author's Original Version (AOV).

⁴²¹*Kritik der Urteilskraft (KU)* 5:224–5. I use the Guyer and Matthews translation (Kant 2000). Kant qualifies that the 'purity' of a 'simple color' can be taken as a *formal* property ('uniformity'); hence, he allows that a 'simple color' can be beautiful *qua formal*.

⁴²²For instances of this more standard 'formalism', see e.g. Bell 1913 (but see note 438 below); Fry 1918; Hanslick 1986; Kivy 1990 and 1993. Cf. Walton 1970; Binkley 1970; Ekman 1970; Danto 1981, 1986, 1997; and Carroll 2001. For formalism about nature, not art, see e.g. Zangwill 2001, 2005. Cf. Carlson 1979; Parsons 2004; Parsons and Carlson 2004. For a 'moderate' formalism, see Zangwill 2001, ch. 4–8. See also Thomson-Jones' (2005) argument that aesthetic cognitivism is compatible with the 'inseparability' of artistic form and content.

⁴²³Heidegger 1971, 46.

⁴²⁴Heidegger 1971, 46.

⁴²⁵Heidegger uses the term 'equipment' [*das Zeug*]. For its broader context in his thought, see Dreyfus 1992.

way that color is not used up but rather only now comes to shine forth.”⁴²⁶ In Heidegger's theory of art, then, 'colors' and 'tones' take on a very different quality than they do for Kant. Contra Kant, moreover, it is hard to deny the intuitive plausibility of Heidegger's descriptions. Sensuous 'material' is evidently elevated to newfound dignity and splendor through its incorporation into great artworks. Thus, Kant's structuralist analysis of beauty may seem to be radically misguided.

But, I argue below, a loosely Kantian association of beauty with structural form can be productively synthesized with a broadly Heideggerian vision of 'glowing' colors and 'singing' tones as loci of inherent aesthetic value. The resultant view depends upon clearly distinguishing beauty from other kinds of aesthetic value, and is surprisingly plausible: Pure 'glowing' colors and 'singing' tones are never *beautiful*, in themselves. But they are sensory *forces*—not mere 'matter'—with real *aesthetic impact*. The simplest sensory experience of sublimity is just the overwhelming impact of radically intensified sensory forces, similar in kind if not degree to the individual 'singing' tones in a beautiful melody. In turn, sensible beauty is plausibly restricted to *structures of sensory force*. More specifically, I argue that purely sensible beauty is just the holistic impact of *agonistic* interactions among sensory forces. By 'agon', I mean tension among *well-matched* forces. Real friendship and real enmity are both forms of agon, for instance, as is healthy romantic love. I provide artistic examples of agon, below. And I show how my emphasis on aesthetic agon is related to Kant's theory of 'free play', yet without relying on Kant's traditionalistic theory of humans as essentially 'sensuous-rational' beings.

Agon among sensory forces is to be contrasted against aesthetic *hierarchy*, or dynamic interaction between loci of relatively *unequal* aesthetic impact. For instance, consider the subsumption of some musical elements under others, as mere accompaniment to a dominant melody or lead voice. I argue that hierarchically-interacting sensory forces elicit experiences that are more similar—in quality if not necessarily in degree—to the sublime impact of radically intensified but 'formless' sensory force, than to the experience of beauty.

Hence, I propose a novel model of the relationship between beauty and sublimity. Note that I am not denying the potential relevance of affective states or 'expressive' content to aesthetic experience. Genuinely aesthetic experiences plausibly vary in the degree to which they involve less purely 'sensory' modes of activity, whether this be imaginative, affective, or narrowly 'cognitive'. For instance, the sound of nails scraping on a chalkboard may be distasteful

⁴²⁶Heidegger 1971, 47.

apart from any imaginative associations it elicits. Correspondingly, the saturated red or orange of the sky during a sunset may be aesthetically impactful apart from any 'ideas' it invokes—even if some experiences of the sublime do involve the “*sensible rendering of moral ideas*,” as Kant claims.⁴²⁷ Thus I simply aim to describe a purely sensory *aspect* of aesthetic experience. My basic goal is to elaborate, historically contextualize, and demonstrate the explanatory power of this novel account of the relationship between beauty and sublimity, mediated by sensory force.

11.2. It will be helpful to situate my view in relation to more standard varieties of aesthetic or artistic 'formalism'. But to that end, in this section I will first briefly elaborate some of my central claims about sensory force, vis-à-vis beauty and sublimity, and provide concrete artistic examples that I take to provide intuitive phenomenological motivation for these claims. In the next section, I will then contrast my account against more standard kinds of 'formalism'. In so doing, I will also explain how several different senses of the term 'form' are interrelated. Finally, I will elaborate the relationship between my account and the deeper systematic motivation for Kant's formalism about beauty, which concerns his fairly traditionalistic theory of human nature.

At present, I will proceed by way of response to a basic question: If my appeal to 'aesthetic impact' is specifically intended to encompass the effect of sensory forces like Heidegger's 'glowing' colors and 'singing' tones, then why do I not just allow that aesthetic impact is a kind of *beauty*? First, note that beauty is not the only aesthetic value. Hence, even if a thing like a 'singing' tone clearly has aesthetic value, this does not provide evidence that it is beautiful. Likewise, if one is told that a given thing is an animal, this does not provide evidence that it is a human, rather than a dog or a lizard. Beauty is just one species of aesthetic value.

Second, consider that although 'glowing' colors (etc.) can evidently be aesthetically-significant aspects of beautiful things, it does not follow that these sensory forces are beautiful in themselves. For instance, the chemical bonds between individual molecules in a liquid are directly relevant to the liquidity of the ensemble; but none of the individual molecules is liquid, in itself. Liquidity is thus an *emergent* property of the collection of molecules, as some metaphysicians and philosophers of science put it.⁴²⁸ Likewise, I claim that purely sensible beauty is an emergent property of an ensemble of sensory forces, grounded in their interactions

⁴²⁷*KU* 5:356. See also *KU* 5:257.

⁴²⁸On emergence, see e.g. Kim 1999; cf. Shoemaker 2002.

with one another. Here it is helpful to compare John Dewey's account of “the intimacy of the relations that hold the parts together,” which he calls “[t]he characteristic of artistic design”: “[a] work of art is poor in the degree in which [these relations] exist in separation, as in a novel wherein plot—the design—is felt to be superimposed upon incidents and characters instead of being their dynamic relations to one another.”⁴²⁹ This is how I envision the relation between sensory force and beauty: a purely sensible beautiful form *just is* a dynamic interaction among the sensory forces it comprises. Indeed, this is one reason why these constitutive parts are aptly termed sensory *forces*: 'glowing' colors and 'singing' tones are essentially characterized both by their power to *impact* perceiving subjects, and by their power to *interact* with other sensory forces.

Third, I claim that artworks involving nothing but 'glowing colors', 'clanging tones', and so forth, *are not beautiful*. Note that one need not necessarily agree that a particular work is or is not beautiful, in order to find this abstract point plausible. For instance, consider Olafur Eliasson's *Your rainbow panorama* (2006-2011), a large, elevated circular track of about 50 meters in diameter, encased on all sides in intensely color-saturated monochromatic glass, which gradually changes in hue along the circumference—such that a viewer walking around the track passes first through a region in which everything appears intensely red (e.g.), then orange, then yellow, green, etc. The view from any given point inside this structure is thus surreally monochromatic, imbuing the world with an aesthetically-forceful 'glow' if ever there was one. And yet the world thus viewed, as a formless sea of a singular 'glowing color', is plausibly less beautiful than sublime. Or, more precisely, perhaps it is simply aesthetically impactful—an intensified version of the experience of being impacted by a 'glowing' color in a painting, for instance, even if it does not rise to the level of the sublime. Likewise, imagine a musical work consisting in a single prolonged blast on a giant horn. Such a pure 'singing' (or 'blaring') tone may certainly be aesthetically striking, rousing, or awesome. But I contend that it would nevertheless be far from plausibly beautiful. So too, finally, consider that around sunset refracted reddish or purple hues in the sky sometimes induce a similar color in vast swaths of the landscape. But the resulting experience as of an all-encompassing color or hue—aptly termed a 'formless' sensory force—is more plausibly related to feelings of the sublime, than to beauty.

Respecting this intuitive phenomenological distinction, therefore, I am referring to the

⁴²⁹Dewey 1934/1980, 121.

effect of 'glowing' colors, 'singing' tones, etc. as the feeling of *aesthetic impact*. This in turn plausibly becomes a feeling of the overwhelming aesthetic impact of the sublime, when it is radically intensified. (There may well be other grounds of the sublime besides this one.) And both must be distinguished from the distinctive feeling elicited by beauty, although I claim that purely sensory beauty is an emergent property of dynamic interactions among sensory forces. Thus, on my view, the simplest purely sensory experience of the sublime is just an intensified version of the same kind of aesthetic impact that is elicited by the individual 'glowing' colors or 'singing' tones in a beautiful painting or song.

Sublimity is not essentially related to structure, in the way that beauty is. The sublimity of a 'formless' field of intense light or sound evidences this point. In this context, it also helps to observe the phenomenological relation between feelings of the sublime and the feeling elicited by musical drones, or by certain kinds of abstract art that privilege 'glowing' colors and impenetrably-simple geometrical shapes—i.e. shapes that do not impact us as internally-complex forms. The latter two phenomena are arguably exemplified in some Abstract Expressionist paintings, like Mark Rothko's *No. 14, 1960*, as well as in Minimalist sculptures like Tony Smith's *Die* (1962). Note that some internally-complex forms may (as such) elicit true experiences of sublimity—e.g. consider looking out at endless perfectly-straight rows of plants on a huge industrial farm—even if sublimity is not essentially related to internal structure.

Recall that not all structural configurations of sensory force are beautiful, on my view. Rather, sensible beauty is grounded in *agonistic* interaction among sensory forces—i.e., in tension between well-matched sensory forces, which we experience as *beautiful form*. This is by contrast to *hierarchical* interactions among unequal sensory forces, which elicit feelings of what I will call *aesthetic order*. A set of musical examples will help to illustrate this point.

Harmony vs. Counterpoint: Music structured by contrapuntal motion has strongly independent, individually self-standing melodic lines that nevertheless seem to 'play' back and forth off of one another to create a coherent aesthetic whole. Canonically, for example, consider the relationship between lower and higher voices in Bach's *Art of Fugue*. Similarly, one may think of the dynamic tension between drums, bass, piano, and 'lead' horn instrument in much post-bop jazz, as in Miles Davis's 'Agitation' (1965). This style of music is of course heavily driven by improvisational soloing, which hence naturally situates the solo voice as a focal point for collective melodic and rhythmic development. But in the best small-combo jazz, the soloist

nevertheless remains continually and intensely responsive to the rhythmic, melodic, and harmonic figurations of his fellow musicians, who are themselves constantly improvising and stepping alternately to the fore and to the back of the collective performance even within the context of their 'accompanying' role. In this sense, then, the internal dynamic tension of an elite jazz combo can be meaningfully subsumed along with the contrapuntal motion of classical fugues under a broader category of counterpoint. And counterpoint thus construed is related to agonistic form: the interacting voices are relatively equal in power of aesthetic impact.

By contrast, *harmony* functions as a locus of aesthetic order insofar as it involves the radical subsumption of some musical elements under others in the mode of genuine accompaniment to a sonically-dominant melody or lead voice. Here consider the 'harmonious' relationship between dominant lead voice and rhythmic accompaniment during John Coltrane's initial melodic articulation in 'Naima', a ballad dedicated to his first wife. Notably, the fact that small-combo jazz performance is often driven more by collective improvisation over fixed chord progressions, than by pre-planned performance of melodic themes, helps to explain why the relation between solo instrument and rhythm section in this music is more contrapuntal than is the relation between solo and accompaniment in many classical compositional forms.

Yet 'harmony' is also intuitively related, not to hierarchy or unilateral determination, but rather precisely to balance, equality, and symmetry. In the musical context, harmony is therefore opposed not only to counterpoint, but also to *dissonance* and to sonic *imbalance*. Furthermore, musical harmony is naively thought to be *beautiful*, by contrast to 'ugly' sonic dissonance. This apparently stands in tension with the association I have drawn above, between harmony and hierarchical aesthetic order, as opposed to beautiful agonistic form. But this tension is merely apparent, grounded in equivocation between 'harmony' as opposed to counterpoint, and 'harmony' as opposed to dissonance. Harmony as opposed to dissonance does indeed involve a mode of beautiful agonistic form. Yet dissonance, too, can be a locus of beautiful agonistic form. Of course, uncontrolled dissonance is not beautiful. But when properly deployed, dissonant harmonic relations may certainly constitute agonistic forms. Indeed, my notion of an agonistic form, or system of agonistic relations among forces that itself functions as a coherent locus of force, captures the aesthetic unity of harmony and dissonance. Both harmony and dissonance, insofar as they are beautiful, involve systems of dynamic tension among well-matched-sensory forces, which collectively function as coherent loci of aesthetic impact. The relation between

beautiful harmony and beautiful dissonance is thus at root that between (harmonious) *static equilibria* and (dissonant) *dynamic equilibria* among well-matched forces.

This account also helps to explain why the aesthetic impact of hierarchically-interacting loci of sensory force is qualitatively (not necessarily quantitatively) similar to the overwhelming impact of the sublime. Both essentially involve aesthetic hierarchy. In experiences of sublimity grounded in radically-intensified but 'formless' sensory force, a perceiving subject first-personally experiences his own hierarchical determination by sensory force. In the case of hierarchy within a given aesthetic object (e.g. the subordination of rhythmic accompaniment to a lead melodic voice), a subject instead third-personally apprehends hierarchical determination of sensory force by sensory force. In either case, then, the subject apprehends sensory force in the mode of asymmetrical impact. This is not to say that experiences of the sublime are *the same* as experiences of hierarchical aesthetic order within a given artwork or natural phenomenon. But it does help to explain their phenomenological proximity.

Finally, note that the distinctions between aesthetic agon, aesthetic order, and 'formless' sensory force drawn above should not be taken as rigid. Rather, they are contrasting analytical categories that can often be fruitfully applied in many distinct ways to a given artwork or natural phenomenon. Here consider by analogy Nietzsche's opposition between 'Apolline' and 'Dionysian' art-impulses [*Kunsttriebe*].⁴³⁰ In *The Birth of Tragedy* (1872), Nietzsche posits as the fundamental level of reality a "universal will" or "world-will" [*Weltwillens*] (BT 17, 21), which he also identifies as "nature" (BT 2, 4, 8) or "primordial being" [*Urwesen*] (BT 17). Here his view is evidently influenced by the Schopenhauerian distinction between 'will' and 'representation'—which itself descends from the Kantian opposition between 'noumenal' and 'phenomenal' reality, or 'things in themselves' as they are opposed to mere 'appearances' or 'objects' of experience. In turn, on Nietzsche's view this universal will is the subject or locus of two basic 'artistic' drives: a drive towards individuation and beautiful semblance [*Schein*] that he associates with Apollo as a god of light, prophecy, the "helping and healing powers of nature in sleep and dream," clarity of form, and the "wise calm" [*weisheitsvolle Ruhe*] and "freedom from wilder impulses" characteristic of all "image-making energies" [*bildnerischen Kräfte*] (BT 1); and a drive towards de-individuation and ecstatic identification with 'titanic' and 'barbaric' forces

⁴³⁰Nietzsche calls the Apolline and Dionysian "two interwoven artistic impulses [*Kunsttriebe*]" (BT 12). Regarding the former, he uses the German '*apollinische*', which Walter Kaufmann translates as 'Apollinian', and other translators commonly translate as 'Apolline'.

of nature (*BT 4*)⁴³¹ whereby universal will “seeks to destroy the individual and redeem him by a mystic feeling of oneness” (*BT 2*), which Nietzsche associates with Dionysus as a god of drunken revelry, fertility, ritual madness, and unrestrained sensuality. The Apolline drive to beautiful semblance manifests in broadly 'image'-based modes of artistic creation, which are loosely 'objective' in the sense that the Apolline artist both orients herself towards clarity of form and remains external to the crystalline appearances that she hence lays out for her own or others' aesthetic contemplation—“that calm, unmoved contemplation which sees the images *before* its wide-open eyes” (*BT 12*). Sculpture (*BT 1*), the plastic arts more broadly (*BT 16*), and Homeric poetry—given “the clarity and firmness of epic form” (*BT 8*)—are thus quintessentially Apolline;⁴³² while “imageless” (*BT 1*) arts like those of music, dance, acting, and lyric poetry are quintessentially Dionysian.⁴³³ Here Nietzsche invokes the “*dramatic* proto-phenomenon” of “see[ing] oneself transformed before one's own eyes and [beginning] to act as if one had actually entered into another body” (*BT 8*). This sort of Dionysian “magic transformation” (*BT 7*) is to be directly contrasted against the Apolline “rhapsodist who does not become fused with his images but, like a painter, sees them outside himself as objects of contemplation” (*BT 8*).⁴³⁴

However, Nietzsche does not flatfootedly identify particular artistic media as univocally 'Apolline' or 'Dionysian'. For instance, he allows that music can be an “Apolline art” insofar as it is known “only as the wave beat of rhythm,” as opposed to “the emotional power of the tone, the

431 “Apollo, as ethical deity, exacts measure of his disciples, and, to be able to attain it, he requires self-knowledge. And so, side by side with the aesthetic necessity for beauty, there occur the demands 'know thyself' and 'nothing in excess'; consequently overweening pride and excess are regarded as the truly hostile demons of the non-Apolline sphere, hence as characteristics of the pre-Apolline age—that of the Titans; and of the extra-Apolline world—that of the barbarians. Because of his titanic love for man, Prometheus must be torn to pieces by vultures; because of his excessive wisdom, which could solve the riddle of the Sphinx, Oedipus must be plunged into a bewildering vortex of crime. Thus did the Delphic god interpret the Greek past. The effects wrought by the *Dionysian* also seemed 'titanic' and 'barbaric' to the Apolline Greek; while at the same time he could not conceal from himself that he too, was inwardly related to these overthrown Titans and heroes” (*BT 4*).

432 “The Apolline frenzy [*Rausch*] excites the eye above all, so that it gains the power of vision. The painter, the sculptor, the epic poet are visionaries par excellence” (*TI* “Skirmishes” 10).

433 These art forms are all discussed in *The Birth of Tragedy*, and explicitly characterized as Dionysian. And in this light: “The actor, the mime, the dancer, the musician, and the lyric poet are basically related in the instincts and, at bottom, one—but gradually they have become specialized and separated from each other, even to the point of mutual opposition. The lyric poet remained united with the musician for the longest time; the actor, with the dancer” (*TI* “Skirmishes” 11).

434 Similarly: “The dithyramb is thus essentially different from all other choral odes. The virgins who proceed solemnly to the temple of Apollo, laurel branches in their hands, singing a processional hymn, remain what they are and retain their civic names: the dithyrambic chorus is a chorus of transformed characters whose civic past and social status have been totally forgotten: they have become timeless servants of their god who live outside the spheres of society. All the other choral lyric poetry of the Hellenes is merely a tremendous intensification of the Apolline solo singer, while in the dithyramb we confront a community of unconscious actors who consider themselves and one another transformed” (*BT 8*).

uniform flow of the melody, and the utterly incomparable world of harmony” (BT 2).⁴³⁵ And at a still higher level of interpretive sophistication, he presents lyric poetry⁴³⁶ as an Apolline “*symbolic dream image*” of “pure primordial pain and its primordial re-echoing [in the activity of the Dionysian musician]” (BT 5). Lyric poetry is in other words “the imitative fulguration [*Effulguration*] of music in images and concepts,” or the *appearance* of “all nature, and himself in it, as willing, as desiring, as eternal longing” (BT 6). In this way, the lyric poet offers a premonition of the hybrid “Dionysian-Apolline genius and its art product” (BT 5) that Nietzsche takes to reach its apotheosis in Attic tragedy (BT 5).⁴³⁷

Like Nietzsche's opposition between the Dionysian and the Apolline, then, my categories of 'formless force', 'agon', and 'hierarchy' are most helpfully viewed as *relational* rather than *absolute*. That is, in the same way that Nietzsche identifies music broadly speaking as Dionysian and the plastic arts as Apolline, but then still differentiates melody and rhythm as distinctively Dionysian and Apolline aspects within music itself, so too I insist that my own categories are best deployed as tools for unearthing and distilling aesthetically salient characteristics or tendencies within a given artwork, genre, medium, natural phenomenon, etc. Hence, that the agon-hierarchy distinction can be deployed in different ways with respect to a given aesthetic object, and then reapplied in a loosely 'fractal' manner within each of the oppositional pairings it makes salient, should be viewed as a *virtue* or *strength* of my account, not a flaw or limitation.

In this light, for instance, Nietzsche's association of melody with the Dionysian and rhythm with the Apolline makes perfect sense, and I would endorse a parallel association of melody with 'formless' force and rhythm with 'dynamic form'. Here consider that in many cases melody seems to 'flow' in time as an indivisible unity, whereas rhythm is more conspicuously constituted by the configuration of discrete 'units' or elements in time. Correlatively, melody construed as a 'flowing' indivisible unity or simple entity is rightly seen as a 'formless' *force*, which we do not *behold* as an 'image' but rather *feel* immediately as pure impact. However, pursuant to the above point about the 'relational' or contextual character of these categories, it

435More fully: “If music, as it would seem, had been known previously as an Apolline art, it was so, strictly speaking, only as the wave beat of thym, whose formative power was developed for the representation of Apolline states. The music of Apollo was Doric architectonics in tones, but in tones that were merely suggestive, such as those of the cithara. The very element which forms the essence of Dionysian music (and hence of music in general) is carefully excluded as un-Apolline—namely, the emotional power of the tone, the uniform flow of the melody, and the utterly incomparable world of harmony” (BT 2).

436Nietzsche takes Archilochus (c. 680-645 BC) as his exemplary lyric poet.

437“[...]image sparks, lyrical poems, which in their highest development are called tragedies and dramatic dithyrambos” (BT 5).

should be noted that rhythm can *also* function as 'formless' force, and melody as dynamic form. To the former point, consider a driving drum beat that one again does not behold as an 'image', but rather viscerally feels as a force or immediately-impactful motive power. To the point that melody can also function as dynamic form, consider melody not as it is opposed either to rhythm or to accompaniment, but rather to the pure *tone* or *pitch*. Here, obviously, melody emerges as a *formal* structure: a configuration of tones or pitches in time, or of pure timbre in both time and 'frequency- or pitch-space'. In the case of playing a piano, for example, one must choose both which keys to press and when to do so; melody, in turn, evidently arises from the combination of both sorts of choices. Thus the paradigmatic aesthetic function of melody in relation to rhythm is that of 'formless' force, whereas in relation to tone it is that of dynamic form. Yet note, finally, that certain musical compositions highlight one or the other of these aesthetic functions of melody. That is, the melodic character of a given musical work may be relatively 'formal'—here think, for example, of a jarring and fragmented piece of modernist music like Anton Webern's *Variations for piano, op. 27* (1936) or Schönberg's *Five Pieces for Piano, op. 27* (1920-23). But other compositions deploy melody in a more 'forceful' way—as a Nietzschean example of such relatively 'formless' melodic force, consider Wagner's operatic cycle, *Der Ring des Nibelungen*.

11.3. With this intuitive motivation in tow, it now bears further elaborating that the broadly Kantian notion of 'form' as *relational structure*, which I emphasize, is not the only salient notion of 'form' in aesthetics.⁴³⁸ The English *form* shares a common set of denotations with the Latin *forma* and the Greek *morphe* and *eidōs*: all denote (1) *appearance*, especially in the sense of *outward* or *sensible* appearance—hence, the traditional association between form and *aesthetics* construed as *epistēmē aisthetikē* or the science of *aisthēsis* (perception, and especially sensory perception);⁴³⁹ (2) *shape, configuration, or structure*; (3) *kind or type*; and (4) *shapeliness* or *beauty* itself.⁴⁴⁰ I am placing primary emphasis on (2), and secondary emphasis on (1): I claim that purely sensible beauty only inheres in *intuitable relational structure among*

438Note that Clive Bell defines 'Significant Form' as “[t]hese relations and combinations of lines and colours, these aesthetically moving forms” (Bell 1913, 8). This suggests an opposition between form and sensory matter, not 'content'. However, Bell's appeal to 'lines' (qua spatiotemporal structures) complicates this analysis. Both the '*form-matter*' and '*form-content*' distinctions are plausibly salient, for Bell. This combination of distinctions is typical of many post-Kantian theories of art emphasizing 'expressive form'—e.g. see Langer 1953, 1957.

439See Baumgarten 1954, 78; Heidegger 1991, 77–8; and Adorno 2018, 18.

440'Beauty' is given as an archaic definition of 'form' in the Collins English and Merriam-Webster Dictionaries. For the Latin and Greek, see Lewis and Short 1879; Liddell and Scott 1889, 1940, and Cunliffe 1924.

sensory forces.⁴⁴¹

This is atypical. More commonly, again, 'formalists' are those who claim that beauty—or, more broadly, aesthetic or artistic value—is solely a property of things' *appearance*, and especially their *sensible characteristics* or *style*. For instance, 'form', in this sense, encompasses both the color and shape of a sculpture; the pacing and cinematographic technique displayed in a given film; the use of ekphrasis or specific metrical structures in a given lyric poem; and the stream-of-consciousness narratorial voice deployed in a given modernist novel. An aesthetic object's 'form', thus construed, is opposed to its *content*, not to its sensory *matter*. 'Content' here typically includes several distinct things. First, it typically includes *representational content*, e.g. the fact that a given painting depicts a landscape or a Dutch aristocrat, or that a particular melodic figure resembles the cadence of human speech. Second, 'content' typically includes *expressive content*, e.g. that a certain dance seems to express human feeling—without necessarily *depicting* it.⁴⁴² Third, 'content' typically includes *moral content*, e.g. that Leni Riefenstahl's *Triumph of the Will* presents a glorified and hence morally abhorrent vision of the Nazi party. Finally, 'content' typically includes *truth content*, e.g. that Turgenev's *Fathers and Sons* (1862) *accurately* depicts certain real features of mid-19th-century Russian provincial society.

Further distinctions can be helpfully drawn within the broad category of artistic or aesthetic 'formalism', in this standard sense. For instance, *radical formalists* insist that one can legitimately consider *only* an artwork's form, and so *not* its content, when assessing its artistic or aesthetic value. By contrast, more *moderate formalists* that artistic or aesthetic evaluation may properly involve consideration of both an artwork's form and its content, but still insist that the latter has artistic or aesthetic significance only in the context of evaluating the *relationship between content and form*. Specifically, a typical moderate formalist might insist that artistic or aesthetic evaluation of a given artwork can properly include consideration of its form, but also whether this form *coheres with* or functions to *effectively express* its content.⁴⁴³

I am neither a radical nor a moderate 'formalist', in this standard sense. I do take beauty to

441I elaborate the relevant sense of 'intuitable' below.

442On expression vs. representation, see e.g. Collingwood 1938, Wollheim 1987. For criticism, see e.g. van Gerwen 2001.

443Mary Devereaux (1998, 244) characterizes a closely related view that she calls 'sophisticated formalism', according to which "[a]rtistic success consists in expressing a particular message in an effective way." But the 'moderate formalism' characterized here is less restrictive: it allows that artistic success or aesthetic value *can* consist in the realization of purely formal—i.e. entirely 'content'-independent—aesthetic or artistic virtues.

depend upon *sensible* (or, more precisely, *intuitable*) *appearance*. Things cannot be beautiful *just* by virtue of their 'content', on my view. But I do not claim that *any* 'content' can sensibly appear as beautiful form. For instance, I am happy to allow that it might be impossible to produce truly beautiful artistic expressions of ethically-abhorrent or politically-heinous attitudes. Thus my view differs from standard 'formalism': my analysis of sensory *aspects* of aesthetic experience is entirely compatible with the possibility that 'content' might also have intrinsic bearing on aesthetic value—although if it does not, then my account clearly allows for that, too.

Although the formalist thesis that beauty inheres exclusively in *sensible appearance* is already highly controversial, the claim that beauty inheres exclusively in *shape or configuration* would likely be only still more widely contested. Form construed as shape is typically opposed not to *content*, in the above sense, but rather to *matter*. Thus, a sculpture's shape is distinguished from the clay or bronze out of which it is formed. Likewise, *aesthetic matter* construed as *sensation*, i.e. pure color, tone, scent, taste, or tactile impression, may be differentiated from aesthetic form construed as the *relational structure of sensations* in the representation of a given object. Kant appeals to a variant of aesthetic form in this sense. Namely, Kant views aesthetic form as the *conceptually indeterminate* spatiotemporal 'shape or play' of sensations in our *intuitive* representations of things—for reasons that I elaborate below.

Extrapolating somewhat from Kant's evidently restrictive view, one might identify aesthetic form with not only the *spatiotemporal* configuration of sensations, but also their 'shape' or configuration with respect to more abstract relational structures like *color spaces* and their analogues for non-visual sensory modalities. In a color space, for example, variable chromatic properties like *shade*, *tint*, *tone*, and *hue* can function as dimensions along which to 'locate' particular visual sensations, hence providing abstract metrical structures in which to conceptualize or intuitively represent aesthetically significant chromatic 'shapes' or configurations in the manifold of visual sensations elicited by a given object. Properties like the *additive and subtractive relations between particular colors* might also be treated as features of aesthetic form so construed as the intuitable 'shape' or configuration of sensory 'matter'. It is helpful to view this conception of *intuitable* form as a synthesis of Kantian and standard formalist notions of aesthetic 'form'. Like the Kantian and unlike the standard formalist, the advocate of the present view understands 'form' as shape or structure inhering in sensory 'matter', and so denies that 'material' sensory properties like bare color or tone are features of aesthetic

form. But like the standard formalist and unlike the Kantian, she does not restrict her attention to spatiotemporal relations. And like both the standard formalist and the Kantian, she denies that representational, ethical, or epistemic 'content' is a legitimate component of aesthetic form. So, for instance, an advocate of the present view would deny the 'formal' relevance of any non-relational properties of the particular visual sensations she has upon looking at a given painting—e.g. that she sees pleasing shades of blue, green, and brown, considered apart from the relations in which these colors stand to one another. But she would also distinguish from aesthetic form things like whether this sensory matter has a collective 'shape' that is somehow expressive of a particular conception of ethical virtue, whether the given painting depicts anything at all, and if so whether the things that it depicts are morally good, actually exist, or are physically possible. I wholly endorse this notion of aesthetic form, insofar as it bears on a purely sensory *aspect* of aesthetic experience: beauty only inheres in this kind of relational structure among loci of sensory force, on my view, even if it also depends in some way on 'content'. To be aesthetically relevant, 'content' must *sensuously appear* in *intuitable form*, in the present sense.

Finally, generalizing still further, one might insist that 'formal' features encompass not only spatiotemporal and other *intuitable* configurations of sensory 'matter', but also *conceptualized* relations among sensations, like those dismissed above as aspects of 'content'. And in this broadest notion of relational structure, one arguably recovers the notion of form as *kind or type* mentioned at the outset of this section. Here consider that every *determinate* kind or type evidently corresponds to a *concept*, and in turn that on the view of some theorists—saliently including Kant—a concept is essentially a rule or a law-like relational structure through which collections of discrete particulars or manifolds of sensory 'matter' can be *rationally synthesized* into *objective wholes*, or taken up in acts of *objective judgment*.

In this way, the denotation of form as kind or type can be subsumed under the ambit of a broad *structural* notion of form construed as relational unity, or the way that a collection of things are interrelated as parts of a whole. So understood, form has often been associated, directly or indirectly, with rationality or our capacity for objective judgment and knowledge—e.g. by Kant, as we will see. By contrast, the basic purely *aesthetic* notion of form, as sensible appearance, is arguably rooted in the classical distinction between the beautiful (as the highest aim of perception, the domain of aesthetics), the true (as the highest aim of judgment, the domain

of logic), and the good (as the highest aim of action, the domain of ethics).⁴⁴⁴ In sum, when I claim that *sensible beauty inheres only in intuitable structures of sensory force*, I mean to include both spatiotemporal and other *singular* relations (e.g. of chromatic contrast) among sensory forces. But I do not mean to include *generic* relations among sensory forces: I agree with Kant that we cannot prove a thing's beauty just by indicating its *conceptually-determinate features*.

11.4. My account of sensible beauty, as grounded in agonistic interactions among sensory forces, is in certain respects related to Kant's theory of 'free play' between imagination and understanding in experiences of beautiful form. But my account does not presuppose the theory of human nature that undergirds Kant's account. To appreciate this, we must first review Kant's account of aesthetic 'disinterestedness', and then relate it to his theory of cognition.

Kant understands 'interest' as “[t]he satisfaction that we combine with the representation of the existence of an object.”⁴⁴⁵ In turn, he claims that interested satisfaction is always grounded in, or else itself grounds, a *desire*.⁴⁴⁶ When a desire is grounded in interested satisfaction, Kant refers to the object of this desire as merely *agreeable*. The agreeable is that which we want more of, simply because it “gratifies” us bodily.⁴⁴⁷ Kant presents as paradigmatic agreeable things pleasant 'sensations', e.g. impressions of objects' *color* or *tone*⁴⁴⁸—hence presumably also their *taste*, *smell*, or *tactile quality*.⁴⁴⁹ By contrast, when our pleasure in representing the existence of something is grounded in our rational desire for it, Kant characterizes this thing as *good*.⁴⁵⁰ On Kant's view, then, disinterested pleasure is the feeling of freedom from desire in open-ended reflection upon beautiful aesthetic form: the 'free play' [*freien Spiele*] of our imagination and understanding.⁴⁵¹

In turn, Kant views this 'free play' of faculties as embodying the reciprocal relationship

444See the Heidegger reference in note [#].

445*KU* 5:204.

446*Ibid*.

447*Ibid*.

448*KU* 5:224.

449Here Kant's account reflects his debt to 18th-century British theorists. E.g. Shaftesbury “excludes the sensory from the realm of the aesthetic” because he identifies beauty with harmony and argues that “harmony can never be apprehended by the senses;” correspondingly, the “objects of sense” only satisfy “lower,” “material” desire (Stolnitz 196ab, 109–110). Compare Shaftesbury 2000, 321–2. On 'disinterestedness' in 18th-century British aesthetics, see also Stolnitz 1961a; Rind 2002; Berleant 1986. On Kant's relationship to this British context, see White 1973; Townsend 1987; and Guyer 1993.

450 *KU* 5:207–209.

451*KU* 5:217.

between powers of sensible 'receptivity' (here broadly associated with imagination) and rational 'spontaneity' (here associated with understanding) that he claims grounds the possibility of "cognition in general."⁴⁵² Kant's aesthetic formalism is thus bound up with a traditionalistic theory of human nature, according to which we are *sensuous-rational* beings. While this theory of human nature might not seem inherently objectionable, that Kant's theory of beauty presupposes it is perhaps grounds for suspicion. For should we accept that colors and tones cannot be beautiful, just because they do not speak directly to our rational nature? (Thus, Kant was arguably unable to recognize the aesthetic value of sensory *force* for the same reason that he was unable to recognize the ethical significance of *inclination*, not just moral *principle*.)

To deepen this criticism, it is helpful to note how Kant's 'formalism' is grounded in a deeper *expressive* theory of beauty, related to his basic vision of taste as "at bottom a faculty for the judging of *the sensible rendering of moral ideas*."⁴⁵³ Here note, first, that Kant's notion of *aesthetic form* approaches the boundary of conceptual representation from the side of intuition. Like intuitive representations, judgments of beauty are *singular*.⁴⁵⁴ This corresponds directly to Kant's view that judgments of taste are *subjectively* rather than *objectively* grounded, or 'aesthetic' rather than 'logical', and likewise to his view that "there can[...]be no rule in accordance with which someone could be compelled to acknowledge something as beautiful."⁴⁵⁵ Insofar as judgments of beauty are justified by appeal to the *feeling* of free play rather than by pointing to *objective features* of beautiful things, Kant believes, it is impossible to prove to someone that a given thing is beautiful simply by describing it in generic terms. Rather, when it comes to judgments of beauty one always has to "submit the object to his own eyes"⁴⁵⁶ in order to see whether its immediate sensory impact indeed initiates the harmonious free play of imagination and understanding. Aesthetic form, in turn, is for Kant evidently the 'form' into which the sensory 'matter' of an empirical intuition is composed. By thus dissociating aesthetic form from the raw 'matter' of sensation, Kant explicitly seeks to insulate judgments of beauty from idiosyncratic individual responses to (merely 'agreeable' or 'gratifying') sensory qualities. And by identifying aesthetic form with the relational structure of sensations, he in turn seeks to correlate judgments of beauty with the *universally-accessible* features of objects. Another way to

452KU 5:215–217.

453KU 5:356.

454KU 5:215.

455KU 5:215–216.

456KU 5:216.

appreciate this point, given traditional associations between *universality* and *rationality*, is to recognize that for Kant the representation of aesthetic form necessarily involves 'a formal determination of the unity of a manifold of [sensations]',⁴⁵⁷ and so always already involves activation of the subject's capacity for rational spontaneity, even though the beautiful 'pleases[...]without a concept'.⁴⁵⁸

In brief, this is possible (Kant claims) because he understands judgments of beauty as *aesthetic reflecting judgments*: to judge that a given object is beautiful is to claim that the spatiotemporal form of a corresponding *intuitive* representation of the object is 'subjectively purposive', or "purposive for the reflecting power of judgment by itself, i.e., in the mere intuition without any concept."⁴⁵⁹ Kant thus understands the feeling of 'free play' between imagination and understanding to constitute a special kind of judgment, which aims not at subsuming a given beautiful intuitive form under the concept of a *determinate kind of object of possible experience*, but rather at relating this beautiful form to the concept of the *universal subjective conditions of possibility of objective (reflecting) judgment itself*. So, whereas in the standard 'objective' use of reflecting judgment a given empirical intuition might be subsumed under the concept [dog], in judgments of beauty a given empirical intuition is subsumed under the concept [subjective purposiveness for the objective use of reflecting judgment in general].

Roughly speaking, then, one can understand Kant to be claiming that finding something beautiful essentially involves 'holding it together' (i.e. synthesizing the manifold of sensations it elicits) by means of the concept of a generic rational *subject* who perceives objects in space and time, as opposed to the concept of a specific kind of *object*. In other words, Kant roughly claims that objects are beautiful insofar as they represent the generic 'sensuous-rational' structure of human cognition in empirical intuition. Spatiotemporal 'form' is suited to perform this representational role because (Kant thinks) it directly involves both our faculties of sensory 'receptivity' and rational 'spontaneity', whereas raw sensory 'matter' involves only the sensuous aspect of our nature. This is why Kant is a 'formalist' about beauty.

11.5. However, broadly Kantian formalism about beauty need not be tied in this way to a traditionalistic theory of humans as essentially *sensuous-rational* beings. One way to decouple

457KU 5:224.

458KU 5:219.

459KU 20:249–250.

these positions is to acknowledge that what Kant degrades as mere sensory 'matter' can in fact be a locus of *aesthetic value* in its own right—while insisting that it is never *beautiful*, per se, apart from its structural form. This is where sensory force and aesthetic agon are useful notions.

On my view, *intuitable form* is not essentially linked to beauty because it mediates between 'rational spontaneity' and 'sensory receptivity', as spatiotemporal form does for Kant. Rather, *intuitable form* is the proper focal point for several other reasons: (i) It matches the phenomenological data, in the sense that 'formless' sensory force *just doesn't seem to be beautiful*—here recall section 2 above. (ii) Emphasis on *intuitable form* still allows for the kind of 'freedom from concepts' that is an attractive feature of Kant's account. Like Kant, that is, I claim that valid judgments of beauty are justified by appeal to a *feeling*, not by pointing to *objective features* of beautiful things.⁴⁶⁰ And one crucial aspect of this feeling, at least, is *aesthetic agon*: the impact of agonistic interactions among loci of sensory force, like contrapuntally-interacting melodies. Kant is right that in judgments of beauty one always has to “submit the object to his own eyes”;⁴⁶¹ and my account retains this feature. (iii) My account is more flexible than Kant's, however, insofar as I do not restrict *intuitable form* to *spatiotemporal* relations, but also allow that beautiful form's 'structure' might consist in purely intuitive relations like those of dynamic contrast between instruments.

My emphasis on *agonistic interactions*, specifically, adds several further advantages: (iv) Again, this matches the phenomenological data: things like harmony and dissonance can both be beautiful; but extreme imbalance, even insofar as it is aesthetically effective—e.g. an overwhelming solo voice that overpowers all accompanying parts in an attractive way—tends rather towards the sublime or just intensely impactful, rather than towards beauty. One natural explanation of this is that beauty is tied to tension among sensory forces with similar intensities. (v) Pointing to agonistic interactions within beautiful things provides an objective ground for the distinctively *open-ended* character of experiences of beauty. As Alexander Nehamas observes in a broadly Kantian spirit, beauty apparently concerns “attractions that exceed our ability to articulate them in terms that we already understand, and promise to reveal to us something never seen before.”⁴⁶² It is arguably this “promise of more,” of more valuable experience to come, that makes something beautiful.⁴⁶³ And I claim that dynamic tension among well-matched sensory

⁴⁶⁰Compare also Schopenhauer 1966, 409.

⁴⁶¹*KU* 5:216.

⁴⁶²Nehamas 2007, 86.

⁴⁶³Nehamas 2007, 76. Nehamas considers 'beauty' the “collective name” of “the values of aesthetics” (ibid. 86).

forces would naturally elicit a purely sensory feeling of open-endedness, in this vein.

Does this mean that sublimity does *not* elicit this same 'promise of more', on my account? Here we must distinguish two kinds of open-endedness. First, agonistic interaction elicits a kind of open-endedness: unresolvable tension among well-matched forces. In this respect, 'formless' sublime force does not elicit feelings of open-endedness. Second, however, the impact of *all* sensory force involves another kind of open-endedness related to the *freedom from concepts* described above. Beauty and sublimity alike involve this second experience of open-endedness. Here my view also bears meaningful resemblance to Heidegger's fuller account of things like 'glowing' colors. Let me briefly explain:

According to Heidegger, the totality of 'glowing' colors, 'singing' tones, and so on—i.e. the sensuous materiality of the artwork as “[t]hat into which the work sets itself back and which it causes to come forth in this setting back of itself”—is the 'earth'.⁴⁶⁴ The earth is 'set forth' in the stone of the temple or the sculpture of the god within, as this stone “presses downward and manifests its heaviness.” We can precisely determine the weight of the stone by placing it on a balance, Heidegger claims, but in so doing “the weight's burden has escaped us.” Indeed, according to Heidegger we can *only* “lay hold of the stone's heaviness” in the work of art, where this heaviness yet “remains undisclosed and unexplained.”⁴⁶⁵ Thus on Heidegger's view the “self-secluding” earth is 'set forth' precisely insofar as the work “sets itself back into” its poetically-not-scientifically-apprehended material aspect. In short, 'earth' is the way that reality resists incorporation into coherent 'worlds' of human intelligibility or meaning. I do not endorse all aspects of Heidegger's account (which is too complex to explain further here).⁴⁶⁶ But in a loosely Heideggerian spirit, I claim that all sensory forces elicit experiences as of butting up against something real that cannot be fully captured in acts of objective judgment. And, in this sense, every sensory force evokes a 'promise of more'. This suggests a helpful way to view the contrast between Kantian sensory *matter* and my notion of sensory *force*: Kantian sensory matter is the sensuous aspect of reality insofar as it can be determined by reason in acts of objective representation or judgment; whereas sensory force is the sensuous aspect of reality insofar as it resists our power of reason and exerts power in its own right. Any cognitive activity involved in aesthetic experience may thus be the effect of 'sense' acting on 'reason', rather than vice versa.

464Heidegger 1971, 46.

465Heidegger 1971, 46-7.

466For further explication, see Thomson 2011; Young 2001.

11.6. Kant is plausibly right that colors and tones are never *beautiful*. But contra Kant, they can be *sensory forces* with real *aesthetic impact*—like Heidegger's 'glowing' colors and 'singing' tones. Purely sensible beauty, in turn, is the impact of *agonistically-interacting* sensory forces.

Beauty does not inhere in the spatiotemporal 'form' of sensory 'matter' because of its distinctive mediating role between sensible receptivity and rational spontaneity, as Kant claims. But a broadly Kantian structuralist analysis of beauty can be decoupled from the theory of 'rational-sensuous' human nature that undergirds Kant's account. The feeling of internal tension that Kant characterizes in terms of 'free play' between imagination and understanding is in fact often just an experience of agonistically-interacting sensory forces.

Sensory force has aesthetic impact. When sensory forces interact agonistically, they have holistic impact as beautiful form. When sensory force is radically intensified, it becomes sublime. When sensory forces interact hierarchically, their collective impact is close to sublime, in quality if not degree. The simplest sensory experience of the sublime is just the overwhelming impact of radically intensified sensory force, essentially similar in kind (not degree) to the individual 'glowing' colors or 'singing' tones in a beautiful painting or melody. The relationship between beauty and sublimity is mediated by an elemental category of sensory force.

12. On the 'Pathetic Fallacy' and Artistic Objectivity

12.1. Overuse of figurative language can reflect a writer's self-conscious effort to 'be poetic', in a way prone to awkwardly backfiring. However, John Ruskin, the Victorian art critic, offers a slightly more charitable explanation by appeal to what he calls the *pathetic fallacy*:⁴⁶⁷ “violent feelings” can produce a “falseness in all our impressions of external things.”⁴⁶⁸ A bad writer's overreliance on figurative expression—like poetic personifications of natural objects—

467 Logan (1940, 187) argues that “the essentials of Ruskin's famous essay had already been enunciated by [Wordsworth],” observing moreover that “Ruskin was familiar with Wordsworth's critical essays.”

468 Ruskin 1856/2004, 71. Ruskin is perhaps now better known for his fraught relationship with Effie Gray. Nevertheless, Peter Garratt (2009, 53) judges that he was “the most influential mid-Victorian aesthete.” For a defense of Ruskin's ongoing relevance to aesthetics, see e.g. Landow 1971; cf. Bell 1963, 21. For other helpful studies, see also Hewison 1976; Wihl 1985.

need not be affected, then, as it can also indicate a perfectly authentic sensitivity to passionate feelings and their 'falsifying' effect (says Ruskin) on perception.⁴⁶⁹ This kind of sensitive writer may be further inclined to project feelings onto nature under the influence of a broadly Romantic ethos, of the sort that Wordsworth articulates in describing his own poem, 'The White Doe of Rylstone':

Throughout, objects . . . derive their influence not from properties inherent in them, not from what they are actually in themselves, but from such as are bestowed upon them by the minds of those who are conversant with or affected by those objects. Thus the Poetry, if there be any in the work, proceeds whence it ought to do, from the soul of Man, communicating its creative energies to the images of the external world.⁴⁷⁰

Ruskin prefers accurate description of objects to any such 'communication' of one's own 'energy'. Hence, he praises as “preëminently human” the “feeling” that “loves a stone for a stone's sake.”⁴⁷¹

But deeper than Ruskin's basic criticism of the pathetic fallacy is his further claim that it can be justified, in a way, when 'false' perceptions stem from 'true' feelings with 'strong' causes:

An inspired writer, in full impetuosity of passion, may speak wisely and truly of 'raging waves of the sea, foaming out their own shame' [Jude 1:13]; but it is only the basest writer who cannot speak of the sea without talking of 'raging waves,' 'remorseless floods,' 'ravenous billows' etc.; and it is one of the signs of the highest power in a writer to check all such habits of thought, and to keep his eyes fixed firmly on the *pure fact*, out of which if any feeling comes to him or his reader, he knows it must be a true one.⁴⁷²

Hence, Ruskin outlines a hierarchical order of “four classes.”⁴⁷³ First and lowest, there are totally un-poetic people who “feel nothing, and therefore see truly.” Next, a “second order of poets” comprises those who “feel strongly, think weakly, and see untruly.” In turn, “first order” poets “feel strongly, think strongly, and see truly.” Last and highest, there are people “who, strong as human creatures can be, are yet submitted to influences stronger than they, and see in a sort

469Ruskin (1856/2004, 77) also suggests that the “mere affection of [feeling],” which on his view is not a real pathetic fallacy at all, is “beyond all other ignobleness.”

470Quoted in Miles 1965, 6.

471Quoted in Miles 1965, 73.

472Ruskin 1856/2004, 75.

473Ruskin 1856/2004, 73–74.

untruly, because what they see is inconceivably above them,” as in “prophetic inspiration.” But even accounting for this kind of inspiration, Ruskin insists that “so far as [the pathetic fallacy] is a fallacy, it is always the sign of a morbid state of mind, and comparatively of a weak one.”⁴⁷⁴

Below, I argue that Ruskin's account of the pathetic fallacy indirectly motivates a defensible notion of *artistic objectivity*. Ruskin is wrong to claim that pathetic fallacies always reflect a degree of 'weakness' or 'morbidity'. And, relatedly, it is fair to be skeptical of the 'reason vs. emotion' opposition that appears to inform his distinction between 'truth' in 'feeling' and in 'sight'. (Thus, he describes the pathetic fallacy in terms of “an excited state of the feelings, making us[...]more or less irrational”; and claims that “so long as we see that the *feeling* is true, we pardon, or are even pleased by, the confessed fallacy of sight which it induces.”⁴⁷⁵) But one can isolate a more artistically salient notion of objectivity than Ruskin's by more closely examining the relation between great poets like Homer who 'see truly' and inspired prophets who declaim with 'false sight' but 'true feeling' under the sway of 'higher' powers.

Namely, I suggest that both 'first order poets' and inspired 'prophets' look outward to 'strong' external causes for 'true' inspiration. They are not trying to express themselves or reach self-knowledge through their creative acts. And they are calm or unsentimental in the way that mountains are calm and hurricanes are unsentimental: driven from within by vast reserves of power, and so immovable or unstoppable except by still more 'divine' forces. This is one way to take Ruskin's advice to 'keep eyes fixed firmly on the pure fact'. Another way more closely tracks certain of his remarks: 'Err on the side of purely literal description.'⁴⁷⁶ But this is a far less compelling ideal. The contrast between figurative and literal uses of language is less artistically salient, and narrower in scope, than the contrast between an ideal of individual or collective self-expression and an outwardly-oriented ideal of creative receptivity to basic features of the world.

The ideal of creative receptivity to basic features of reality is what I will here call 'artistic objectivity'. I elaborate this notion of objectivity below. And I contextualize it by contrast to ideals of creative self-expression in the post-Kantian Romantic tradition that Ruskin targets for criticism. More positively, I build upon Josephine Miles' analysis of how Ruskin's critique of the

474Ruskin 1856/2004, 79. Similarly: “Even in the most inspired prophet it is a sign of the incapacity of his human sight or thought to bear what has been revealed to it” (Ruskin 1856/2004, 79); “[The pathetic fallacy] is right or wrong according to the genuineness of the emotion from which it springs; always, however, implying necessarily *some* degree of weakness in the character” (Ruskin 1856/2004, 79).

475Ruskin 1856/2004, 75.

476Compare Josephine Miles' claim that Ruskin “worked toward” the “end” of “less fallacy and more minute observation of objects' qualities and structures” (Miles 1944, 216).

pathetic fallacy fits into a wider Victorian shift towards attention to natural objects 'for their own sake', which paved the way for certain currents of Modernist poetics, including Imagists' stress on 'exteriority' and depicting 'things as they really are'.⁴⁷⁷ I aim to reconstruct part of this tradition's early stages and then to further advance it, by first analyzing Ruskin's view and its philosophical context; then noting continuity between Romantic hyper-sensitivity to nature and putatively 'objective' modes of post-Romantic indulgence in close description of mundane objects; and finally arguing for a more selective ideal of artistic receptivity to things 'as they really are', via a critique of Ruskin's overly moralized notions of 'strong' cause and 'true' feeling.

12.2. It will prove helpful to begin by examining Ruskin's criticism of the term 'objectivity'. Isolating the strengths and weaknesses of his analysis will motivate my own notion of artistic objectivity. To these ends, though, a few brief notes about the pathetic fallacy are first in order.

The term 'pathetic fallacy' is now often used to refer to any case of personification used as a poetic technique, regardless of its cause. This usage is apparent in (if not also derived from) popular interpretations of Ruskin, as in Josephine Miles' claim that he views the pathetic fallacy as "the attribution of human aspects and emotions to natural objects."⁴⁷⁸ But Bernard F. Dick's summary is more precise: on his reading, Ruskin uses the term 'pathetic fallacy' to indicate "a weakness in subjective poets who were unable to see reality as it was and instead projected their own feelings onto it."⁴⁷⁹ Below, I will develop a distinction between feelings only projected onto nature and feelings that are immanent in nature in some truer sense. The possibility of inhuman passions, in the latter sense, bears directly on my notion of artistic objectivity. And while this distinction is not part of Ruskin's view, I will explain how it resonates with certain of his points.

Ruskin begins his discussion in "Of the Pathetic Fallacy" (1856) by criticizing the terms 'Objective' and 'Subjective' as "two of the most objectionable words ever coined by the troublesomeness of metaphysicians."⁴⁸⁰ He notes that "certain philosophers" take *subjective* qualities to be those which "depend upon our perception of them" or "upon our human nature as affected by them," like the blueness of gentian flowers or the sky.⁴⁸¹ By contrast, *objective*

477On 'exteriority', see e.g. Lowell 1920. On 'things as they really are', see e.g. Hulme 1960.

478Miles 1944, 210. See also Miles 1965, 1.

479Dick 1968, 27.

480Ruskin 1856/2004, 68.

481Ruskin 1856/2004, 68.

qualities are those “which [things] always have, irrespective of any other nature,” like roundness or squareness.⁴⁸² Ruskin seems to be writing against post-Kantian philosophers, in particular. (In a footnote, he writes several joke sentences using 'subject' and 'object' repeatedly, as a way of ironically “meet[ing] our German friends in their own style.” He then adds that “in a pure German sentence of the highest style there is often [no meaning] whatsoever.”⁴⁸³) This contrast also evokes earlier modern distinctions between 'primary' and 'secondary' qualities in the British tradition, however.⁴⁸⁴ And it evokes certain more recent accounts of objectivity. For instance, Thomas Nagel claims that “[t]he wider the range of subjective types to which a form of understanding is accessible—the less it depends on specific subjective capacities [i.e. 'the specifics of the individual's makeup and position in the world, or on the character of the particular type of creature he is']—the more objective it is.”⁴⁸⁵

Ruskin suggests abandoning the “tiresome and absurd” words 'objective' and 'subjective', and instead focusing on the distinction between the “ordinary, proper, and true appearances of things to us” and the “extraordinary, or false appearances, when we are under the influence of emotion, or contemplative fancy.”⁴⁸⁶ Hence, he observes that a gentian flower “has always the power” to produce sensations of blueness, and concludes that “the gentian and the sky are always verily blue, whatever philosophy may say to the contrary.”⁴⁸⁷ Ruskin thus spurns emphasis on the 'objective' properties of things 'in themselves', and de-emphasizes the distinction between primary and secondary qualities that concerns thinkers like Locke.⁴⁸⁸ Notably, Locke agrees that blueness is 'in' the sky, even in the absence of any perceiving beings.⁴⁸⁹ But Ruskin's remarks

482Ruskin 1856/2004, 68.

483Ruskin, *Modern Painters* III, Pt. IV, Ch. xii, §3, note (Ruskin 1858c, 158).

484E.g. Galileo claims that tastes, colors, etc., are “nothing but mere names for something which resides exclusively in our sensitive body,” such that “if the perceiving creatures were removed, all these qualities would be annihilated and banished from existence” (Matthews 1989, 57). Cf. Locke's claim that both 'primary' qualities like shape and 'secondary' qualities like color are “in bodies” (“*Ideas in the mind, qualities in bodies*” [Locke, *An Essay Concerning Human Understanding*, Chapter VIII, Section 7])—although he takes secondary qualities to be 'in bodies' simply as “powers to produce various sensations in us by their *primary qualities*” (Locke, *An Essay Concerning Human Understanding*, Chapter VIII, Section 10). E.g. “what is sweet, blue, or warm in *idea* is but the certain bulk, figure, and motion of the inseparable parts in the bodies themselves which we call so” (Locke, *Essay*, Ch. VIII, Section 15).

485Nagel 1986, 5.

486Ruskin 1856/2004, 70.

487Ruskin 1856/2004, 69.

488Ruskin did read Locke while at Oxford, along with Bacon, Dugald Stewart, and Thomas Stewart (Collingwood 1971, 4). Hence, there is at least some reason to believe that he would have been familiar with this distinction.

489Ruskin claims that while “a gentian does not produce the sensation of blueness, if you don't look at it,” still “it has always the power of doing so; its particles being everlastingly so arranged by its Maker,” such that a gentian is “always verily blue” (Ruskin 1856/2004, 69). This is similar to Locke's view that porphyry stones are red and white even in the dark (i.e. when nobody can see them), and more broadly that secondary qualities are “in

suggest that he would still also judge Locke's distinction between primary and secondary qualities to be aesthetically irrelevant. Color may be neither an 'objective' nor a 'primary' quality; but for Ruskin this clearly does not preclude a color's 'true' description by 'first order' poets.

However, Ruskin's appeal to the 'ordinary, proper, and true appearances of things to us' evinces his own commitment to epistemological ideals related to the ideals of 'objectivity' that he rejects as mere philosophical jargon—albeit not identical to them. Here note first that Ruskin characterizes “false appearances,” in the sense relevant to the 'pathetic fallacy', as those which are “entirely unconnected with any real power or character in the object, and only imputed to it by us.”⁴⁹⁰ The sky's blueness is not a 'false appearance', then, insofar as it is connected to a real power 'in the object': the sky's power to produce sensations of blueness in subjects like us. By contrast, when the poet Charles Kingsley writes of “[t]he cruel, crawling foam” of the sea, Ruskin objects that “[t]he foam is not cruel, neither does it crawl.”⁴⁹¹ Presumably, then, Ruskin would deny that Kingsley's metaphor reflects any 'real power or character' located 'in' the ocean.

Branka Arsić is thus wrong to claim that Ruskin initially “formulate[s] an ontology in which the difference between subjects and objects, or persons and things, is rejected as itself erroneous, thus canceling the divide on which the 'emotional falseness' [he] goes on to formulate relies in the first place.”⁴⁹² Arsić's thought is that Ruskin divides things into “doers and nondoers” rather than subjects and objects, and takes a gentian's 'power' to produce sensations of blueness as paradigmatic of 'doers', or “generative forces, both active[...]and activating,”⁴⁹³ which are thus neither 'subjects' nor 'objects'. Arsić's analysis is unconvincing, however. She stresses that for Ruskin “everything owns its secondary qualities, everything has the power to generate sensations of itself,” and evidently takes this to support her claim that Ruskin 'rejects' the ontology of subjects and objects.⁴⁹⁴ But Locke also understands secondary qualities as real 'powers' located 'in' objects. Thus Arsić would either have to insist that Locke also rejects the “mainstream” ontological division between subjects and objects,⁴⁹⁵ which clearly threatens to

bodies”, despite being “nothing in the objects themselves but powers to produce various sensations in us by their *primary qualities*” (Locke, *An Essay Concerning Human Understanding*, Chapter VIII, Section 10). By contrast, Galileo claims that colors do not exist except within perceiving creatures. See note 484.

490Ruskin 1856/2004, 70.

491Ruskin 1856/2004, 71.

492Arsić 2017, 123.

493Arsić 2017, 125. Likewise: “Ruskin opens his chapter by insisting on the annulment of the taxonomy that separates extants into subjects and objects” (Arsić 2017, 123).

494Arsić 2017, 126.

495Arsić 2017, 125.

make her account of Ruskin's 'radical' ontological break over-generalize; or else explain how Ruskin's view differs from Locke's in this respect, which she does not attempt to do—indeed, she does not mention Locke (whom Ruskin did read).⁴⁹⁶ Arsić conflates Ruskin's commitment to what seems to be a broadly Lockean account of secondary qualities as real powers located in objects (e.g. by contrast to Galilean accounts of secondary qualities as located only in the minds of subjects) with a more radical rejection of the basic distinction between subjects and objects.⁴⁹⁷

Ruskin manifestly does not reject the ontology of subjects and objects. Indeed, his whole discussion of the pathetic fallacy is predicated on a robust, if not even a quite naive, distinction between subjects and objects. Thus, Ruskin evidently takes any and all ascriptions of 'subject'-like qualities to 'objects' to be *false*. Arsić herself alludes to this by calling the subject-object or person-thing opposition “the divide on which the 'emotional falseness' Ruskin goes on to formulate relies in the first place.”⁴⁹⁸ This is true. Arsić is just wrong to claim that Ruskin's criticism of the terms 'subjective' and 'objective' somehow 'cancels' this (distinct) person-thing divide. Indeed, contra Arsić, it would make little sense for Ruskin to “cancel” the distinction on which his main discussion then “relies.” If Ruskin actually believed in “generative forces” and inert “nondoers” instead of “people” and “things,” as Arsić suggests, then he would not think that every attribution of active forces like *cruelty* to impersonal natural objects is “false”—which is precisely his view, however. The internal tension that Arsić purports to identify is illusory.

Thus, again, Ruskin evidently denies that Kingsley's appeal to the 'cruel, crawling foam' reflects any 'real power or character' located 'in' the foaming sea. Yet it is far from clear that Ruskin is right about this. After all, could the ocean not have a perfectly 'real power' to elicit a figurative description of 'cruel foam', in poets like Kingsley? Could cruelty not be located 'in' the ocean foam just as much as blueness is 'in' the sky? More broadly, might it not be that at least

⁴⁹⁶Collingwood summarizes Ruskin's philosophical studies: “at Oxford he read the old-fashioned logic, and disliked it; some Aristotle, partly with great admiration and partly with equal annoyance; some Plato; and some of the moderns—Bacon, Locke, Dugald Stewart and Thomas Brown[...]he never tackled the greater German idealists, except for one dubious attempt—instigated no doubt by Carlyle—to read Fichte, out of whom he got nothing. Plato alone he read and re-read, loved and revered, to the end of his life” (Collingwood 1971, 4).

⁴⁹⁷Compare Arsić's claim that the “three errors Ruskin ascribes to German idealism and its English version” are “predicated on an ontology that nominates psyches as the only powers capable of generating sensations, perceptions, and thoughts as forces singularly capable of manufacturing secondary qualities, from colors and sounds to warmth and odors (“no such sensation is produced by the object when nobody looks at it, therefore the thing, when it is not looked at, is not blue. ... To be sweet, a thing must have a taster”)” (Arsić 2017, 125). Arsić (ibid.) concludes that “[s]uch a mainstream ontological way of relating to the world is 'troublesome' to Ruskin, the trouble being its confusing the site of perception's existence with the power to produce it, as well as its ascribing both to humanized psyches.”

⁴⁹⁸Arsić 2017, 123.

some 'pathetic fallacies' reflect the impact of real causal powers, located 'in' objects just as much as their colors are 'in' them, on Ruskin's view?

Here we should tease apart several threads of Ruskin's appeal to 'the ordinary, proper, and true appearances of things to us,' on his behalf. First, he could deny that the ocean has *any* 'real power' to produce affective feelings (or thoughts, intuitive representations, etc.) of cruelty in Kingsley, broadly as the sky produces sensations of blueness in us. This is deeply implausible, though. Interpretive charity hence speaks strongly against imputing this naive claim to Ruskin.

Second, Ruskin might distinguish the inter-subjective validity of our sensations of blueness when looking at the sky from the personal or idiosyncratic quality of Kingsley's poetic response to the foaming ocean. There are some textual cues to this effect, although of course Ruskin would not use terms like 'inter-subjective', given his hostility to the words 'objective' and 'subjective'. For instance, he claims that if one replaces the technical phrases 'It is subjectively so' and 'It is objectively so' with the “plain old English” phrases 'It does so' and 'It is so', then “if you find that a thing which generally 'does so' to other people (as a gentian looks blue to most men), does *not* so to you, on any particular occasion, you will not fall into the impertinence of saying, that the thing is not so,[...]but you will say simply[...]that something is the matter with you.”⁴⁹⁹ Ruskin then considers the skeptical worry that a given thing might elicit different sensations in different people, e.g. such that the qualities that two people both call the 'sweetness' of sugar are in fact distinct. But he responds simply that “[t]he sugar's power to produce these two sensations, which we suppose to be, and which are, in all probability, very nearly the same in both of us, and, on the whole, in the human race, is its sweetness.”⁵⁰⁰

Here Ruskin's direct or indirect influence by British 'commonsense' empiricism—which likely also informs his view that terms like 'objective' are jargon best discarded in favor of 'plain old English'—is conspicuous. He encourages us to forgo concern with 'things in themselves' and instead to just focus on the 'ordinary appearances' of things to 'us'.⁵⁰¹ Who is 'us'? Ruskin never says. But he simply seems to have in mind typical, normally-functioning human beings.⁵⁰²

499Ruskin 1856/2004, 69.

500Ruskin 1856/2004, 69 n. 1.

501Ruskin 1856/2004, 70.

502Collingwood argues that Ruskin was a “whole-hearted adherent” of a “historical movement” in thought that prioritizes individual facts (not laws), explains them by appeal to other facts (not laws), suppleness of mind, freedom, and variety (not uniform and unquestioning adherence to fixed principle) (Collingwood 1971, 11–14). Collingwood calls this Ruskin's “Hegelianism” (ibid., 16), by contrast to 17th- and 18th-century “logicism” (ibid., 9). While I agree with some of Collingwood's characterizations of Ruskin (e.g. that he is more 'supple' than 'rigid', and more historically-minded than 'abstract'), I take a direct mapping of these onto 'Hegelianism' to be unjustified.

In this context, one might also observe the contrast between traditionalistic conceptions of objectivity in terms of a 'view from nowhere'—i.e. a globally or universally valid perspective on the world, beyond all local reference-frames and particular subjects' idiosyncratic points of view—and broadly Kantian conceptions of objectivity in terms of inter-subjectively valid representations of external things. Kantians insist that we cannot achieve 'unconditioned' vision of things as they are 'in themselves', rather than just as they appear to specific kinds of subjects. According to Kant and his followers, rather, we can only experience things as as they appear to us mediated by the basic 'forms' of our own cognitive powers—e.g. space and time construed as forms of our sensible intuition; or the pure 'categorical' forms of understanding, like causality and substance.⁵⁰³ But Kant claims that while these 'forms' block our access to reality 'in itself', they at least transcend cultural and historical boundaries. Hence, Kant views space, time, and the categories as 'objectively valid' in the sense of being universally and necessarily applicable to the experience of external objects by all (but only) beings with our cognitive powers of understanding and sensibility.⁵⁰⁴ Empirical concepts and intuitions are in turn objectively valid insofar as they refer immediately (like intuitions) or mediately (like concepts) to actual or possible objects of generic human experience. Notably, Kant takes judgments of beauty to possess “subjective universal validity,” hence to be inter-subjectively valid but not objective.⁵⁰⁵ For Kant, judgments of taste are 'subjectively' valid because they are grounded in a *feeling* (of 'free play'), albeit one properly elicited in all subjects by beautiful objects. Kantian 'objectivity' thus concerns inter-subjectively valid representations of *external objects* and their qualities (e.g.

Ruskin's hostility to Romantic poetry—which was strongly influenced by post-Kantian idealism—is here telling. Collingwood contrasts Coleridge, as a 'Kantian', against Carlyle as a “follower of Fichte” (Collingwood 1971, 30). He concludes that “[i]n some ways Fichte is nearer to Ruskin than to the Kantians whom they both detested” (Collingwood 1971, 30). But while the latter may well be true, it is consistent with English Romantic poetry also being strongly influenced by *post-Kantian* idealism of the sort that Collingwood calls 'Hegelism'. Regarding Coleridge's influence by post-Kantian idealism, e.g., see Engell 1990, Burwick 1990, Jasper 1986. E.g. Coleridge writes in 1804, “In the Preface of my *Metaphys. Works* I should say—Once & all read Tetens, Kant, Fichte, &c —& there you will trace or if you are on the hunt track me” (quoted in Engell 1990, 156).

503A third class of Kantian 'form' comprises *ideas*, or pure concepts of *reason*, that can never show up as real empirical objects or features thereof, but which nevertheless provide rationally-necessitated 'regulative ideals' for our practices: God, human freedom, and the systematic unity of nature.

504See e.g. *KrV* A26/B42 – A27/B43. Kant clearly does not *reduce* objectivity to inter-subjective validity, e.g. given that takes judgments of beauty to possess “subjective universal validity” (*KU* 5:215), hence to be inter-subjectively valid but not objectively valid. For Kant, judgments of taste are 'subjectively' valid because they are grounded in a *feeling* (of 'free play'), albeit one properly elicited in all subjects by beautiful objects. Kantian objectivity thus concerns inter-subjectively valid representations of *external objects*, rather than *internal feelings*.

505*KU* 5:215.

the greenness of grass),⁵⁰⁶ not those of *internal feelings*.⁵⁰⁷ Ruskin's claim that the sky's blueness is a 'true appearance' could therefore also be viewed in terms of a broadly Kantian account of the objective validity of judgments about external objects *insofar as they appear to a generic 'us'*.

A serious problem with invoking inter-subjective validity in this context, however, is that the highest poetic experiences of expressive qualities in nature are not 'ordinary', and arguably are not available even in principle to all normally-functioning people, in the way that the sky's blueness is. Not everyone is a great poet, after all. One might object that a poetic description of expressive qualities in nature is as inter-subjectively valid (or not) as any aesthetic judgment, or at least any claim about the aptness of a given metaphor. And people can evidently evaluate the aptness of a given metaphor without having the creative capacity to produce it. But here it is helpful to distinguish between (1) 'real powers' in impersonal natural entities to elicit figurative descriptions in poets and (2) 'real powers' in these figurative descriptions to elicit aesthetic experiences in audiences who read or hear them. Even supposing that aesthetic judgments (or claims about the aptness of a given metaphor, etc.) are universally valid, then, their inter-subjective validity is presumably related to the second kind of 'real power', not the first. But one should arguably focus on the first 'power', not the second, when considering whether or not a given 'pathetic fallacy' constitutes a 'true appearance'. Hence, one might hope that Ruskin has a better reason for viewing 'pathetic fallacies' as 'fallacies'.

Third, Ruskin explicitly distinguishes between fire itself being “ravenous and pitiless” and there being “something *in* this fire” that “rages.” He relates this 'something' to Greek gods:

It seems to me that the Greek had exactly the same instinctive feeling about the elements that we have ourselves; that to Homer, as much as to Casimir de la Vigne, fire seemed ravenous and pitiless; to Homer, as much as to Keats, the sea-wave appeared wayward or idle, or whatever else it may be to the poetical passion. But then the Greek reasoned upon this sensation, saying to himself: “I can light the fire, and put it out; I can dry this water up, or drink it. It cannot be the fire or the water that rages, or that is wayward. But it must be something *in* this fire and *in* the water, which I cannot destroy by extinguishing the one, or evaporating the other, any more than I destroy myself by cutting off my finger; *I was in my finger*,—something of me

506“The green color of the meadows belongs to objective sensation, as perception of an object of sense; but its agreeableness belongs to subjective sensation, through which no object is represented, i.e., to feeling, through which the object is considered as an object of satisfaction (which is not a cognition of it)” (KU 5:206).

507Apropos the discussion of Victorian poetry below, consider Browning's comparison of his view of poetry with Tennyson's: “Here is an Idyll about a knight being untrue to his friend. . . . I should judge the conflict in the knight's soul the proper subject to describe: Tennyson thinks he should describe the castle, and effect of the moon on its towers, and anything but the soul” (quoted in Miles 1965, 81).

at least was; I had a power over it and felt pain in it, though I am still as much myself when it is gone. So there may be a power in the water which is not water, but to which the water is as a body;—which can strike with it, move in it, suffer in it, yet not be destroyed with it. This something, this Great Water Spirit, I must not confuse with the waves, which are only its body. *They* may flow hither and thither, increase or diminish. *That* must be indivisible—imperishable—a god.⁵⁰⁸

Ruskin then analyzes the mythical account of Diana, the goddess of the hunt, the Moon, and the woods. He concludes that “[t]here is not the smallest inconsistency or unspirituality” in it:⁵⁰⁹

And when Diana is said to hunt with her nymphs in the woods, it does not mean merely, as Wordsworth puts it, that the poet or shepherd saw the moon and the stars glancing between the branches of the trees, and wishes to say so figuratively. It means that there is a living spirit, to which the light of the moon is a body; which takes delight in the glancing between the clouds and following the wild beasts as they wander through the night; and that this spirit sometimes assumes a perfect human form, and in this form, with real arrows, pursues and slays the wild beasts, which with its mere arrows of moonlight it could not slay; retaining, nevertheless, all the while, its power and being in the moonlight, and in all else that it rules.⁵¹⁰

Paganism is still blasphemous for Ruskin, a pious Christian. However, it is “not the materialism, but the vice, which degrades the [Greek] conception [of deities],” on his view, because “[t]here is always some sense of exaltation in the spiritual and immortal body,” such that “the materialism itself is never positive, or complete.”⁵¹¹ Ruskin hence sees Greek myths as quite deeply *true*, albeit not entirely so. The implication, of course, is that Christian metaphysics is entirely true.

Hence, while Ruskin views certain kinds of claims stemming from 'prophetic inspiration' as “fallacies”—e.g. a Biblical invocation of mountains singing and trees clapping before God still involves a pathetic fallacy, albeit a 'noble' one grounded in a 'true' feeling—his view is not narrowly scientific. His sense of what is literally true is far broader than that of a typical present-day secular humanist. And part of what he sees as literal truth is that there *are* real powers in natural objects, like the sea, which exceeds the bounds of narrowly empirical description. Ruskin simply insists that these real 'divine' powers—which, qua Christian, he relates without exception to a singular God, or universal 'spirit'—are not identical to any natural

508Ruskin 1858c, 175–76.

509Ruskin 1858c, 178.

510Ruskin 1858c, 177–78.

511Ruskin 1858c, 176.

objects. Hence, ascribing these powers to natural objects directly, for instance via pathetic fallacies, departs from 'pure fact'. On Ruskin's view, then, it seems that the *god* of the sea may literally be cruel, but the foaming water itself cannot be, as a mere object. Powers like blueness are 'in' the sea qua natural object; but powers like cruelty are 'in' the sea only in the way that the 'Great Water Spirit' is 'in' the sea—namely, as a “spirit” occupies its mere “body.”⁵¹²

Finally, and relatedly, Ruskin might insist that Kingsley's account of the 'cruel, crawling foam' is at least more so a description of a feeling than a description of an object. Indeed, Ruskin claims that Kingsley's lines are “pleasing,” “not because they fallaciously describe foam, but because they faithfully describe sorrow.”⁵¹³ Hence, even if there is some 'real power' in the sea that elicits a poetic response from Kingsley, his lines are perhaps more so the product of the 'real power' of 'grief'.⁵¹⁴ The 'cruel foam' might thus be a 'true appearance' of a feeling, but a 'false appearance' of the ocean. (Note that this distinction between 'feelings' and 'things' is closely related to the 'person-thing' divide that Arsić takes Ruskin to 'cancel'—but which the present analysis suggests he is in fact heavily reliant upon, without any internal tension or contradiction.)

In this light, Ruskin's insistence that “only the second order of poets” take “much delight” in “this kind of falseness,”⁵¹⁵ along with his broader claim that the pathetic fallacy is “always the sign of a morbid state of mind, and comparatively of a weak one,”⁵¹⁶ implies that he takes the accurate artistic representation of objects to be better than the accurate artistic representation of feelings by way of inaccurate representations of objects. This flies in the face of certain modern expressive theories of art, and may seem deeply misguided. But Ruskin's view can be leveraged into a more compelling account by parsing this contrast, between accurately describing external objects and accurately describing feelings via 'expressive' descriptions of external objects, into several finer-grained distinctions, between (i) figurative and self-expressive uses of language, (ii) empirical description and aesthetic perception, and (iii) expressive and non-expressive qualities.

'Feeling' may be intuitively associated with internal states, and hence with self-expression—especially by those who, like Ruskin, believe that descriptions of expressive qualities in impersonal nature are always 'false', merely figurative, etc. But note that this last claim is far

512Compare Ruskin 1858c, 176.

513Ruskin 1856/2004, 75.

514“The state of mind which attributes to [the foam] these characters of a living creature is one in which the reason is unhinged by grief” (Ruskin 1856/2004, 71).

515Ruskin 1856/2004, 71.

516Ruskin 1856/2004, 79.

from clearly true. Many modern theories of expressiveness in art entail that impersonal natural phenomena can (like artworks) literally possess expressive qualities, despite not being created by or for feeling beings (like artworks are), let alone being capable of feeling anything themselves. For instance, even if Susanne Langer is right that works of art are “expressive forms,”⁵¹⁷ or “images of feeling” which “mak[e] it visible or audible or in some way perceivable,”⁵¹⁸ this alone would not distinguish art from all natural beauty or sublimity. Of course, howling winds are not “created for our perception,” as Langer takes artworks to be.⁵¹⁹ But the wind clearly need not be made by or for us, let alone be capable of feeling anything itself, in order to be able to make passions or other feelings perceivable or sensibly apparent to a certain kind of receptive listener. Ruskin partly acknowledges this, in his aforementioned remarks about the Greek gods. But his refusal to simply identify 'divine' powers with natural entities is arguably misguided. It likely reflects his own distinctively 'spiritual' conception of God, based in his Christian religious faith. For many present-day readers, more immanent notions of divinity may seem far more plausible.

Ruskin's view that it is better to accurately depict external objects than feelings is thus more plausibly reframed in different terms: *focus on the broader world, not on yourself*. In this light, it matters whether a given quality is really 'in' an object, as opposed to projected onto it in the name of one's own feelings. But it does not matter whether one describes an object in terms of expressive as opposed to non-expressive qualities—partly because, again, some inanimate objects may literally be expressive, at least given an aesthetically relevant sense of 'expressive'.

Of course, empirical science will not be able to dictate whether or not the ocean foam is really 'cruel', or more broadly whether or not an expressive quality is 'in' a given natural entity. But this is in no way a problem for the present account. Claims about passions in inhuman nature (e.g.) are simply amenable to aesthetic, not empirical, modes of justification—again, with the further qualification that the justification of *artists'* aesthetic perceptions of nature is distinct from the justification of *spectators'* aesthetic responses to artworks.⁵²⁰ This is not at all surprising, however. Poetic claims about expressive qualities in nature may well involve precise and accurate aesthetic perception, despite going beyond the limits of mere empirical description.

517Langer 1957, 15. See also Langer 1953.

518Langer 1957, 25. Langer (*ibid.*, 24) contrasts the *symbolic* character of artistic expression against the *symptomatic* character of non-artistic modes of expression, like an infant's (highly self-expressive) screaming.

519Langer 1957, 15.

520Compare Nietzsche's claim that philosophers have “instead of envisaging the aesthetic problem from the point of view of the artist (the creator), considered art and the beautiful purely from that of the ‘spectator,’ and unconsciously introduced the ‘spectator’ into the concept ‘beautiful’” (*GM III*, 6).

Notably, the basic advice to 'focus on the broader world, not on yourself' is also closely related to part of the "fundamental idea" that Thomas Nagel associates with both the value and limits of objectivity: "we are small creatures in a big world of which we have only very partial understanding, and [] how things seem to us depends both on the world and on our constitution."⁵²¹ This is all certainly true. However, it does not directly motivate or support Nagel's own account of objectivity as a 'view from nowhere' or universally-valid perspective.

Rather, Nagel's point has two clear implications. First, it would be good to better understand the 'big world' out there, relative to which we are 'small creatures'. This motivates an account of objectivity directly in terms of *outwardness*, as the drive and capacity to understand the broader world. Second, the fact that our own 'constitution' affects how things appear to us can make it harder for us to achieve this broader understanding. This can be interpreted as the claim that we must account for the impact of our 'constitution' on our perception of things in order to better understand the broader world, i.e., as a means to objectivity construed as outwardness. Or, this second point can be taken as an endorsement of objectivity construed directly in terms of universality—i.e. as implying that a more objective representation just is one that depends less on how things appear to a given subject in light of its particular 'constitution'. But the connection between objectivity and outwardness is arguably even more intuitive than the putative connection between objectivity and universality, if not also genealogically prior to it.⁵²²

At any rate, an ideal of *artistic objectivity*, construed directly in terms of creative receptivity to the broader world, helps to capture the strengths of Ruskin's critique of the pathetic fallacy, while also avoiding his view's pitfalls. 'Keeping one's eye fixed firmly on the pure fact' is best interpreted in terms of directing one's attention outwards, rather than in terms of avoiding figurative description or ascribing expressive qualities to the natural environment. An ideal of artistic outwardness avoids Ruskin's dubious hostility towards all 'feeling'-induced figurative description, by highlighting the crucial difference between figurative and self-expressive uses of language. But in rejecting the common ideal of creative self-expression, the advocate of artistic outwardness also indicates a deep kernel of truth in Ruskin's criticism of 'pathetic fallacies'. A second-rank poet's appeal to 'raging waves' or 'laughing flowers' is often all too self-expressive.

⁵²¹Nagel 1986, 5.

⁵²²Hence, whether conceived in terms of a 'view from nowhere' or inter-subjective validity, standard accounts of objectivity are plausibly predicated (at least implicitly) on the belief that a *broader* perspective on the world, in the relevant sense, just is a *more universal* perspective. But this is by no means obvious.

12.3. In order to add more substance this basic account of artistic objectivity as receptivity to the broader world, it is necessary to elaborate what the 'broader world' is, and what 'receptivity' to it involves. To this end, I will again use Ruskin's analysis as a source of positive as well as negative inspiration. In so doing, I will also begin to situate both Ruskin's view and my own account of artistic objectivity in broader historical context, partly by examining their relation to the post-Kantian Romantic tradition in poetry and aesthetics which Ruskin is directly criticizing.

Ruskin's discussion makes salient two senses of the 'broader world'. First, one might view the broader world to which outwardly-oriented artists are receptive as comprising everything beyond the horizons of one's own limited experience or personal concerns. Second, one might view the broader world to which more outwardly-oriented artists are receptive as comprising only especially 'strong' external forces. As an interpretive matter, Ruskin arguably intimates both notions, to an extent. As a normative matter, I will then argue that the more restrictive notion of the 'broader world', with 'strength' construed amorally, grounds a more compelling creative ideal.

The former notion of the 'broader world', as comprising everything beyond the horizon's of one's own limited experience and personal concerns, jibes with Ruskin's characterization of "the difference between the great and less man" in terms of the great man's lesser "*alterability*":

[The great man] knows too much, and perceives and feels too much of the past and future, and of all things beside and around that which immediately affects him, to be in any wise shaken by it. His mind is made up; his thoughts have an accustomed current; his ways are steadfast; it is not this or that new sight which will at once unbalance him. He is tender to impression at the surface, like a rock with deep moss upon it; but there is too much mass of him to be moved. The smaller man, with the same degree of sensibility, is at once carried off his feet; he wants to do something he did not want to do before; he views all the universe in a new light through his tears; he is gay or enthusiastic, melancholy or passionate, as things come and go to him. Therefore the high creative poet might even be thought, to a great extent, impassive (as shallow people think Dante stern), receiving indeed all feelings to the full, but having a great centre of reflection and knowledge in which he stands serene, and watches the feeling, as it were, from afar off.⁵²³

Note Ruskin's claim that the great man is not "in any wise shaken" by "that which immediately affects him." This appeal to 'immediacy' suggests the kind of idiosyncrasy or self-centeredness

⁵²³Ruskin 1856/2004, 74–75.

that I referred to above as “the horizons of one's own limited experience or personal concerns.” Note also that the contrast class, for Ruskin, is “the past and future, and[...]all things beside and around” that which immediately affects oneself. The phrase 'all things beside and around that which immediately affects him' suggests a quite traditional notion of *objectivity*—as a Nagel-style 'view from nowhere' or universally-valid standpoint, independent of subjects' idiosyncratic capacities or personal experiences. Ruskin's appeal to 'the past and future' can be taken in a similar way, insofar as focus on the present can be a kind of bias towards one's own perspective.

Ruskin's claim that the great poet “watches the feeling [he receives], as it were, from afar off” makes salient a distinction between two kinds of artistic expression. On the one hand, an artist might creatively express an emotion that she actually feels. On the other hand, an artist might creatively express an emotion without herself feeling it—although she may contemplate it. Here one might recall Susanne Langer's claim artworks are essentially “expressive forms,”⁵²⁴ or “images of feeling” which “mak[e] it visible or audible or in some way perceivable.”⁵²⁵ Notably, Langer later claims that “[a]n artist working on a tragedy need not be in personal despair or violent upheaval.”⁵²⁶ More broadly, many modern aesthetic theorists who emphasize the expressive character of art now disassociate it from *self*-expressive acts by artists, in a way that more traditional 'expression theories' of art did not.⁵²⁷ For instance, according to an 'arousal theory' of musical expressiveness, the emotional expressiveness of a musical work or passage consists in its power to arouse corresponding emotion(s) in a receptive listener.⁵²⁸ Hence, an arousal theorist could (in principle) agree with Ruskin's claim that great *poets* 'watch' their feelings as if 'from afar off', even if their *audiences* do not. Likewise, an advocate of a modern 'resemblance' or 'contour' theory, who claims that music's expressiveness consists in relations of resemblance between the contour of a given melody (e.g.) and the contour of typical behavioral manifestations or phenomenological characteristics of a corresponding emotion, could allow that even the most highly expressive musical works are created by 'impassive' artists.⁵²⁹ In short, then,

524Langer 1957, 15. See also Langer 1953.

525Langer 1957, 25. Langer (ibid., 24) contrasts the *symbolic* character of artistic expression against the *symptomatic* character of non-artistic modes of expression, like an infant's (highly self-expressive) screaming.

526Langer 1957, 25.

527See e.g. Tolstoy 1898; Dewey 1934, Collingwood 1938. For recent defenses of Collingwood's theory of expression, see e.g. Ridley 1998; Robinson 2005, 244–250; and Hopkins 2017. Cf. Hospers 1954–1955; Tormey 1971.

528See e.g. Matravers 1998.

529For defenses of 'resemblance', 'contour', or 'appearance' theories in this spirit, see e.g. Kivy 1989; Budd 1995; and Davies 1994, 2006. Cf. Levinson 1996, 2006. For other major treatments of emotional expressiveness in music, see e.g. Kivy 1980, 1999; Meyer 1956; Budd 1985, 2011; Davies 2011; Levinson 1982; Robinson 1994,

Ruskin's positive vision of the 'serenity' of great poets is consistent with many modern theories of artistic expressiveness, even if it stands in tension with classical 'expression theories' of art.

Nor do artistic 'images of feeling' have to be images of *emotion*, per se, according to many modern aesthetic theorists. For instance, Langer takes 'feeling' to include “*everything that can be felt*, from physical sensation, pain and comfort, excitement and repose, to the most complex emotions, intellectual tensions, or the steady feeling-tones of a conscious human life.”⁵³⁰ With this broad notion in mind, one might recall Ruskin's characterization of pathetic fallacies as involving “extraordinary, or false appearances, when we are under the influence of emotion, or contemplative fancy.”⁵³¹ Note that Ruskin lists both 'emotion' and 'contemplative fancy', in a way that suggests he views them as two distinct kinds of 'feeling' that can induce pathetic fallacies.

In this connection, Ruskin's view is also helpfully compared to Kant's claim that taste is “at bottom a faculty for the judging of *the sensible rendering of moral ideas*.”⁵³² While 'moral ideas' are not emotions, perhaps we are nevertheless capable of feeling and not merely thinking them, at least in the context of aesthetic experience. Indeed, the sensuous presentation of ideas, whether in artworks or in beautiful natural phenomena, is arguably a salient way of allowing us to feel ideas, in this sense. Hegel's claim that “the sensuous in the work of art is itself something ideal, but which, not being ideal as thought is ideal, is still at the same time there externally as a thing” is productively interpreted in this light, as broadly Kantian.⁵³³ So too, one should interpret Schiller's less famous but earlier suggestion that “[i]n our pleasure in Beauty[...]reflection is so completely intermingled with feeling that we believe ourselves to perceive form immediately.”⁵³⁴

If 'feeling' is interpreted broadly enough to encompass ideas (at least qua sensuously presented in artworks, beautiful nature, etc.) as well as emotions, then Ruskin's preference for artistic depiction of objects over feelings could involve a whole-sale rejection of broadly Kantian views.⁵³⁵ Alternatively, though, one might contrast the true 'sensuous presentation' of ideas, emotions, etc., against the mere projection of human feelings onto artworks or natural objects. This second approach would render a broadly Kantian aesthetic theory compatible with Ruskin's

2005, 2011.

530Langer 1957, 15.

531Ruskin 1856/2004, 70.

532*KU* 5:356.

533Hegel 1975, v. I, 38.

534Schiller 1794–95/2014, 96–97.

535I do not claim that Ruskin in fact has this broad sense of 'feeling' in mind; just that his allusion to 'contemplative fancy' suggests something like it, i.e. a notion of 'feeling' somewhat wider than a narrowly emotional sense.

hostility towards the pathetic fallacy. And, indeed, when Ruskin elsewhere divides beauty into two classes, 'Typical' and 'Vital', he defines the latter as “the appearance of felicitous fulfillment of function in living things more especially of the joyful and right exertion of perfect life in man.”⁵³⁶ This aspect of his view is broadly compatible, at least, with Kant's appeal to the 'sensible rendering of moral ideas'. Likewise, in his famous essay on “The Nature of Gothic,” Ruskin praises as “the noblest art” an “exact unison of the abstract value, with the imitative power, of forms and colours,” or the “noblest composition, used to express the noblest facts.”⁵³⁷ This, too, is clearly consistent with a broadly Kantian view of art as a 'sensuous presentation of ideal form'.

Ruskin's appeal to the apparently “impassive” or “stern” nature of a “high creative poet” who “watches the feeling [he receives], as it were, from afar off” also arguably evokes earlier theorists' accounts of *disinterested* pleasure in the beautiful. On Kant's view, for example, the experience of beauty is ‘disinterested’ in that it involves a kind of pleasure which is neither based in, nor directly gives rise to, any desires.⁵³⁸ He thus sees pleasure in the beautiful as involving neither 'interested' satisfaction the merely ‘agreeable’ objects of sensuous desire nor 'interested' satisfaction in the instrumentally or finally ‘good’ objects of rational desire.⁵³⁹ Hence, for Kant, the experience of beauty is purely *contemplative*, or entirely removed from both action rationally directed towards the good and 'mere' animal behavior driven by physical impulse. The relative 'impassivity' of 'high creative poets', for Ruskin, is thus arguably conceptually connected to a broadly Kantian notion of aesthetic disinterestedness, if not influenced by it. Of course, Kant's position reflects his own influence by 18th-century British aesthetic theorists.⁵⁴⁰ Kant's account is therefore clearly not the only relevant conceptual antecedent of Ruskin's view, in this respect.

Schiller is here arguably more salient than Kant, for instance. In his *Letters on the Aesthetic Education of Man*, Schiller insists that an “impassioned fine art” is a “contradiction in terms,” because “the inevitable effect of the Beautiful is freedom from passions

⁵³⁶Quoted in Bell 1963, 21.

⁵³⁷Ruskin 1853/2004, 58.

⁵³⁸Kant views 'interest' as “[t]he satisfaction that we combine with the representation of the existence of an object” (KU 5:204). In turn, he sees interested satisfaction always grounded in, or else itself grounding, a *desire* (KU 5:208–209).

⁵³⁹KU 5:207–209.

⁵⁴⁰On ‘disinterestedness’ in 18th-century British aesthetics, see Stolnitz (1961a; 1961b), Berleant (1986), Guyer (1993a), and Rind (2002). For replies to Stolnitz, see also Dickie (1964; 1984). On Kant's relationship to this British context, see White (1973), Townsend (1987), and Guyer (1993b).

[*Leidenschaften*].”⁵⁴¹ Moreover, “no less self-contradictory,” on Schiller's view, is “a fine instructive (didactic) or improving (moral) art,” because “nothing is more at variance with the concept of Beauty than that it should have a tendentious effect upon the character.”⁵⁴² This freedom from both passions and didacticism echoes Kant's claim that reflection on beautiful form involves freedom both from sensuous desires (mirrored in Schiller's 'passions') and from rational desires for the good (mirrored in Schiller's 'instructive or improving art'). For Schiller, beauty elicits freedom from sensuous ‘passions’ and avoids ‘tendentious’ moral-rational effects because it involves the harmony of sensuous and rational laws, not their absence or attenuation. And this reflects his direct influence by Kant's theory of the 'free play' between imagination and understanding in experiences of beauty. Indeed, Schiller acknowledges that his aesthetic theory is based “for the most part” in Kantian principles.⁵⁴³ But whereas Kant stresses *spectators'* contemplative experience of disinterestedness, Schiller is equally attentive to *artists'* experience of disinterestedness, as he takes it to inform higher modes of creative activity.⁵⁴⁴ In this respect, Schiller's account of aesthetic disinterestedness is clearly closer than Kant's to Ruskin's positive view of the 'impassivity' or 'sternness' of poets like Dante, by contrast to British Romantic poets.

Schiller's influence on Friedrich Schlegel's intellectual development, and more broadly on the rise of German Romanticism, is also noteworthy in the present context.⁵⁴⁵ In the first instance, this is because Schiller seems to have indirectly influenced English Romanticism, via Coleridge's influence by Schlegel. René Wellek notes that “personal and epistolary contacts” between the English Romantics (Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats) and early or late German Romantics, narrowly construed—i.e. Friedrich and August Schlegel, Wackenroder, Tieck, and Novalis; followed by Arnim and Brentano—were “meager.”⁵⁴⁶ Still, Coleridge especially was “importantly influenced by German romantic aesthetics and criticism,” on Wellek's analysis. Indeed, he contends that “Coleridge himself admitted” that “the whole

541Schiller 1794–95/2014, 84.

542Schiller 2014, 84.

543Schiller 1794–95/2014, 19.

544E.g. see Schiller 1794–95/2014, 107–110. Cf. Nietzsche's claim that philosophers have “instead of envisaging the aesthetic problem from the point of view of the artist (the creator), considered art and the beautiful purely from that of the ‘spectator,’ and unconsciously introduced the ‘spectator’ into the concept ‘beautiful’ (*GM* III, 6). Nietzsche imputes this tendency to “all philosophers,” before elaborating (what he takes to be) its specific manifestation in Kant's theory of 'disinterested' pleasure in beauty (*GM* III, 6). Nietzsche's criticism is far more plausibly applicable to Kant than to Schiller.

545For Schiller's influence on Schlegel and the development of German Romanticism, see e.g. Lovejoy 1920; Wessell, Jr. 1971; and Beiser 2005, 116ff.

546Wellek 1964, 39.

romantic-classical, organic-mechanical contrast is derived from Schlegel.”⁵⁴⁷ Hence, when Ruskin criticizes English Romantic poetry, we should be attentive to the possibility that this might involve an indirect critique of German Romantic views, insofar as they influenced the British poets whom Ruskin is directly criticizing, if not also an indirect critique of Schiller as a direct influence on the rise of a Romantic ethos across Europe.⁵⁴⁸

With respect to Ruskin's critique of the pathetic fallacy, Schiller's shift from classicism to an ultimate embrace of modern 'sentimental' [*sentimentalische*] poetry is of crucial significance.⁵⁴⁹ In the early 1790s, Schiller—like Schlegel—endorsed an aesthetic doctrine “characterized by an insistence upon 'objective' aesthetic standards, by a conviction of the priority of 'form' over 'content,' of unity over expressiveness, in art, and by a belief in the superiority of ancient art, as the most adequate realization of these standards.”⁵⁵⁰ But Schiller—like Schlegel—later came to reject his youthful classicism as a kind of one-sided rationalism which privileged universal law or intelligible form over truly aesthetic 'play', or states in which the 'sense impulse' [*Stofftrieb*] and (rational) 'form impulse' [*Formtrieb*] are “at once mutually subordinated and coordinated.”⁵⁵¹ On Schiller's mature view, then, the experience of beauty, or 'aesthetic play', is an ideal condition of “reciprocal action between the two impulses [viz., the sense- and form-impulses], of such a kind that the operation of the one at the same time confirms and limits the operation of the other, and each one severally reaches its highest manifestation precisely through the activity of the other” (*AE*: 58). This proto-dialectical vision of reciprocal interdependence between 'sense' and 'reason' marks a departure from Kant's more one-sidedly intellectualist account. (Of course, Kant also saw human beings as essentially constituted by both 'sensuous' and 'rational' powers. But Schiller's stress on the historical process whereby humanity develops authentically *felt* respect for universal moral principles (e.g.) is still a real, proto-Hegelian departure from Kant.)

Ruskin's criticism of Romantic pathetic fallacies may thus seem to involve his return to a more 'one-sided' intellectualism of the sort that informed Schiller's early classicism, or much of 18th-century classicism more broadly. But in fact, to the extent that there are classicizing, or at least anti-modern, strains in Ruskin's thought, these seem to be decoupled from intellectualism in

547Wellek 1964, 39. See also Orsini 1964.

548See Wellek 1949a/b. Cf. Lovejoy 1941.

549See Schiller 1966.

550Lovejoy 1920, 4.

551Schiller 2014, 54n8.

a way that earlier classicisms often were not. To see this, we must examine Ruskin's attitude towards the 'classical' somewhat more closely.

The basic reading of Ruskin as a kind of classicist receives some support from his remark, in the next chapter of *Modern Painters*, “Of Classical Landscape,” that his “reason for asking the reader to give so much of his time to the examination of the pathetic fallacy was, that, whether in literature or in art, he will find it eminently characteristic of the modern mind.”⁵⁵² Likewise, “the modern painter” approaches landscape in a spirit of “endeavoring to express something which he, as a living creature, imagines in the lifeless object.” By contrast, “the classical and mediæval painters were content with expressing the unimaginary and actual qualities of the object itself.”⁵⁵³ Here Ruskin again contrasts English Romantic poetry (using Keats as an example) against Homer, whose characterizations of landscape he praises at length.⁵⁵⁴ Ruskin's grouping of classical and medieval art, both by contrast to the modern, indicates that he is not an advocate for the 'classical' in the sense of Renaissance classicism, insofar as it is opposed to the medieval. Here consider, for instance, his claim that “the blundering, pseudo-picturesque, pseudo-classical minds of Claude and the Renaissance landscape-painters” are “wholly missing Homer's practical common sense, and equally incapable of feeling the quiet natural grace and sweetness of his asphodel meadows, tender aspen poplars, or running vines.”⁵⁵⁵ Ruskin's famous praise of Gothic architecture, and his associated criticism of Renaissance classicism, also reinforces this basic point.

Ruskin's dismissive attitude towards Renaissance classicism and Enlightenment neoclassicism is consistent, however, with a distinct kind of affinity for classical Greek culture. That Ruskin does indeed have such an affinity for classical antiquity, notwithstanding his critique of Renaissance architecture, should already be apparent from his discussion of the Greek gods, quoted above. Ruskin's extensive praise of Homer, along with his admiration for Dante and Shakespeare, all also arguably indicates his preference for certain kinds of paradigmatically classical art and classicist currents in earlier modern art.⁵⁵⁶ Shakespeare is an ambiguous case in

552Ruskin 1858c, 173.

553Ruskin 1858c, 173.

554Ruskin claims that “the spirit of classical landscape has hardly been expressed in any other way than by words” (Ruskin 1858c, 173).

555Ruskin 1858c, 192.

556Shakespeare is a more ambiguous case, admittedly. Indeed, Shakespeare and Dante are treated as paradigms of “das *Wesentlich-Moderne*,” whom the “history of romantic poetry [*die Geschichte der romantischen Poesie*]” would discuss, by Friedrich Schlegel (see e.g. Lovejoy 1916, 393); and Schiller contrasts Shakespeare against Homer, as paradigmatic of modern 'sentimental' and classical 'naive' poetry, respectively (see Schiller 1966).

this respect, admittedly.⁵⁵⁷ Indeed, Shakespeare and Dante are treated as paradigms of “das *Wesentlich-Moderne*,” whom the “history of romantic poetry [*die Geschichte der romantischen Poesie*]” would discuss, by Friedrich Schlegel.⁵⁵⁸ Thus, to the extent that he embraces a kind of classicism, as part of his broader critical response to 'modern' Romantic art and philosophy, Ruskin's sense of the 'classical' nevertheless clearly diverges from earlier accounts of the 'romantic-classical' antithesis. This is also apparent from his claim that “[t]he Greek lived, in all things, a healthy, and, in a certain degree, a perfect life.”⁵⁵⁹ In one respect, this is quite like broadly Romantic characterizations of classical antiquity, as a 'naive' or 'childlike' state of primitive 'unity' with nature. But whereas the typical Romantic then argues that it is ultimately nobler to recover a 'higher' sense of unity with the divine through a process of alienation from nature and 'synthetic' recovery of it in continual progression towards a purely ideal end state (e.g. Schiller's 'moral condition'), this is not Ruskin's approach. Rather, it is precisely this Romantic ethos—this sentimental but somewhat disingenuous nostalgia for classical Greek paganism as a kind of blissful ignorance or Edenic reverie—that Ruskin harshly criticizes. Hence, for example, Ruskin disdains the “sorrow” that he takes to inflect all modern, but not classical, experience:

They [viz., the Greeks] had indeed their sorrows, true and deep, but still, more like children's sorrows than ours, whether bursting into open cry of pain, or hid with shuddering under the veil, still passing over the soul as clouds do over heaven, not sullyng it, not mingling with it;—darkening it perhaps long or utterly, but still not becoming one with it, and for the most part passing away in dashing rain of tears, and leaving the man unchanged: in nowise affecting, as our sorrow does, the whole tone of his thought and imagination thenceforward.

How far our melancholy may be deeper and wider than theirs in its roots and view, and therefore nobler, we shall consider presently; but at all events, they had the advantage of us in being entirely free from all those dim and feverish sensations which result from unhealthy state of the body. I believe that a large amount of the dreamy and sentimental sadness, tendency to reverie, and general patheticalness of modern life results merely from derangement of stomach; holding to the Greek life the same relation that the feverish night of an adult does to a child's sleep.⁵⁶⁰

Ruskin's nostalgia for the 'childlike' state of Greek antiquity is not Romantic. It is related to

Ruskin's aesthetic categories thus cannot be reduced to pre-existing accounts of the 'romantic-classical' contrast.
557For a mid 20th-century summary of critical perspectives on Shakespeare's knowledge of and attitude towards classical antiquity, see Velz 1968.

558Lovejoy 1916, 393.

559Ruskin 1858c, 180.

560Ruskin 1858c, 183–84.

Romanticism, conceptually if not also by way of historical influence. But Ruskin does not view the 'classical' or 'naive' as the first stage (or 'moment') in a process of ('dialectical') development towards a 'higher' mode of 'romantic' or 'sentimental' culture. Rather, he sees Homer as far closer than even the best modern Romantic or 'sentimental' artist to genuine 'high poetical truth'.

In this respect, the mature Schiller's conception of 'naive' poetry is still canonically Romantic. Notably, however, Schiller characterizes Shakespeare as a paradigm of the 'naive' poetic temperament that he also associates with Greek classical antiquity. Schiller thus describes his initial reaction to reading Shakespeare in *On Naive and Sentimental Poetry*:

When, at a very early age I first made the acquaintance of [Shakespeare], I was incensed by his coldness, the insensitivity which permitted him to jest in the midst of the highest pathos, to interrupt the heartrending scenes in *Hamlet*, in *King Lear*, in *Macbeth*, etc., with a Fool; restraining himself now where my sympathies rushed on, then coldbloodedly tearing himself away where my heart would have gladly lingered. Misled by acquaintance with more recent poets into looking first for the poet in his work, to find *his* heart, to reflect in unison with *him* on his subject matter, in short, to observe the object in the subject, it was intolerable to me that here there was no way to lay hold of the poet, and nowhere to confront him.⁵⁶¹

Moreover, Schiller argues that Shakespeare and Homer are “*one* in precisely this [naive as opposed to sentimental] trait of character”:

The same occurred to me with Homer also, whom I learned to know only at a later period. I recall now the curious point in the sixth book of the *Iliad* where Glaucus and Diomedes come face to face in the battle and, having recognized one another as guest-friends, afterwards exchange gifts. This touching depiction of the piety with which the rules of *hospitality* were observed even in battle can be compared with an account of the *knightly sense of nobility* in Ariosto, when two knights and rivals, Ferrau and Rinaldo, the latter a Christian, the former a Saracen, covered with wounds after a violent duel, make peace and in order to

⁵⁶¹Schiller 1966, 106–107.

overtake the feeling Angelica, mount the same horse. Both examples, as different as they may be otherwise, are almost alike in their effect upon our hearts, because both depict the beautiful victory of morals over passion and touch us by the naivety of their attitudes. But how differently the poets react in describing these similar actions. Ariosto, the citizen of a later world which had fallen from simplicity of manners, cannot, in recounting the occurrence, conceal his own wonderment and emotion. The feeling of the distance between those morals and those which characterized his own age overwhelms him. [. . .] And now old Homer! Scarcely has Diomedes learned from the narrative of Glaucus, his antagonist, that the latter's fathers were guest-friends of his deme, than he thrusts his lance into the ground, speaks in a friendly tone with him and agrees with him that in future they will avoid one another in battle. [...]It would hardly be possible for a *modern* poet [...] to have waited even this long before expressing his pleasure at this action. We would forgive him this all the more readily because, even in reading, our hearts pause, and gladly detach themselves from the object in order to look within. But of all this, not a trace in Homer; as though he had reported something quite everyday; indeed, as though he possessed no heart in his bosom, he continues in his dry truthfulness [. . .]⁵⁶²

Schiller's 'naive' poet is therefore “severe and modest like virginal Diana in her forests,” such that “without intimacy he flees the heart that seeks his, flees the desire that would embrace him,” and “the dry truth with which he deals with the objects seems not infrequently like insensitivity.” But in fact, it is simply that “[t]he object possesses him entirely.”⁵⁶³ This dimension of Schiller's conception of the 'naive' strongly anticipates central features of Ruskin's notion of the 'classical'.

Notably, any implicit ideal of the 'classical' in Ruskin also anticipates certain currents in Modernist poetics, conceptually if not historically. Hence, for example, T. E. Hulme suggests that “if you call Shakespeare romantic, you are using a different definition to the one I give”:

I know quite well that when people think of classical and romantic in verse, the contrast at once comes into their mind between, say, Racine and Shakespeare. I don't

⁵⁶²Schiller 1966, 107–109.

⁵⁶³Schiller 1966, 106.

mean this; the dividing line that I intend is here misplaced a little from the true middle. That Racine is on the extreme classical side I agree, but if you call Shakespeare romantic, you are using a different definition to the one I give. You are thinking of the difference between classic and romantic as being merely one between restraint and exuberance. I should say with Nietzsche that there are two kinds of classicism, the static and the dynamic. Shakespeare is the classic of motion.⁵⁶⁴

Hulme elaborates that what he means by “classical in verse” is “play” in the “early” and “imperfect” stages of development of a given artistic tradition or medium.⁵⁶⁵ By contrast, then, he takes the “romantic” to be related to states of cultural “exhaustion.”⁵⁶⁶ Hence, Hulme associates the romantic conception of man as “a well, a reservoir full of possibilities” that points towards the “infinite” with *decadence*.⁵⁶⁷ And, by contrast, Hulme associates the classical conception of man as “a very finite and fixed creature”⁵⁶⁸—not a crass *materialist*, but a *grounded* being who as such never (like the Romantic) “flies away into the circumambient gas”; a telluric being who “may jump, but[...]always returns back”⁵⁶⁹—with cultural *vitality* or *freshness*.⁵⁷⁰

Especially given Hulme's explicit mention of Nietzsche, it is also here worth noting that Nietzsche suggests, in *The Birth of Tragedy*, that Shakespeare is a modern bearer of Dionysian insight into 'universal will' or 'nature'. (At this early point in his intellectual development, Nietzsche's notion of the Dionysian is still strongly informed by his attraction to Wagner, Schopenhauer, and other recognizably Romantic thinkers. However, his mature view is that both the Dionysian and the Apollonian are opposed to the 'romantic'.) Although Nietzsche's contrast between Apollonian and Dionysian art impulses may seem to be a direct development of the 'classical-romantic' contrast, in fact Nietzsche's deeper point is that the *Weltanschauung* of classical antiquity involved *both* the Apollonian drive to beautiful form, great self-control, etc., and the Dionysian drive to frenzied de-individuation and identification with impersonal natural forces. Nietzsche opposes both the Apollonian and Dionysian to Socratic rationalism, which he takes to have caused the death (or 'suicide') of classical Greek tragedy, and more broadly initiated a world-historical process of cultural degradation, culminating in the decadence and nihilism of modern Europe. More broadly, then, Ruskin's grouping of Shakespeare, Homer, and

564Hulme 1960, 119.

565Hulme 1960, 121–122.

566Hulme 1960, 121–122.

567Hulme 1960, 117.

568Hulme 1960, 117.

569Hulme 1960, 117–118.

570On what he takes to be the “ambiguity” of Hulme's anti-Romanticism, see also Krieger 1953.

Dante against both the Romantics and Enlightenment poets like Alexander Pope anticipates broad groupings of taste, if not analytic categories, characteristic of certain currents of Modernist poetics—and perhaps especially those that have a strong Nietzschean influence. This is not to make any claim about Ruskin's historical influence on Nietzsche. It is to observe a meaningful conceptual connection between Ruskin's aesthetic and Nietzsche's, which plausibly explains deep-structural connections between overtly Nietzschean currents of Modernist poetics and more empiricist- or Protestant-inflected currents of anti-Romanticism in Victorian aesthetic theory—and less Nietzschean emphases on 'objectivity' or 'exteriority' in Modernism. Distinct but conceptually interrelated counter-Romantic currents thus developed in parallel within 19th-century England and Germany, before partly converging in the early 20th-century.⁵⁷¹

Ruskin's classicizing tendencies are thus arguably more like Hulme's than like the early Schiller's. Ruskin sees the Greeks as youthful, vital, directly experiencing nature, and free from both otherworldly dreaminess and excessive sentimentality. They are not bearers of 'reason' or 'intellect' or (ideal) 'form' as opposed to 'mere' sensuous 'matter'. Nor, for Ruskin, are Greek pagans the bearers of a 'naive' or 'childlike' materialism to be overcome, following a 'fall' from Edenic reverie and ensuing period of 'alienation', in the historical development of a 'higher' and genuinely modern 'aesthetic' state in which 'ideal' and 'material' orders are realized as reciprocally interdependent aspects of the Absolute—as the Greeks had become for the elder Schiller and many other broadly Romantics thinkers. On Ruskin's view, the exemplars of such a distinctively modern artistic ethos were not genuinely 'enlightened' or attuned to the 'infinite'. Rather, they were “unhealthy”: the “dreamy and sentimental sadness, tendency to reverie, and general pathologicalness of modern life” is largely the sign of a modern “derangement of stomach.” Ruskin's classicizing tendencies, in this sense, merit serious consideration. Vitality, unalienated religious experience, and creativity manifest in directness, clarity, and intensity of description are all artistic ideals worth taking seriously; as are his hostility to self-expression and sentimentality.

Regarding self-expression, however, it should be noted that Ruskin does approvingly write that the Greeks exalted as “more glorious than any of this wild loveliness” of nature “the beauty of the human countenance and form.”⁵⁷² In this respect, he is more of a humanist—i.e. he

571 In a broader discussion of Ruskin vis-à-vis Pound and Eliot, Nicholls (2001, 171) likewise suggests—citing (Ball 1971, 48–102)—that “[i]t is likely that, indirectly, Ruskin's attention to the object shaped both Lewis's and Pound's respective claims for forms of 'objectivity'.” See also Cerutti 2000. On Ruskin's affinities with Bergson—who in turn directly influenced T. E. Hulme, among many others—see also Gally 1933 and Delattre 1947.

572 Ruskin 1858c, 183.

places humanity more at the center of reality, closer to the apex of a basic hierarchy of value—than I. And, in this respect, Ruskin is more like the Romantic poets whom he directly criticizes.

The post-Kantian idealism that indirectly influenced English Romanticism shares this humanist bent. For Schiller, as for Kant, the state of 'play' or aesthetic 'freedom' in experiences of beauty is thus ultimately one of collective human self-expression. On Schiller's mature view, the 'aesthetic condition' is the essential human condition, or the "disposition which comprises in itself the wholeness of humanity," wherein we are "masters in equal degree of our passive and our active powers."⁵⁷³ Hence, "Man plays only when he is in the full sense of the word a man, and *he is only wholly Man when he is playing.*"⁵⁷⁴ Namely, 'aesthetic play' is for Schiller the coordinated display of the basic human powers of 'sense' and (rational) 'form'. Likewise, Kant claims that finding something beautiful involves synthesizing the manifold of sensations it elicits by means of the universal subjective concept of a generic theoretically rational subject who perceives objects in space and time, as opposed to the concept of a specific kind of object. Hence, Kant claims (roughly) that things are beautiful insofar as they sensuously represent the generic structure of human cognition, or the intuitive 'shape' of a generic sensuous-rational subject like us. This is critical historical context for Schiller's aforementioned claim that we "believe ourselves to *perceive form immediately*" in the experience of beauty. For Schiller, beauty is 'living shape,' or the sensuous expression of an essentially human relation of reciprocal interdependence between sensuous 'life' and rational 'form'. And for Hegel, in a basically similar vein, beauty is the sensuous presentation of the freedom of 'Spirit'.

The idea that artistic creation or aesthetic experience essentially involves self-expression can encourage use of the pathetic fallacy, as a way of appropriating the natural world in the name of artists' passions, or human powers of feeling more broadly. By contrast, describing nature without using pathetic fallacies can be a way to demonstrate one's refusal to value nature only under the sign of human qualities or capacities. Of course, it also can be a way of valuing human intellect, or a distinctively human power of contemplation—whether theoretical or perceptual—over our equally basic capacity for emotion. Ruskin's criticism of the pathetic fallacy arguably involves a degree of contemplative bias, or preference for thought and sensory perception over emotion. And his approving appeal to Greek idealizations of "human countenance and form" suggests an elevation of human 'spirit' over 'nature' that I take to be ethically and aesthetically

⁵⁷³Schiller 2014, 81–82.

⁵⁷⁴Schiller 2014, 63.

implausible. But Ruskin's affinity for 'true' poetic descriptions of objects like the sea, over true descriptions of feelings by way of 'falsely' describing objects, also plausibly involves a broader kind of receptivity to the value of impersonal natural phenomena, viewed 'on their own terms,' not ours. This is a less crudely anti-emotive reading of Ruskin's stress on “real power[s]” that are “in the object” rather than “only imputed to it by us,”⁵⁷⁵ which suggests a more compelling artistic ideal.

This slightly subtler reading of Ruskin also better jibes with his sympathetic account of the Greek gods, according to which 'divine' powers, including divine passions, really do exist—just without being 'in' natural objects in the same way that blueness is 'in' the sky. On my own view, this contrast is better explained in terms of the contrast between real powers 'in' natural objects to elicit responses in *humans generally speaking* (e.g. blueness), and real powers 'in' natural objects to elicit responses in *great artists*. 'Divine' powers are not features of *empirical* reality, insofar as they are not amenable to 'inter-subjectively valid' experience. But 'divine' powers may nevertheless be perfectly real, causally basic forces that impact great artists more so than other people. This is not a 'mystical' or 'supernatural' view of art. It is just anti-scientistic.

12.4. Finally, Ruskin's appeal to the apparently “impassive” nature of a “high creative poet” like Dante also illuminates the more specifically art critical context of his account. Ruskin is siding with Dante—who, even in his “most intense moods” has “entire command of himself,” and “can look around calmly”—against “Keats and Tennyson, and the poets of the second order,” who are “generally themselves subdued by the feelings under which they write, or, at least, write as choosing to be so.”⁵⁷⁶ Likewise, Ruskin earlier contrasts Shakespeare, Homer, and Dante, as paradigmatic “creative” poets, against “Reflective or Perceptive” poets like Wordsworth, Keats, and Tennyson.⁵⁷⁷ This appeal to the 'creativity' of poets who commit fewer pathetic fallacies, and the 'perceptiveness' of Romantic poets whom Ruskin evidently takes to indulge in the pathetic fallacy to excess, may seem to undermine my claim that Ruskin's view indirectly motivates my own account of artistic objectivity as receptivity to the broader world. But in fact it does not. Ruskin also clearly celebrates the perceptiveness of poets like Homer, as part of their “high poetical truth.”⁵⁷⁸ And he clearly values that poets like Dante are capable of

575Ruskin 1856/2004, 70.

576Ruskin 1856/2004, 75.

577Ruskin 1856/2004, 71n1.

578Ruskin 1856/2004, 77; see also Ruskin 1856/2004, 72.

“receiving all feelings to the full,” despite not being easily overwhelmed by them. Ruskin does allow that there is “some beauty” in a pathetic fallacy in Coleridge, and speaks fairly favorably of others in Wordsworth.⁵⁷⁹ Still, his overall attitude is clearly that the 'high poetical truth' of Homer and Dante is better than even the most 'pleasing' pathetic fallacies in the work of English Romantics and their Victorian descendants like Tennyson.⁵⁸⁰

Ruskin is thus broadly hostile to Romanticism—as well as to what he claims is the more disingenuous sentimentality of 18th-century poets like Pope.⁵⁸¹ He looks down upon 'pathetic fallacies', and especially far down upon those used as tropes, like 'raging waves', 'remorseless floods', and 'ravenous billows'.⁵⁸² In this light, Josephine Miles offers a helpful report of the kind and frequency of “attribut[ions] of human feeling to nature” which were common in the works of “eighteenth-century ['Pre-Romantic'] poets like Collins, Gray, Beattie, Cowper, Burns, and [Romantic] poets of the next generations like Wordsworth, Byron, Shelley, [and] Keats”:

Laughing flowers, angry deep, smiling land, proud steed, mournful scene, were the phrases they used, and many more like them with little deviation. The frequency of use, too, they had in common: about one attribution in every forty to sixty lines, or about once in every two pages[...]The poetic phenomenon of the fallacy was part of a larger poetic phenomenon, the density of stated emotion of all kinds. The “pathetic,” the emotion, if not applied to nature, was applied to the human body where it was felt, in “fiery passionate blood” and so on. Or the emotion was personified or abstracted. One way or another it managed to be stated about once in every six lines of Romantic poetry, a good solid amount.⁵⁸³

Miles in turn argues that while the pathetic fallacy “thus thrived through the years of Keats and Shelley,” it was “suddenly and immediately” modified at “about 1840, just when Ruskin named and condemned the artificiality of the device,” and “remained so decreased, with some exceptions,” throughout the rest of the 19th century. And “[i]n quality too it changed,” during the same period, “diminishing the emphasis on the pathetic and the sympathetic within itself as it grew increasingly involved with qualitative factors.” Thus, “[w]hereas the eighteenth-century fallacy attributed feelings which fitted an outward show of correspondence, the lark gay, the stormy sea angry, the fields smiling, and so on, the nineteenth-century fallacy in its decline gave

579Ruskin 1856/2004, 72–73, 78–80.

580On Tennyson's relationship to the Romantics, see e.g. Ball 1963, Tucker 1988, and Perry 2008.

581For Ruskin's harsh criticism of Pope, see Ruskin 1854/2004, 78.

582Ruskin 1856/2004, 75.

583Miles 1944, 210–11. Compare Miles 1965, 10–31.

nature many inward causes for feeling, apart from aspect of sympathy and type representation.”⁵⁸⁴ Hence, “emotion itself became less abundantly stated” in the 1840’s, with Tennyson, “as *grey*, as *bright*, as *sweet* acquired the ability to state them by indirection.”⁵⁸⁵ Pre-Raphaelites like Rossetti then followed Tennyson in treating this “fallacy of quality” as the rule, not the exception, with lines such as “Yearned loud the iron-bosomed sea” and “Oh the wind is sad in the iron chill.”⁵⁸⁶

By 'type representation', Miles mean representations generically applicable to a given sort of object or universal kind, for instance via conventional association—i.e. what she calls “standards of kind,” such as “the lark gay” or “the field smiling.”⁵⁸⁷ (Elsewhere, Miles elaborates that “[b]asic to [such standards'] significance was a concept of 'essential' or 'representative' quality, a single major quality, and the correspondence of this to the essential quality of the expressed form of an emotion.”⁵⁸⁸) Hence, Miles claims that Victorian uses of the pathetic fallacy shifted away from the “named noun” or “[e]ighteenth-century outward aspect,” towards “what [the poet Gerard Manley] Hopkins called 'inscape,' the qualities and inner structure of the thing itself.”⁵⁸⁹ In Victorians like Hopkins, the pathetic fallacy thus became a way to isolate “the qualifying and discriminating adjective.”⁵⁹⁰ In an earlier phase of this shift, for example, Tennyson's use of the pathetic fallacy makes the relationship between man and nature “a sensed physical likeness and bond,” such that more narrowly affective terms like 'sympathy' give way to more physical terms like 'incorporate'.⁵⁹¹ (Here Miles cites an address to a yew tree—a symbol of mourning—in Tennyson's “In Memoriam”, containing the line, “Sick for thy stubborn hardihood, / I seem to fail from out my blood / And grow incorporate into thee.”)

With respect to this increasingly physical characterization of feeling, Miles also points to

584Miles 1944, 212–13. However, Miles acknowledges that Victorians who were responsible for the transitions still also used some of the same old standard eighteenth-century representative pathetic fallacies—e.g., in Tennyson, *happy morn*, *joyful dawn*, *merry bird*, *doleful wind*, *sighing winds*, *merry bells*, *cheerful day*, *blissful clime*, *glad year*, *happy shoes*, *happy stars*, *weeping rose*, *moaning rose*, and *smiling Nature* (Miles 1965, 40). Still, for Tennyson the “adjectival emotion [e.g. 'odorous sighs', 'the silver year should cease to mourn and sigh'] is not the exception of his predecessors, but the rule” (Miles 1965, 34).

585Miles 1965, 37. For examples in Tennyson and Rossetti, see Miles 1965, 34–37 and 41–43.

586Miles 1965, 41. See also Miles 1965, 42–49.

587Miles 1944, 212. See also Miles 1965, 18.

588Miles 1965, 33.

589Miles 1944, 213.

590Miles 1944, 213. Compare Miles' appeal elsewhere to an “increasingly precise way of seeing natural objects” as characteristic of 19th-century poetics, and more broadly to “a progress toward closer and closer discrimination of quality” over the course of “the past two centuries” (Miles 1965, 101). (Miles published this remark in 1942.)

591Miles 1965, 36.

the metaphor of “pulse” in Tennyson and Rossetti. Miles argues that this *pulse* “take[s] the place of the eighteenth-century *face* of nature and the Wordsworthian *breath*,” such that “[t]he living motion which was for Wordsworth a motion of spirit is now more organic” and also “sets nature more strongly apart as its own organism intrinsic to its own spirit.”⁵⁹² Feeling thus became increasingly objective, in the sense of being more object-like, within the counter-Romantic tradition of Victorian poetry that is aligned with Ruskin's positive view. Subsequent Modernist emphasis on describing objects' sensory qualities, without pathos, hence emerged partly through late Romantic and Victorian developments and extensions of the pathetic fallacy. As it came to be applied to a wider variety of finely individuated objects, and 'feeling' rendered more physical than narrowly affective, the pathetic fallacy became nearer to the kind of close sensory depiction of things 'in themselves' that many Modernists celebrated in opposition to explicit sentimentality. Increasingly physical—i.e. *dynamic* rather than *spiritual*—characterizations of feeling set nature further apart from the human domain. But this need not constitute a 'withdrawal' of nature from man, in any pejorative sense associated with 'modernity-critique'. Rather, it may also (at least in part) amount to a *de-idealization* of nature, or a counter-Romantic recovery of *inhuman force*. At least, this is the broader context in which I suggest Miles' analysis is most fruitfully situated.

In this light, we may more productively return to Miles' remark about “sympathy.” By 'sympathy', she evidently has in mind common feeling, and specifically emotions (as if) shared between humans and “natural objects” like flowers. (Elsewhere, she stresses how Pre-Romantics like Gray and Collins take “Fancy” to “fit[] not only mourning to cloud, but also cloud to mourning.”⁵⁹³ And in Blake, too, there are abundant “shared emotions,” although now “[s]tream, hill, meadows, grasshopper, birds, all laugh . . . not to suit the scene or the sympathizer, but from their own true pleasure as expressed in human terms.”⁵⁹⁴) Thus Miles claims that Victorian uses of the pathetic fallacy shifted away from simple appeal to emotions shared between people and generic natural objects, and (again) towards a broader “new emphasis on color, atmosphere, texture, 'the thing in itself' with its adjectival discriminations.”⁵⁹⁵ On Miles' telling, this shift was also mediated by younger Romantics like Keats and Shelley, for whom the “world feels apart from man” (e.g. Keats writes of the shore, “Full of calm joy it was, as I of grief”), and sensory

592Miles 1654, 42.

593Miles 1965, 11.

594Miles 1965, 14–15.

595Miles 1944, 214. See also Miles 1965, 32–44.

qualities like “[s]hape, hue, odour, and sweet sound” become the “new agents of feeling.”⁵⁹⁶ In turn, this new Victorian emphasis on “objectivity” construed as close attention to the individual “thing in itself,” using “the qualifying and discriminating adjective,” positively influenced currents of Modernist poetics stressing “[t]he quality of the thing, not our feeling about it.”⁵⁹⁷

In particular, Miles highlights Imagism's call to “interest in the object 'for its own sake,’” or “stress on the object's own perceivable qualities and textures.”⁵⁹⁸ Here the Imagist poet Amy Lowell's own account of the distinctively “modern” poetic virtue of “Externality” is noteworthy:

I do not call it “objectivity” advisedly. I do not mean that this [modern] poetry is objective rather than subjective. I mean that it concerns itself with man in his proper relation to the universe, rather than as the lord and master of it. It is this attitude which leads to so many poems on nature, on effects of trees and sky and water, by themselves, with no hint of the “pathetic fallacy” to heighten interest.⁵⁹⁹

“[B]y 'externality,’” Lowell elaborates elsewhere, “I mean the attitude of being interested in things for themselves and not because of the effect they have upon oneself.”⁶⁰⁰ This notion is helpfully compared to Lowell's description of “exteriority” as “the characteristic modern touch”:

“Interiority” was the fashion; a poet examined his mental processes under a microscope. . . . Such a state of things was really utterly insupportable. Musset drank himself to death; Verlaine and Huysmans fell exhausted into the arms of the Church; Rimbaud took refuge in the Orient, married a native wife, and wrote no more poems; and the greater number undoubtedly learned to enjoy their little pleasures and comforts with agreeable calm, although they continued to write as though suicide were just round the corner.

Somehow, that fashion worked itself out, and “exteriority,” as I have called the characteristic modern touch, came in. By this extremely awkward word, “exteriority,” I mean an interest in the world apart from oneself, a contemplation of nature unencumbered by the “pathetic fallacy.” It is the reason of the picture-making of the modern poet. Picture-making these other men gave us, but the Modern gives us

596Miles 1965, 29. Likewise: “Keats, with Shelley in this respect, however great their differences in others, marked the pathetic fallacy with the notion: that which is sweet, soft, cool, *feels*. Tennyson half transformed the fallacy by his early and full acceptance of this notion” (Miles 1965, 38); “[The Romantics] were working toward the poetizing of more sharp fact of sense perception than there had been in their world before” (Miles 1965, 100).

597Miles 1944, 210.

598Miles 1944, 210.

599Lowell 1917, 106.

600Lowell 1916, 124. She continues: “The poet of the 'new manner' paints landscapes because landscapes are beautiful, not because they chime with his mood. He tells stories because stories are interesting, and not to prove a thesis. He writes narrative poems because his range embraces the world and is not confined to himself.”

picture-making without comment.⁶⁰¹

Lowell only meant to be “labeling” and “not condemning” the “internality” or “subjectivity” of “the poets of the late Victorian epoch”—as she saw them, contra Miles' more subtle analysis.⁶⁰² For Lowell, that is, “in the world of the arts [egoism] is perfectly permissible,” and indeed “makes very good and very interesting poetry.” It is just “not the manner of to-day [1916].”⁶⁰³

Clearly, Lowell's notion of “Externality” is closely related both to my own account of artistic objectivity as receptivity to the broader world and to Ruskin's criticism of the pathetic fallacy. This is no accident: I mean to be refining and creatively extending a counter-Romantic tradition that spans at least a period from the early Victorian era to mid 20th-century Modernist poetics. Broadly in keeping with Ruskin, I am also happy to be more judgmental than Lowell: externality is a poetic *virtue*, and internality or egoism is a poetic *vice*. Romantic poetry, and Wordsworthian currents in Victorian poetry, may well have other virtues; but this is a weakness.

Part of my original contribution to this tradition concerns my analysis of the relevant notion of the “universe” to which man should (Lowell suggests) stand in “proper relation.” Does the “universe” comprise *everything*? Or everything *natural*, rather than *artificial*? Or everything *holy*? Or everything *powerful*? As I have indicated above in this section, certain of Ruskin's remarks suggest something close to the first, most expansive notion of the 'universe'. He claims that the “great” person is less sensitive to alteration by “that which immediately affect him,” due to being more highly attuned to “the past and future, and[...]all things beside and around” his immediate environment. This emphasis on global perspective in turn evokes fairly traditionalistic notions of objectivity, as a 'view from nowhere' that affords universally-valid representations.

But it is far from clear that this is the best way to construe the 'universe' to which more outwardly-oriented artists are more receptive. Receptivity to *everything* beyond one's immediate environment is indiscriminate, if not also unduly self-effacing. Qua indiscriminate, receptivity to everything beyond one's immediate environment is also essentially similar to the Romantic poet's hyper-sensitivity to any and all features of his more immediate natural environment—such that every flower, insect, and cloud becomes a sign of God, a 'World Soul', etc.⁶⁰⁴ Consider, in this

601Lowell 1920, 215.

602Lowell 1916, 124.

603Lowell 1916, 124.

604E.g. consider Friedrich Wilhelm Joseph von Schelling's *Von der Weltseele (On the World Soul)* (1798), and Alexander von Humboldt's five-volume *Kosmos* (1845–1862) (Schelling 1806; Humboldt 1845–).

light, Miles' appeal to “physical consciousness of a universally infused emotion” in both Blake and Erasmus Darwin,⁶⁰⁵ then echoed and even intensified in the second-generation Romantics like Keats and Shelley.⁶⁰⁶ A similar attitude is also on full display in Emerson's “Nature” (1836):

A leaf, a sun-beam, a landscape, the ocean, make an analogous impression on the mind. What is common to them all,—that perfectness and harmony, is beauty. The standard of beauty is the entire circuit of natural forms,—the totality of nature[...]Nothing is quite beautiful alone: nothing but is beautiful in the whole. A single object is only so far beautiful as it suggests this universal grace. The poet, the painter, the sculptor, the musicians, the architect, seek each to concentrate this radiance of the world on one point, and each in his several work to satisfy the love of beauty which stimulates him to produce. Thus is Art, a nature passed through the alembic of man. Thus in art, does nature work through the will of a man filled with the beauty of her first works.⁶⁰⁷

This indiscriminate enthusiasm for all of nature is characteristic of a broad Romantic ethos fully developed in the early part of the nineteenth century. On Miles' telling, moreover, the Victorian shift in the use of the pathetic fallacy developed out of an earlier transition in Keats and Shelley (i.e. the second generation of Romantics), who began to use the pathetic fallacy to describe “likenesses in [more] delicate degrees” rather than “in the large,” as well as “an inclusion of increasingly small objects: of animals and more birds and then, increasingly, of modest flowers.” Hence, for Keats and Shelley, “even the smallest natural objects participated in the universal spirit,” and “the artist's discrimination and sensitivity was supposed to be increasingly fine,” so that he is sensitive to 'universal feeling' in all things.⁶⁰⁸

But this Romantic form of nature-enthusiasm also has a less overtly sentimental correlate in indiscriminate applications of the kind of 'objective' close attention to the individual “thing in itself,” using “the qualifying and discriminating adjective,” which Miles associates with both the Victorians' shifting usage of the pathetic fallacy and the Imagists' later emphasis on 'Externality'. Here consider Miles' suggestion that Ruskin and Tennyson both “worked toward” the “end” of “less fallacy and more minute observation of objects' qualities and structures.”⁶⁰⁹ Hopkins'

605Miles 1965, 17.

606Miles 1965, 27–28. E.G. “[B]oth [Keats and Shelley] work with the thought of physical feeling strong in mind, and both spread to skies and shores as to flowers the sense of touch, temperature, and quality to go with feeling” (Miles 1965, 27).

607Emerson 1983, 18–19.

608Miles 1965, 33–34.

609Miles 1944, 216. Compare Miles' claim that “[w]e think, contrary to Peter Bell and Wordsworth his critics, both,

account of a bluebell's beauty as a pathway to apprehending 'our Lord' is also here noteworthy:

I do not think I have ever seen anything more beautiful than the bluebell I have been looking at. I know the beauty of our Lord by it. It(s inscape) is (mixed of) strength and grace, like an ash (tree). The head is strongly drawn over (backwards) and arched down like a cutwater (drawing itself back from the line of the keel). The lines of the bells strike and overlie this, rayed but not symmetrically, some lie parallel. They look steely against (the) paper, the shades lying between the bells and behind the cockled petal-ends and nursing up the precision of their distinctness, the petal-ends themselves being delicately lit.⁶¹⁰

Compare Ruskin recounting of a religious experience in the woods:

The woods, which I had only looked on as wilderness, fulfilled I then saw, in their beauty, the same laws which guided the clouds, divided the light, and balanced the wave. 'He hath made everything beautiful in his time,' became for me thenceforward the interpretation of the bond between the human mind and all visible things.⁶¹¹

To the extent that Ruskin thus believes that natural objects are all beautiful, and all signs of the 'same laws' that govern nature as a systematic whole, his view differs from mine. I am somewhat more sympathetic to his remark in the third volume of *Modern Painters* that choice of subject (peasant, noble, field, court, etc.) matters less than approaching a given subject "with a thirst for beauty, and a hatred of meanness and vice."⁶¹² It is more plausible—even if incorrect—that all natural entities have beautiful *aspects*, which may well be 'outweighed' by ugliness in other respects, than that all natural entities are truly beautiful. Ruskin arguably holds only this weaker view. Hence, for instance, he maintains that "when we come to the colours of flowers and animals, some of these are entirely pure and heavenly . . . but many animals and flowers are stained with vulgar, vicious and discordant colors."⁶¹³ In this light, one might also consider

that the yellowness of the primrose by the river's brim is pretty important in itself and that the flower is important in itself" (Miles 1965, 2). I am happy to grant that some flowers can be 'important', even qua yellow. But Miles' appeal to the 'importance' of the primrose's yellowness arguably suggests a far broader claim than this.

610Quoted in Miles 1965, 89.

611Miles 1965, 61.

612Ruskin 1858c, 23. More fully: "[T]he difference between great and mean art lies, not in definable methods of handling, or styles of representation, or choices of subject, but wholly in the nobleness of the end to which the effort of the painter is addressed. . . . And it does not matter whether he seeks for his subject among peasants or nobles, among the heroic or the simple, in courts or in fields, so long only that he beholds all things with a thirst for beauty, and a hatred of meanness and vice."

613Quoted in Bell 1963, 36–37.

Collingwood's appeal to Ruskin's "frequent assertion that the only value a work of art possesses is that it should be an accurate record of a worthy subject—his lack of interest in works of art which did not represent a subject that pleased him."⁶¹⁴ Likewise, Quentin Bell claims that Ruskin prefers "the heroic subject."⁶¹⁵ Bell complains that this obscures "Rembrandt's flayed ox, Bruegel's clown's, Chardin's domesticities."⁶¹⁶ But—contra Bell—this is plausibly for the good.

'Minute observation' of ignoble features of objects is no more valuable than is 'minute observation' of ignoble feelings, on my view. Ruskin evidently agrees, and his talent for close description of art and nature should thus be viewed in this light. He is right to value only "detail referred to a great end," not "detail sought for its own sake."⁶¹⁷ (E.g. "the master [painter] does not aim at the particular color of individual blossoms; he seizes the type of all, and gives it with the utmost purity and simplicity of which colour is capable."⁶¹⁸) If Romantic hyper-sensitivity to nature involves a basic failure of objectivity, then so too does later Victorian and Modernist indulgence in the 'minute observation' of even relatively insignificant natural objects or artifacts.

The latter kind of indiscriminate 'objective depiction' often just highlights human powers of perception or attention, rather than yielding any deep insight into objects. Further, it suggests a notion of reality as 'everything that is the case' which is arguably just a materialistic correlate to the Romantic vision of nature as an all-encompassing organic unity or ideal form. Both wrongly present reality as totality. Both ideals of indiscriminate creative receptivity to 'total reality' are misguided. A more compelling artistic ideal would stress receptivity only to fundamental things. Artistic attention or enthusiasm should not be distributed in equal measure to all things. Artists must discriminate between the beautiful and ugly, the sacred and the profane, the potent and the inert. The idea that all of nature is beautiful—say, because every natural phenomenon bears the mark of the Power, Intellect, and Goodness of God (for the religious believer)—is anathema to real artistic objectivity, or creative receptivity directed differentially towards fundamental reality.

12.5. There are some indications that Ruskin endorsed this more restrictive notion of poetic receptivity, even beyond the passages considered above. That is, the broader world need

614Collingwood 1971, 33.

615Bell 1963, 36.

616Bell 1963, 36. Miles, in a related but more pragmatic vein, argues that Ruskin "wavered between a love for *all* objects and a love for useful objects (Miles 1965, 57).

617Ruskin 1858a, xxx.

618Ruskin 1858a, xxxi.

not be interpreted, on Ruskin's behalf, in terms of totality or the entire universe. More deeply, he arguably views the broader world to which the best artists are more receptive as comprising only especially 'strong' powers, like God. Hence, for instance, Ruskin associates the painter John Constable's "morbid preference of subjects of a low order" directly with "want of veneration."⁶¹⁹ Here recall also Ruskin's aforementioned appeal to people who, "strong as human creatures can be, are yet submitted to influences stronger than they, and see in a sort untruly, because what they see is inconceivably above them," as in "prophetic inspiration."⁶²⁰ 'Strength' may be divided into *physical* power (on the one hand) and (on the other) *moral* or *ethical* value. Note that the latter moralized notion of 'strength' retains connotations of universality, infinitude, etc. Ruskin arguably appeals to both notions of 'strength', although his dominant emphasis seems to be on the latter, more moralized notion. On my own view, an amoral notion of strength is more viable.

Ruskin suggests that "by how much this feeling is noble when it is justified by the strength of its cause, by so much it is ignoble when there is not cause enough for it," which may seem to suggest a broadly physical notion of 'strength'. However, this remark directly follows Ruskin's quotation of two Biblical passages from the Book of Isaiah, as examples of the "point beyond which it would be inhuman and monstrous if [a poet] pushes this government [of his passion], and, therefore, a point at which all feverish and wild fancy becomes just and true."⁶²¹ The second of these Biblical passages is Isaiah 55:12: "The mountains and the hills shall break forth before you into singing, and all the trees of the field shall clap their hands." Insofar as the Christian God is morally beneficent as well as omnipotent, then, it is unclear whether Ruskin means that God is a 'strong' cause of poetic amazement in the sense of being *physically* compelling, *morally* compelling, or (perhaps most likely) both.

The moral dimension of Ruskin's notion of 'strength' is also apparent in his later discussion of a pathetic fallacy from the poet Edward Young, describing (in Ruskin's words) "the character of a truly good and holy man":

'Where shall I find him? Angels, tell me where.
You know him; he is near you; point him out.
Shall I see glories beaming from his brow,
Or trace his footsteps by the rising flowers?'

619 *Modern Painters* Volume I, Section II, Chapter VII, §18 (Ruskin 1858a, 92).

620 Ruskin 1856/2004, 79.

621 Ruskin 1856/2004, 77.

Notably, it is not clear whether this passage contains one pathetic fallacy or two, according to Ruskin. The image of flowers 'rising' to 'trace' the footsteps of a holy man involves the kind of personification emphasized in popular definitions of the pathetic fallacy. But 'glories beaming from his brow' also suggests a kind of 'false' impression, on the poet's part, caused by strong moral feeling. This is also arguably a pathetic fallacy, then, in Ruskin's sense of the term, even though it does not involve personification. At any rate, Ruskin insists that "[t]his emotion [viz., Young's] has a worthy cause, and is thus true and right."⁶²² Here 'strong' has thus been supplanted by 'worthy'. In conjunction with his appeal to the 'truly good and holy' character of the man whom Young is describing, this suggests that Ruskin may intend a 'strong' cause to be a *morally worthy* cause, at least more so than a *physically strong* cause.

A final example is more ambiguous, but ultimately consistent with the above analysis. Ruskin invokes a passage from Wordsworth, describing a lover who has lost his mistress:

'Three years had Barbara in her grave been laid,
When thus his moan he made:—

“Oh, move, thou cottage, from behind yon oak,
Or let the ancient tree uprooted lie,
That in some other way yon smoke,
May mount into the sky.
If still behind yon pine-tree's ragged bough,
Headlong, the waterfall must come,
Oh, let it, then, be dumb—
Be anything, sweet stream, but that which thou art now.”

Ruskin characterizes the narrator's pathetic fallacy in this passage in the following terms:

Here is a cottage to be moved, if not a mountain, and a waterfall to be silent, if it is not to hang listening: but with what different relation to the mind that contemplates them! Here, in the extremity of its agony, the soul cries out wildly for relief, which that the same moment it partly knows to be impossible, but partly believes possible, in a vague impression that a miracle *might* be wrought to give relief even to a less sore distress,—that nature is kind, and God is kind, and that grief is strong: it knows not well what *is* possible to such grief. To silence a stream, to move a cottage wall,—one might think it could do as much as that!

622Ruskin 1856/2004, 78.

Here there are arguably suggestions of both the *physical* or *psychic* strength of a passion ('grief') and the *moral power* of God and nature. In this light, however, it is quite possible that Ruskin (on Wordsworth's behalf) also means to be indicating that grief at a lover's death has a strong positive moral valence—namely, insofar as romantic love has often been viewed as a morally elevated correlate of sexual desire, if not even a sublimated version of it.⁶²³

Contra this aspect of Ruskin's thought, it is not aesthetically, metaphysically, or ethically appropriate to interpret the 'strength' of causes that produce 'true' poetic feeling directly in terms of moral value. Nature can be kind, and grief can be strong. But nature is not kind, as a rule. The divine powers located 'in' the ocean or the flame are neither moral nor immoral. They are amoral. Ruskin himself comes close to acknowledging this, when he describes the Greek gods. But he loses clarity on this point in moments where his Christianity more strongly reasserts itself.

To truly 'love a stone for a stone's sake', as Ruskin claims to advocate, is in part to frankly acknowledge that a stone's values are not human values. But morality is arguably a distinctively human mode of valuing. To value morally is to treat humanity as an end in itself, to be what Marx called a 'species being' or 'universal' being. Hence, to read moral values into nature, even as its purely transcendent cause or ground, is essentially to project ourselves onto nature—or else to wrap nature around ourselves as a garment, to make all of nature our own “*inorganic* body.”⁶²⁴

This is anathema to artistic objectivity, construed as creative receptivity to basic features of reality. We are not the focal point of reality. Artists who treat us as if we were the center of reality inevitably fail to present us with nature 'as it really is' or 'for its own sake'. They only ever present us back to ourselves. Like Wordsworth, that is, they show us only “the soul of Man, communicating its creative energies to the images of the external world.”⁶²⁵ Ruskin claims to reject this Romantic ideal of creative self-expression. But the moral dimension of his analysis threatens to reintroduce it, under the auspice of clear-eyed receptivity to 'strong' causes.

12.6. Ruskin's critique of the pathetic fallacy fits into a wider Victorian shift towards attention to natural objects 'for their own sake', which paved the way for certain currents of

623E.g. consider part of Schiller's characterization of the highest 'aesthetic state' of society, in his *Letters on the Aesthetic Education of Man*: “A lovelier necessity now links the sexes together, and the sympathy of hearts helps to maintain the bond which was knitted only capriciously and inconstantly by desire. Released from its sullen chains, the quieter eye apprehends form, soul gazes into soul, and out of a selfish exchange of lust there grows a generous interplay of affection” (Schiller 1794–95/2014, 107–108).

624Marx 1978, 75.

625Quoted in Miles 1965, 6.

Modernist poetics, including Imagists' stress on 'exteriority' and depicting 'things as they really are'.⁶²⁶ Partly through close analysis of Ruskin's text, partly through elaboration of its philosophical context, and partly through a development of Josephine Miles' illuminating examination of the pathetic fallacy, I have attempted to reconstruct part of this tradition's early stages, and then to further advance it. I argued that putatively 'objective' modes of post-Romantic indulgence in close description of mundane objects are in certain respects essentially continuous with Romantic hyper-sensitivity to nature. And I briefly argued for a more selective ideal of artistic receptivity to things 'as they really are', via a critique of Ruskin's overly moralized notions of 'strong' cause and 'true' feeling.

Ruskin is closer to correct when he keeps his own eye fixed firmly on the pure fact. Not the pure empirical fact, but the pure poetic fact—the fact that includes “something *in* this fire and *in* the water” which may rage or be wayward, even if the fire and water cannot be possessed of any such 'feelings', as mere empirical objects. Again, Ruskin complains that it is “not the materialism, but the vice, which degrades the [Greek] conception [of deities].”⁶²⁷ But the reality of the Greek gods—their naturalness, their more-than-mere-ideality—is predicated precisely on this 'vice'. A moral God is a purely ideal 'Being'. The ravenousness and pitiless of the wildfire is not an idea. Nor is the gentleness of the breeze, however, or the life-giving power of the earth.

Ruskin shows signs of recognizing this, in his best moments. It is the spirit in which he praises Homer's description of Helen, looking out over the Achaean host from the Trojan gate:⁶²⁸

'I see all the other dark-eyed Greeks; but two I cannot see,—Castor and Pollux,—whom one mother bore with me. Have they not followed from fair Lacedaemon, or have they indeed come in their sea-wandering ships, but now will not enter into the battle of men, fearing the shame and the scorn that is in Me?'

Then Homer himself:

'So she spoke. But them, already, the life-giving earth possessed, there is Lacedaemon, in the dear fatherland.'

Ruskin calls this “high poetic truth carried to the extreme”:

⁶²⁶On 'exteriority', see e.g. Lowell 1920. On 'things as they really are', see e.g. Hulme 1960.

⁶²⁷Ruskin 1858c, 176.

⁶²⁸Ruskin 1856/2004, 76–77.

The poet has to speak of the earth in sadness, but he will not let that sadness affect or change his thoughts of it. No; though Castor and Pollux be dead, yet the earth is our mother still, fruitful, life-giving. These are the facts of the thing. I see nothing else than these. Make what you will of them . . .

Indeed, these are the facts of the thing—even if they are not empirical, but purely poetical, facts.

To 'keep eyes fixed firmly' on these pure facts is not to err on the side of narrowly literal description, as a naive reading of Ruskin might suggest. Ruskin does remain beholden to a fairly flatfooted distinction between 'people' and 'things', which makes him view a wide range of poetic uses of personification as indicating a poet's 'false' perceptions. This aspect of his analysis may well be untenable, especially in light of modern theories of artistic expressiveness. But the contrast between figurative and literal uses of language is anyways less artistically salient, and narrower in scope, than is the contrast between an ideal of individual or collective self-expression and an outwardly-oriented ideal of creative receptivity to basic features of the world. Poetical facts are grounded in real powers located 'in' objects. But unlike the blueness of the sky, the real powers that elicit the highest artistic acts may affect great poets but not 'typical' people. To acknowledge the existence of such powers, and their real interactions with great artists, is not mysticism or supernaturalism. It is to reject scientism, and to view art as a natural phenomenon.

The greatest artists look outward to strong external causes for true inspiration. They are not trying to express themselves or reach self-knowledge through their art. And they are calm or unsentimental in the way that mountains are calm and hurricanes are unsentimental: driven from within by vast reserves of power, and so immovable or unstoppable except by the divine forces which they channel in their highest acts of creative 'expression'. This is the artist's objectivity.

CHAPTER IV

Force as the Ground of Scientific Objectivity

13. Scientific Objectivity as a View from Explanatory Power

13.1. Many view the distinction between objectivity and subjectivity as essentially related to that between universality and particularity. Hence, many relate objectivity to an ideal of knowing things 'in themselves', or under universally-valid modes of description, rather than merely as they appear to particular sorts of subjects. Or, at least, many relate objectivity to an ideal of representations valid 'inter-subjectively' rather than just for particular individuals. These are both mistakes, however. Objective representations may well offer us accurate knowledge of mind-independent things, or inter-subjectively valid empirical facts. But this is not the basis of their objectivity.

Objectivity is essentially related to outwardness: the drive and ability to understand elemental reality—the world beyond ourselves, and in particular its most fundamental aspects. We achieve this exteriority in part by understanding ourselves in terms of the arational social and broader natural forces that ground our own essential character, individually or collectively. But self-understanding of this sort is only one aspect of objectivity. Objectivity is a systematic orientation away from inwardness or interiority, including myopic focus on bare truth or factual knowledge, outwards towards the elemental.

Scientific objectivity calls us to the 'standpoint' of *explanatorily-basic* aspects of the world. This is why objective scientific representation appears 'detached' or 'disinterested': not because it is a 'view from nowhere', but because it is a view from impersonal power.

In objective scientific representation, things are reduced to 'objects' appearing for 'subjects'. But these need not be human, or even rational, subjects. Early modern natural philosophers misunderstood scientific objectivity in terms of Christian theology, taking God to be the basic subject for whom natural phenomena appear as mere objects: material things ordered

by Laws of Nature construed literally as divinely-imposed rational forms. Kantians in turn substitute human subjectivity for divine Mind, taking the objects of experience to be essentially determined by the pure 'forms' of human cognitive powers. In either case, God or Man is treated as explanatorily fundamental vis-à-vis the natural order. These visions of scientific objectivity are correct in abstract form, but mistaken in their identification of its subject. Scientific objectivity treats explanatorily-fundamental aspects of the natural world as the 'subjects' for which observable things appear as 'objects'. The 'transcendental' forms of scientific objectivity are neither rational laws (as if) imposed by an intelligent God nor generic structuring principles of human cognition. They are mind-independent and explanatorily-basic physical structures, which are intelligible but not essentially rational, any more than the slope of a mountain or the rotation of a hurricane is rational. They are *natural forms*, and in particular *dynamic structures*—the arational shapes of impersonal natural forces' empirical impact.

This account of scientific objectivity yields not only a novel and explanatorily powerful interpretation of several central currents in the modern history of philosophy, but also a unique synthesis of two ordinarily-opposed views. It is compatible with the cross-cultural and trans-historical validity of much of our best empirical scientific knowledge. But it is also responsive to, and creatively extends, post-Enlightenment critiques of excessive rationalism in the modern scientific ethos. While science does have impressive epistemic credentials, its deeper value and distinctive mode of objectivity is rooted not in its relation to truth, confirmation, or reason, but in the way that it systematically grounds factual knowledge in the 'standpoint' of arational power.

13.2. Although my focus here is on objectivity in the empirical sciences, I will arrive at more detailed engagement with prominent views in 20th- and 21st-century philosophy of science (in sub-sections 6 and thereafter) by way of broader epistemological and metaphysical analysis. This abstract approach will provide crucial context and motivation for my view of objectivity, which will in turn clarify its relationship to science, as well my ontological appeal to 'natural forms'.

The opposition between subjectivity and objectivity mirrors the ontological distinction between mere appearance and the reality that underlies it. But the real is not the universal or the purely intelligible, and the merely apparent is not the particular or the sensuous, despite the long tradition of metaphysical rationalism from Parmenides to Plato and onwards. At least, one need

not presuppose this ontology in order to analyze objectivity in full generality.⁶²⁹ Commentators identify objectivity directly with a 'view from nowhere' because they (implicitly) treat Mind as most real, such that a disembodied 'Mind's-eye view' seems primary. I elaborate on this below.

A maximally scientifically objective perspective is not a view from nowhere, but a view from fundamental reality. Depending on one's ontological commitments, then, scientific objectivity will seem to be grounded in different sorts of 'really real' things, whether it be ideal Forms, first principles,⁶³⁰ natural kinds, 'natural classifications',⁶³¹ laws of nature, substances,⁶³² 'perfectly natural properties',⁶³³ or 'the' causal structure of the world.⁶³⁴ Objective scientific representation is not at root that *of* 'really real' things, but *from* the standpoint of that which is more or most real. Platonic idealists thus take objectivity to involve representing sensible things as particulars, i.e., inessentially distinct instantiations of ideal Forms. But I deny the basic ontological status of universals and particulars. I endorse an alternative account of the basic ontology that grounds maximally objective scientific knowledge, again as an order of arational dynamic forms corresponding to causally basic modes of natural force. Here I motivate that alternative ontology only indirectly, however, as my primary goal is simply to argue that scientific objectivity is a view from 'really real', explanatorily central things—not a view from nowhere, or a viewpoint onto everything that is the case.

13.3. Discussions of objectivity often conflate two distinct ideals. First, there is the traditional ideal of the 'view from nowhere', a perspective independent of all particular subjective capacities and local frames of reference, which is hence globally or universally valid. Even weaker accounts of a 'view from humanity' or 'view from universal moral subjectivity' often still

629If the 'really real' were in fact universals, then objective vision would be a 'view from universals', *for this reason*.

630E.g. Aristotle takes scientific inquiry to culminate in state of *theoria*, or contemplation of “unchanging, eternal, and divine objects” (Nightingale 2004, 208), understood in terms of “‘clear comprehension’ of first principles [*archai*] and the recognition of the theorems entailed by those first principles and the manner in which they follow from them” (White 1980, 261), and, ultimately, intellectual apprehension of God, the 'unmoved mover' (*Metaphysics* 1072a) and fundamental 'first principle' [*archē*] (*Metaphysics* 1072b14). See also (Loux 1991, 16.)

631Duhem 1906/1991.

632A. L. Hammond remarks that “in all its many general-use meanings [the word 'substance'] has kept the core of reality, of the relatively more real, and the natural as the existent: hence the independent, the enduring, the more than subjective, the nonartificial, the effective, the affected, the important, what is there” (1969, 9). Hammond rightly notes that the latter are all “‘good’ notions,” i.e. have positive valence (*ibid.*). Regarding the link between reality and value, W. T. Stace (1952, 127) argues that “there exists in the human mind an ineradicable tendency to identify value with reality—that is, if value is here understood as the supreme value of divine blessedness.”

633See Lewis 1983.

634E.g. see Wesley Salmon's *Scientific Explanation and the Causal Structure of the World* (1984), or French 2014.

exist within the horizon of the same basic interpretation of objective vision as universal vision. Proponents of objectivity as inter-subjective validity often simply identify the relevant form of universality as that possessed by a species or type vis-à-vis its particular instances, or the demands of universal moral equality⁶³⁵ vis-à-vis the particularistic desires of self-seeking individuality.⁶³⁶ Hence, judgments that are inter-subjectively valid for all (but only) people can be understood as those valid from the 'universal personal' perspective of a person who is no-person-in-particular.⁶³⁷ Objectivity is thus pervasively construed in terms of *universality*.

Second, though, it is also natural to interpret objectivity in terms of a distinct ideal of *outwardness*: the drive and real ability to understand the vast world beyond ourselves, and in many respects greater than us, or to better understand our own nature directly in terms of the basic features of this broader world. Objectivity in this sense is opposed to subjectivity construed as *inwardness* or *interiority*, not *particularity*. I endorse this ideal of objectivity as outwardness—with the qualification that I take its ultimate object to be the *elemental* or *fundamentally real*, rather than just anything *external* to ourselves—and I reject the universalistic alternative.

It is hard for some to recognize outwardness as a real or a genuinely distinct account of objectivity, however. This is in part because of the common tendency to conflate outwardness and universality. Here it helps to consider part of the “fundamental idea” that Thomas Nagel associates with both the value and limits of objectivity: “we are small creatures in a big world of which we have only very partial understanding, and [] how things seem to us depends both on the world and on our constitution.”⁶³⁸ While that is all certainly true, this does not directly legitimate Nagel's universalistic account of objectivity as a 'view from nowhere'.

But two basic implications are clear enough. First, it would be good to have a fuller

635The demands of morality are demands on all moral subjects, of course—but *only* on genuine moral subjects. A tornado is not *morally obligated* to avoid destroying innocent people's houses; nor is it being *selfish* in doing so.

636Or, one might add, *the relationship between a social collective and its individual members*. But this relation is arguably different in kind. For instance, Émile Durkheim consistently distinguishes between *abstract* or *universal* representations, on the one hand, and *collective* representations, on the other—although his sociology of knowledge becomes more radical over time as he identifies more (and more fundamental) representations as collective, *including* highly abstract or 'universal' ones. In *The Elementary Forms of Religious Life* (1912), Durkheim characterizes concepts as “collective representations” (1912/2008, 330)—i.e. as “impersonal” or social representations, rather than abstract or universal ones (ibid., 329). Hence, he suggests that “[t]o think conceptually is not simply to isolate and group together qualities common to a certain number of objects; it is to subsume the variable to the permanent, the individual to the social” (ibid. 334).

637Compare Rawls' claim that 'principles of justice' must be chosen from a hypothetical 'original position' in which people do not know (among other things) their class, social status, natural abilities, or even their own conception of the good. This ignorance purportedly “nullif[ies] the effects of specific contingencies” which might “put men at odds and tempt them to exploit social and natural circumstances to their own advantage” (Rawls 1971, §24).

638Nagel 1986, 5.

understanding of the 'big world' out there, relative to which we are 'small creatures'. This in fact directly motivates an account of objectivity in terms of outwardness—fundamentally, that is, a drive and capacity to understand elemental reality. Second, the fact that our own 'constitution' affects how things appear to us makes it harder for us to achieve this broader understanding of the world. This can be interpreted as the claim that we must account for the impact of our 'constitution' on our perception of things *in order to* better understand the broader world, i.e., as a *means* to objectivity construed as outwardness. Or, this second point can be taken as an endorsement of objectivity construed directly in terms of universality—i.e., as implying that a more objective representation just is one that depends less on how things appear to a given subject in light of its particular 'constitution'.

The connection between objectivity and outwardness is more intuitive than, and likely genealogically prior to, the putative connection between objectivity and universality. Whether articulated in terms of a 'view from nowhere' or 'inter-subjective validity', standard accounts of objectivity are implicitly predicated on the belief that a *broader* perspective on the world, in the relevant sense, just is a *more universal* perspective. But this is by no means obvious. And the scientific ethos suggests a clear alternative: a broader perspective is an *explanatorily deeper* one.

13.4. The modern assault on objectivity has been heavily influenced by the Kantian 'transcendental' turn in metaphysics and epistemology (to repeat a point made above in the Introduction to Chapter I.) For objective representation has been widely construed in terms of seeing things as they are 'in themselves'. And Kantians insist that we cannot achieve this sort of 'unconditioned' vision. According to Kant, we can only experience things as they appear to us mediated by the basic 'forms' of our own cognitive powers. Modern critics amenable to the idea of 'transcendental' contributions made by subjects to their own experience, yet who still conceive of objectivity as direct insight into a domain of 'things-in-themselves', therefore conclude that objectivity is impossible. The result has been the rise of self-alienated 'critical' epistemologists, who on the one hand see knowledge as a valuable form of historically- and culturally-specific collective self-expression, yet who on the other hand implicitly recognize this cultural specificity as a systematic failure of objectivity. Again, this is opposed to Kant's own intent in arguing that subjects actively impose generic cognitive 'forms' on all the possible objects of their experience. But modern critics who view concepts or representation in general as an insuperable epistemic

barrier between us and reality 'in itself', in a way that (they claim) precludes the possibility of knowledge valid for all human beings, are likely now the most influential inheritors of Kant's 'Copernican' insight that 'objects must conform to our cognition.'

Two strategies for avoiding this descent into inescapable subjectivity naturally suggest themselves. First, one can adopt a different conception of objectivity, compatible with the influence of universal human cognitive 'forms', or even culturally-specific representations, on our experience of external objects. This is Kant's and neo-Kantians' approach, as well as that of most contemporary 'critical' epistemologists, social constructivists, and standpoint theorists. Second, one can retain a traditional notion of objective vision as a 'view from nowhere', while arguing contra Kant that we really can achieve this 'unconditioned' perspective. Both strategies are unacceptable. I have already critiqued the second strategy above, in Chapter I, Section 1.5. Hence, let me turn immediately to the first:

13.5. The broadly Kantian strategy for rescuing the possibility of objectivity faces serious difficulties. Roughly speaking, Kant interprets objective validity as inter-subjective validity.⁶³⁹ Hence, he views space, time, and the categories as objective in the sense of being universally and necessarily applicable to the experience of all (but only) beings with our cognitive powers of understanding and sensible intuition.⁶⁴⁰ Empirical concepts and intuitions are in turn objectively valid insofar as they refer immediately (like intuitions) or mediately (like concepts) to actual or possible objects of human experience—i.e. spatiotemporally located objects, with determinate

639This is an oversimplification, for instance insofar as Kant takes judgments of beauty to possess “subjective universal validity” (*KrU* 5:215), hence to be inter-subjectively valid but not objectively valid. (For Kant, judgments of taste are 'subjectively' valid because they are grounded in a *feeling*, albeit one properly elicited in all subjects by beautiful objects: the 'free play' of imagination and understanding). Still, Kant is often associated with the view that objective validity is inter-subjective validity, in a way that grounds part of this view's historical influence. And this view of objectivity does have some truly Kantian roots, which I indicate below.

640E.g. “We can accordingly speak of space, extended beings, and so on, only from the human standpoint. If we depart om the subjective condition under which alone we can acquire outer intuition, namely that through which we may be affected by objects, then the representation of space signifies nothing at all. This predicate is attributed to things only insofar as they appear to us, i.e., are objects of sensibility. The constant form of this receptivity, which we call sensibility, is a necessary condition of all the relations within which objects can be intuited as outside us, and, if one abstracts from these objects, it is a pure intuition, which bears the name of space. Since we cannot make the special conditions of sensibility into conditions of the possibility of things, but only of their appearances, we can well say that space comprehends all things that may appear to us externally, but not all things in themselves, whether they be intuited or not, or by whatever subject they may be intuited. For we cannot judge at all whether the intuitions of other thinking beings are bound to the same conditions that limit our intuition and that are universally valid for us. If we add the limitation of a judgment to the concept of the subject, then the judgment is unconditionally valid” (*KrV* A26/B42 – A27/B43).

quantity, quality, relation, and modality.⁶⁴¹ Kant's view entails that space, time, and the categories really do 'apply' to all possible objects of experience, since he takes these to be things *insofar as they appear to us*. Because we are conscious of appearances and not things-in-themselves, that is, (Kant thinks) we can know a priori that every empirical object we come across will conform to the laws of (Euclidean) geometry, the principle that every event has a cause, and so on.

Yet the fact that we cannot know things as they are in themselves clearly remains problematic, for Kant, as I argued above in the Introduction to Chapter I. Again, while Kantians and latter-day 'critical' epistemologists insist that 'unconditioned' knowledge is impossible, that is, they often still implicitly treat it as desirable—an unrealizable ideal. Hence, the claim that objectivity requires only inter-subjective validity is often made in bad faith, at least to some extent. It would take me too far afield to fully justify this claim here. But two basic points are here salient. First, and again to repeat a point made above in the Introduction to Chapter I, Kant allows that a purely rational being with a non-sensible power of 'intellectual intuition' could have objective knowledge of things insofar as they are immediately given to them in purely conceptual form. This is what he means by 'transcendent' knowledge of things qua *noumena* rather than empirical knowledge of sensible *phenomena* (*KrV* A248-250 / B305). And Kant describes God's knowledge as intellectual intuition (*KrV* B72). At least implicitly, then, Kant treats our intersubjectively-valid knowledge as *less valuable* than God's unconditioned knowledge of noumenal reality.

Second, and with respect to contemporary 'critical' epistemology, note that some (not all) modern 'standpoint theory' is aptly characterized as follows: theorists insist that the pursuit of truth is always 'interested'; hence, they criticize advocates of the positivistic ideal of value-free science for smuggling in extra-epistemic value judgments under a veneer of 'disinterestedly pursuing of the truth'; but the same critics then try to show that the moral or political values which they believe should guide inquiry are *epistemically* privileged, in a sense that everyone should find significant *simply insofar as they are committed to the pursuit of truth*. Some standpoint theorists thus seem to be saying, 'Science isn't just about truth; it's inherently *political*...But our politics is also *epistemically better* than other politics, including the sham "apoliticism" of positivism, *and this is why our politics should be accepted even by our political*

641 *KrV* A80 / B106.

opponents as a guiding framework for scientific inquiry.' Hence, some standpoint theorists apparently claim that marginalized social positions' epistemic privilege is a fact visible from 'nowhere'. A weaker form of standpoint theory, which I find more plausible (although by no means obviously correct), simply involves claiming that 'starting off thought' from standpoints grounded in marginalized social positions provides privileged insight into "certain features of reality"⁶⁴² that are especially ethically or politically significant (at least, by standpoint theorists' lights).

But many standpoint theorists, including Jaggar, make expansive epistemological claims that clearly go beyond assertions of privileged insight into 'certain features' of reality that are noteworthy *simply* for their disproportionate ethical or political significance.⁶⁴³ On my view, these more radical standpoint theorists either (i) in fact endorse the 'view from nowhere' (or at least the 'view from universal humanity') that they purport to reject, as the standard with respect to which their claims about epistemic privilege are implicitly meant to be justified; (ii) are just substituting ethical or political value judgments for judgments of epistemic or explanatory value; or else (iii) should accept my account of scientific objectivity as a view from *explanatory fundamentals*, and hence simply try to defend the empirical scientific claim that marginalized social standpoints are *explanatorily* central—without insisting that their (often contested) moral or political salience is (any less controversially) direct evidence of this explanatory centrality.

These internal tensions are all already bad enough. But Kantians, standpoint theorists, social constructivists, and so on are also *right* to be dissatisfied (insofar as they are) with the forms of inter-subjective validity that they do take to be available to us. Kant's notion of inter-subjective validity is grossly anthropocentric. We are human beings, of course, and so in a tautological sense we must view things from a human standpoint. But we can and should nevertheless aim to rise above petty self-aggrandizement and collective solipsism. It would be

⁶⁴²Jaggar 2004, 60.

⁶⁴³Thus on Jaggar's view "the socialist feminist concept of women's standpoint" is a "valuable *epistemological* device for identifying certain *necessary conditions of theoretical adequacy*," and provides a "theoretically illuminating interpretation of such generally acknowledged conditions as impartiality, objectivity, comprehensiveness, verifiability, and usefulness" (Jaggar 2004, 61, emphasis added). Likewise, Sandra Harding insists that "[s]tarting off research from women's lives will generate less partial and distorted accounts *not only of women's lives but also of men's lives and of the whole social order*" (Harding 1993, 56, emphases added), and similarly that "[d]emocracy-advancing values have systematically generated less partial and distorted beliefs than others" (Harding 1993, 71) So too, in suggesting that "it is precisely in the politics and epistemology of partial perspectives that the possibility of sustained, rational, objective enquiry rests," Donna Haraway evidently makes a fully general claim about genuine knowledge: "partiality and not universality" is on her view "the condition of being heard to make rational knowledge claims" (Haraway 1988, 584, 587-590).

bad if everything we knew about the world were twisted into the image of our own interests and powers as human beings—unless, of course, humanity were actually the focal point of all reality. But humanity is not the central axis of reality, and a theory of objectivity should not present us as such. This criticism applies even more so to contemporary social constructivism and standpoint theory. It would be *bad* if everything we knew about the world were essentially an expression of the structure and values of historically- and culturally-specific social formations. And it would be *even worse* if everything we knew about the world were inevitably twisted into the image of our own positions in systems of social hierarchy—if our view of everything in reality were essentially just a more or less direct expression of our social identities as oppressive exploiters, or oppressed subalterns, or men, or women, let alone finer-grained categories of all kinds.

Leftist critical epistemologists and standpoint theorists tend to criticize Kantian accounts of objectivity on totally different grounds. Namely, many critics simply deny that there is a singular form of experience valid for all human beings, across all cultures and all of history. Hence, many critics are dissatisfied even with 'procedural' characterizations of objectivity as a form of epistemic legitimacy that judgments possess insofar as they are (i) available in principle for inter-subjective criticism by any and all people, or else (ii) actually subjected to such criticism. Briefly surveying the theoretical landscape here will allow me to offer several more targeted points of critique, which will in turn clarify the relationship between my view and standard objections to excessive universalism in Enlightenment accounts of objectivity.

The first of these two accounts of procedural objectivity, i.e. availability merely *in principle* for inter-subjective criticism by any and all people, clearly informs Karl Popper's falsificationism. And in this respect, Popper's view is explicitly Kantian.⁶⁴⁴ But the ideal of in-principle availability for inter-subjective criticism also implicitly informs *all* empiricists' basic premise that synthetic judgments can be justified only insofar as they are grounded in 'observable' phenomena. Whether this 'empirical basis' is characterized as by classical empiricists in terms of mental impressions, or as by modern 'constructive' empiricists in terms of external phenomena like trees, rocks, and the movement of needles on dials in laboratories, we may ask: by *whom* are 'empirical' phenomena 'observable'? Empiricists' essentially liberal-universalistic

644“My use of the terms ‘objective’ and ‘subjective’ is not unlike Kant’s. He uses the word ‘objective’ to indicate that scientific knowledge should be justifiable, independently of anybody’s whim: a justification is ‘objective’ if in principle it can be tested and understood by anybody.[...]n. I have since generalized this formulation; for inter-subjective testing is merely a very important aspect of the more general idea of inter-subjective criticism, or in other words, of the idea of mutual rational control by critical discussion]” (Popper 1935/2002, 22).

response has always been clear: 'Empirical phenomena are those that can be directly perceived by *everyone*, or by *any normal person*, at least in principle.' Hence, the conception of objectivity as in-principle availability for inter-subjective criticism by all human beings also underlies early logical positivists' insistence that empirically significant claims must be translatable into a pure 'observation language', and modern constructive empiricists' belief that the 'aim' of science is not comprehensive truth but just adequacy to observable phenomena.⁶⁴⁵

Modern objectivity-critics are quick to raise skeptical doubts about the putative neutrality of direct 'experience' or 'observation'. They often insist with Kuhn, Hanson, Feyerabend, and others that observation is always 'theory-laden',⁶⁴⁶ and hence argue that *different* phenomena are presumably 'observable' to people in different social contexts, informed by different background knowledge and assumptions. Partly on this basis, critics may add that 'observation' is often if not always *value*-laden. Here, objectivity-critics' worries are only amplified by the many concessions that modern philosophers of science have made to fallibilism and pragmatism. For instance, Popper admits that scientists' designation of certain claims as observably-true 'basic statements' is at root pragmatic: observable claims are at root just those "about whose acceptance or rejection [] various investigators are likely to reach agreement."⁶⁴⁷ But then different phenomena would evidently be 'observable' for different groups of inquirers. And Popper offers no strategy for justifiably privileging some groups' essentially-pragmatic designations of observability (i.e., the 'basicness' of certain statements) over others'.

One could stipulate on Popper's behalf that judgments of 'likely agreement' should be indexed to a *universal human* community of inquirers. But modern critics of objectivity will inevitably remain skeptical on several fronts: first, that any such 'universal epistemic community' exists; relatedly, that people universally agree about much at all, especially when it comes to 'observations' concerning ethically- or politically-loaded issues; and finally, that there is any good reason to privilege the 'likely agreement' of an imaginary universal human epistemic community over that of real, smaller groups of inquirers embedded in specific social contexts that systematically inform their powers of observation.

The second point might sound glib, but in fact is a serious and widely-noted concern. For example, Galileo 'observed' mountains on the Moon only under the background assumption that

645Van Fraassen 1980, 198.

646See Kuhn 1962, Hanson 1958, and Feyerabend 1958.

647Popper 1935/2002, 86. See also Lakatos 1970, 105ff.

he had a correct understanding of the optical theory underlying his telescope, and that the pattern of light and dark he saw on the Moon was best explained by the presence of mountains. And in fact, Aristotelians in the 17th century contested both of these auxiliary hypotheses. (Roger Ariew argues that telescopic observations played a lesser role in this controversy, whereas Galileo's interpretation of lunar spots as mountains presupposed that lunar light is reflected sunlight, which many scholastics denied. Hence, Ariew concludes that “Galileo’s observation of mountains on the moon[...]cannot succeed in destroying the medieval lunar theory; it can only be an independent account of the moon and lunar light based on radically different premises.”⁶⁴⁸) More generally, examples like this suggest that uncontested 'observation' statements are harder to come by than those unfamiliar with science might suppose. Scientists are also often quite good at accommodating uncontroversial observation statements by means of auxiliary hypotheses. Both of these facts imply that the explanatory criterion of empirical adequacy has a somewhat weaker effect on scientific theory choice than one might naively imagine. As Duhem and Quine both noted, in short, apparent empirical inadequacy or inaccuracy is often better described as *inconsistency* between a given theory under investigation, a set of observational data whose status as uncontroversial is in principle up for debate, and a set of auxiliary hypotheses by means of which these data are brought into contact with the theory under investigation.⁶⁴⁹

The pragmatic character of 'observability' also threatens to undermine the inter-subjective validity of science as construed by Bas van Fraassen's 'constructive' empiricism. Van Fraassen accepts that language cannot be neatly divided into 'observable' and 'theoretical' parts, as was attempted by early logical empiricists and positivists. Thus, he voices his “total agreement” with

⁶⁴⁸Ariew 1984, 223. Notably, Ariew argues that the telescope “merely gives some new details concerning the shape of the spots on the lunar disk,” and “[a] slightly impoverished form of the same argument could have been given after naked eye observations of the spots on the lunar surface (the man on the moon)” —naked eye observations which had already been made prior to Galileo (ibid., 214-215). Cf. Fred Wilson's argument to the effect that “observations of the moon made by the telescope did play a crucial role in refuting the traditional theory” (Wilson 2001, 14). See Ariew 2001 for a response to Wilson.

⁶⁴⁹See Duhem 1906/1991 (esp. Part II, Chapter VI) and Quine 1951. See also Lakatos 1970, 97-103. As a descriptive matter, it seems clear that scientists in fact reject a naive falsificationist commitment to preserving the truth of 'observation' statements at all costs. As Hempel says, “science offers various examples [where] a conflict between a highly-confirmed theory and an occasional recalcitrant experiential sentence may well be resolved by revoking the latter rather than sacrificing the former” (quoted in Lakatos 1970, 113). Lakatos agrees with Hempel on this point, and articulates a more sophisticated version of methodological falsificationism that accommodates it, grounded in an explanatory norm of *increasing* 'empirical' content. Normatively speaking, however, I cannot see why conventionalism about singular—i.e. 'observational' statements—is, as Lakatos claims, “more objective and more rigorous” than a methodology that also allows for some degree of conventionalism regarding universal ('theoretical') statements, à la Poincaré and Duhem.

Wilfred Sellars and Paul Feyerabend that “language is thoroughly theory-infected.”⁶⁵⁰ But van Fraassen still insists that the distinction between observable and unobservable phenomena is “theory-independent.”⁶⁵¹ Namely, he claims that facts about observability follow from (‘theory-independent’) facts about human physiology, psychology, and so forth—e.g., because our eyes and brains work thus-and-so, we can see dogs and red light but not quarks or infrared radiation.

Hence, constructive empiricism is rooted in a self-avowedly “anthropocentric” notion of observability,⁶⁵² which is nevertheless evidently meant to apply across diverse social contexts. For example, human beings 20,000 years ago presumably lacked anything exactly like our concept [dog], since dogs had yet to be domesticated; but van Fraassen would evidently insist that dogs *could have been* observed by people at that time, had they been around, in a way that quarks could not have been. Of course, if a modern dog were transported to an ancient society, it might well be classified differently by the members of this society—e.g. they might perceive it *as* a wolf or coyote. Regardless, these ancient humans would surely still be able to directly perceive the given animal, without the aid of any external instruments like microscopes or spectrographs. So a constructive empiricist would insist that dogs are not only observable now, but were also observable before human beings formed the concept [dog], and indeed were observable even before any dogs or people actually existed.⁶⁵³

But critics should not be satisfied with this. Insofar as constructive empiricists intend to ground the inter-subjective validity of scientific representation in its relation to observable phenomena, i.e. those directly perceivable by human beings in general, they face an insuperable problem. Even if facts about observability are ‘theory-independent’, nevertheless our best judgments about observability are theory-dependent. Thus, van Fraassen himself believes that our best understanding of what is observable depends on our best scientific theories of ‘us qua

650van Fraassen 1980, 14. See also van Fraassen 2008, 144. Cf., paradigmatically, Carnap 1928/2003.

651van Fraassen 1980, 14.

652van Fraassen 1980, 59. Likewise, in a response to critics van Fraassen (1985, 254) clarifies that “[he] always assume[s] that we (the epistemic community) are all humans, and no one of us is really a person from Krypton.” But he then proceeds to allow that “[s]ignificant encounters with dolphins, extraterrestrials, or the products of our own genetic engineering may lead us to widen the epistemic community,” and in cases where we have accepted such entities “as persons, as members of our epistemic community,[...]we have already broadened the extension of *us*, and what is observable to them is observable” (ibid.).

653Constructive empiricists’ view on this point bears some similarity to common objections against Bruno Latour’s brand of ‘social constructivism’. Latour (in)famously insists that Ramses II (d. 1213 BC) could not have died of tuberculosis, because (he asks) “How could he pass away due to a bacillus discovered by Robert Koch in 1882?” (Latour 2000, 248). Paul Boghossian suggests that Latour here simply decides to “bite the bullet” by denying the intuitive view that “[t]he world did not begin with us humans; many facts about it obtained before we did” (Boghossian 2006, 26). I agree with Boghossian that this is a mistake on Latour’s part. Cf. Latour 1999, 2000.

organisms in the world.' But he also believes that scientists' acceptance of theories—presumably including theories about 'us qua organisms in the world'—is properly determined by these theories' (i) empirical adequacy and (ii) realization of super-empirical aims like “simplicity, informativeness, predictive power, [and] explanation.”⁶⁵⁴ And he believes that the latter, super-empirical aims are essentially *pragmatic* in character.⁶⁵⁵ So if our best judgments of observability are those grounded in our best scientific theories of human physiology and psychology, and if our acceptance of the latter theories is grounded partly in pragmatic considerations, then our best judgments of observability will always be conditioned by these same pragmatic appraisals of 'use and usefulness'—which evidently depend upon cultural and historical context. Thus constructive empiricists aiming to defend the validity of scientific knowledge for all human beings are hoist on the petard of their own anti-realism. Van Fraassen's own account of how pragmatic considerations inform theory choice suggests that objective scientific representations are not actually valid for all human beings, given that 'use and usefulness' can vary across contexts.

This threat of relativism grounded in epistemological pragmatism also affects Ernst Mach's scientific 'instrumentalism'. Mach takes super-empirical theoretical virtues like simplicity and scope to reflect our essentially pragmatic preference for systematicity in the organization of experimental laws and data. (Duhem is sometimes grouped with Mach in this context, but this is an interpretive mistake.⁶⁵⁶) It is obviously useful to us to be able to predict and control various features of our environment, and instrumentalists argue that a preference for systematic theories helps us to order the information at our disposal into cognitively manageable and readily communicable forms. Hence, super-empirical virtues are justified pragmatically, not epistemically, with an eye towards realizing an “exquisite economy of thought.”⁶⁵⁷

It is hard to see how scientific judgments about unobservable entities could possess equal validity for all human beings, given this view. For this to be possible, pragmatic appraisals of

⁶⁵⁴Van Fraassen 1980, 9. Van Fraassen invokes virtues like logical consistency as aspects of theories' 'internal structure', and differentiates these structural features from both empirical adequacy and pragmatic virtues.

⁶⁵⁵“In so far as they go beyond consistency, empirical adequacy, and empirical strength, [theoretical virtues] do not concern the relation between the theory and the world, but rather the use and usefulness of the theory; they provide reasons to prefer the theory independently of questions of truth” (van Fraassen 1980, 88).

⁶⁵⁶Systematicity is also an aesthetic virtue, on Duhem's view—see. e.g. Duhem 1906/1991, 24). More importantly, Duhem notes intuitive links between superempirical theoretical virtues and truth, claims that we cannot justify these intuitive links, and yet retains a place for them as necessary 'acts of faith' (Duhem 1906/1991, 26-7). Representatively: “Without being able to explain our conviction, but also without being able to get rid of it, we see in the exact ordering of this system the mark by which a natural classification is recognized. Without claiming to explain the reality hiding under the phenomena whose laws we group, we feel that the groupings established by our theory correspond to real affinities among the things themselves” (Duhem 1906/1991, 26).

⁶⁵⁷Mach 1882/1895, 198.

'intellectual economy' would need to be valid for all human beings. But that is difficult to accept.

More importantly, though, even if they were valid universally, pragmatic value judgments would not be an appropriate basis for appraisals of objectivity. To treat the quest for objectivity as an exercise in pragmatics is to degrade the ideal of objective vision, to wallow inwardly in anthropocentric self-regard. Scientific theories display the pragmatic virtue of intellectual economy because they make contact with an underlying reality that systematically explains appearances. The pragmatic benefit of intellectual economy is a subjective result of the drive towards objective reality, not its fundamental goal.

13.6. My own view is that observation is indeed 'theory-laden', but that this does not seriously undermine the inter-subjective validity of genuine empirical science. However, scientific representations are not objectively valid *because* they are thus inter-subjectively valid.

Observability in the sense relevant to empirical science is a joint pragmatic-psychological designation, grounded in a liberal-universalistic appeal to the amenability of certain natural phenomena to direct sensory perception by more or less anyone. Only sensible objects, i.e. things with sensory qualities, can be 'observed' or 'directly perceived', in the sense relevant to empirical science. But direct sensory perception *that* a given thing is a *certain kind* of observable object also requires the pre-conscious use of a corresponding concept. To directly perceive that something is a tree, for instance, one must immediately experience it *as* a tree. This notion of 'immediate experience' can perhaps be effectively analyzed via psychology. But its actual use in empirical science is essentially phenomenological: there is a qualitative difference between perceiving a given thing *as* a tree, or *as* a person, or *as* moving, and merely perceiving something that *is in fact* a tree, or a person, or moving. This distinction is properly incorporated into the basic meaning of scientific 'observation'. That is, to observe a dog, in the sense relevant to science, is to observe something *as* a dog. To 'observe' a dog without perceiving it *as* a dog is really just to observe another conceptually-determinate kind of thing or else a purely indeterminate *something*, from which the existence of a dog can at most be indirectly inferred.

Genuine empirical scientific observations and facts about observability are 'theory-laden', then, in the weak sense of being mediated by specific conceptual frameworks for parsing observable phenomena. It matters to scientific epistemology whether one observes the mountains on the Moon through the telescope *as* the mountains on the Moon, or just 'observes' them *as* a

pattern of light and dark in the telescope lens itself. Hence, what we are and are not able to directly perceive does indeed vary as our theoretical understanding of the world changes. Feyerabend is right that “the interpretation of an observation-language is determined by the theories which we use to explain what we observe, and it changes as soon as those theories change.”⁶⁵⁸ But humans in fact have enough stable folk-theoretical common ground that science can still be empirically progressive or accumulative at the level of observable facts—which it uncontroversially is. Genuine empirical scientific observations are laden with theoretical schema that already inform most human beings' immediate sensory perception, or which at least can be uncontroversially resorted to in most cases of contested observation. For instance, even someone who directly perceives or immediately apprehends the Moon through a telescope can easily be made to resort to an alternate mode of perception that instead makes the pattern of light and dark in the telescope lens the object of his immediate perception. Different people and cultures inevitably bring different theoretical background assumptions to empirical inquiry, which can in principle seriously compromise scientists' ability to reach universal agreement about which claims are observably true. But this abstract possibility is often not actually borne out in scientific practice, as is clearly evidenced by the existence of robust and ever-expanding bodies of uncontroversial factual claims generated by modern science. This is not especially surprising, moreover, given that we are all members of the same biological species, with many shared physiological features, psychological faculties, and even sociocultural practices (e.g. language use, generically speaking, or the social salience of direct kinship relations). To the extent that uncontested observation does at times prove impossible in a way that genuinely precludes empirically progressive inquiry, finally, this is evidently more common in the humanities and social sciences than in the biological or physical sciences.

Still, in true empirical science every statement of observable fact is fallible, and in principle open to debate. Galileo's observation of mountains on the Moon could have turned out to involve his misinterpretation of more immediate observations of images in a telescope lens. Reported measurements of the position of a needle on a dial during a laboratory experiment may have been compromised by human error, or by a malfunctioning measurement device. And so on. Hence, it can never be infallibly guaranteed that a purported observation is a genuine observation, rather than a 'hypothetical' or 'theoretical' claim masquerading as an observation.

⁶⁵⁸Feyerabend 1958, 163. See also Feyerabend 1993, 211-212.

But confirmation in empirical science is ultimately predicated on the a priori assumption that *genuine* observations, of phenomena that would plausibly be directly perceived by more or less any competent human being, are veridical. To see this, note that if you are given a set of made-up 'empirical data' or falsified 'observations' and attempt to explain them, the theories you produce will not describe real unobservable things, just the unobservable ontology of a fictional world. At root, then, in empirical science we know that unobservable things exist because they successfully explain observable things that we know to exist by simple common sense. Empirical science is thus essentially liberal-universalistic, or epistemologically mass-democratic.

Genuine observation in the scientific sense is often possible, although not always. And genuine observation has as good a claim to factual truth as anything we know about the external world. But the factuality or inter-subjective validity of obvious empirical truths is not directly responsible for the objectivity of science. This is one way in which my view differs from empiricism. Objective reality is not mere existence or facticity, even for empirical scientific understanding—let alone for non-scientific modes of understanding like aesthetic experience. Observable things are objective *appearances*, for empirical science. And they become *objective* appearances for science only insofar as they are explained by appeal to unobservable reality.

This last point is the crucial one, in terms of understanding the objectivity of science. The 'empirical basis' functions in science as the paradigm of that which truly exists or actually happens. No scientific advancement could undermine our confidence that rocks, tables, and human beings exist. This is undeniable to all but Cartesian skeptics, who are trapped inside their own minds in a way that is plainly pathological—and indeed *subjective*, in the sense of being unduly *interior* or *inwardly-focused*.⁶⁵⁹ But a plainly observable phenomenon like the position of a needle on a dial in a laboratory has no inherent scientific significance. Neither observable nor unobservable things are scientifically intelligible in themselves. Scientific understanding takes obviously-existent, *inter-subjectively real* observable phenomena and constitutes them as *objectively real* by relating them to explanatorily-fundamental aspects of the unobservable world.

This is not to claim that genuine scientific explanation must 'bottom out' in *strictly* unobservable things. It is conceivable that explanatory-fundamental things have sensible

⁶⁵⁹Cartesian skepticism is predicated on a misguided demand for an answer to the question, 'Is the external world really real?' Only someone already fallen prey to hypertrophied subjectivity—to excessive interiority and inadequate receptivity to broader reality—could find this question fully intelligible, let alone urgent. Compare Werner Heisenberg's argument (1958, 88) that natural science is possible without any sort of commitment to "metaphysical realism," or attention to the correlative "disagreeable question whether 'the things really exist.'"

qualities like colors or smells. But our distinctively scientific knowledge of them would still be *inferential*, via apprehension of their explanatory power, not immediate sensory perception. Thus science presents underlying reality *qua* imperceptible, even if it *also* has sensory qualities. The basic objects of modern physics, in particular, do however seem to be *strictly* unobservable.

13.7. The second broadly Kantian account of procedural objectivity mentioned above, i.e. inter-subjective validity grounded in actively subjecting claims to public critical scrutiny, is often even more explicitly related to liberal-democratic idealizations of science. This procedural notion of objectivity clearly informs Imre Lakatos' refined Popperian 'methodology of scientific research programmes'.⁶⁶⁰ But it also underlies more overtly politicized accounts, like Jürgen Habermas' theory of 'communicative rationality' realized through 'rational-critical' debate in a universally-accessible 'public sphere',⁶⁶¹ or Helen Longino's theory of objectivity as a social process involving knowledge-claims' subjection to critical scrutiny by communities in which “all relevant perspectives are represented.”⁶⁶² Leftist critics object that these sort of liberal views, whether about scientific objectivity or objectivity in our collective epistemic practices more broadly, are naively utopian and politically counterproductive insofar as they idealize “universal access” to the sphere of 'public reason'.⁶⁶³ *In the real world, leftists chide, access to the 'public sphere' is always restricted, in ways that reflect and reinforce broader patterns of social discrimination and unjust hierarchy. The 'public sphere' is not just contingently exclusionary, but essentially exclusionary!* Thus Nancy Fraser insists that “[w]e can no longer assume that the bourgeois [] public sphere was simply an unrealized utopian ideal; it was also a masculinist ideological notion that functioned to legitimate an emergent form of class rule.”⁶⁶⁴

660See Lakatos 1978.

661Habermas 1981, 1991.

662Longino 1996, 40. (Longino explains that “This criterion is meant to impose duties of inclusion; it does not require that each individual, no matter what their past record or state of training, should be granted equal authority on every matter” (ibid.).)

663E.g. Habermas (1991, 85) claims that “[t]he public sphere of civil society stood or fell with the principle of universal access.”

664Fraser 1989, 116. Fraser argues that Habermas' (1991) account of the bourgeois public sphere incorporates several “dubious assumptions,” including (1) the assumption that it is possible for all members of the public sphere to “bracket status differentials and to deliberate *as if* they were social equals,” and thus that the bourgeois public sphere is universally accessible; and (2) the assumption that a “single, comprehensive public sphere is always preferable to a nexus of multiple publics” (Fraser 1989, 117). Regarding (2), however, Fraser is herself committed to the desirability and possibility of a grand public sphere, predicated on conditions of social equality, in which rational-critical debate between diverse “publics” (as opposed to individuals) can occur. She advocates “a society of many different publics, including at least one public in which participants can deliberate as peers across lines of difference about policy that concerns them all” (ibid., 127).

Notably, however, Habermas agrees with his critics that the *bourgeois* public sphere's claim to include all “human beings pure and simple” was a historical “fiction.” He suggests, plausibly, that this fiction persisted in part because the bourgeois public sphere's universalistic rhetoric really did function, for a certain period of historical development, to undermine pre-bourgeois structures of political and economic hierarchy.⁶⁶⁵ But the same universalizing tendency in the bourgeois *conception* of the public sphere ultimately contributed to the dissolution of the bourgeois public sphere itself. It, too, was built upon systems of social domination, including the hierarchical structure of the “patriarchal conjugal family,” and so conspicuously failed to realize its own universalistic ideals.⁶⁶⁶ Nevertheless, Habermas holds out hope for the creation of a truly universal public sphere. Indeed, he optimistically claims that we have a better chance of producing true 'critical publicity' now, in the modern social-welfare state, than people did in the context of the “bourgeois public sphere during the period of its liberal development.”⁶⁶⁷

Illiberal critics of 'public reason' have good reason to be less optimistic. Habermas rightly insists that public debate cannot be “rational-critical” unless all parties involved share some common ground,⁶⁶⁸ i.e., a “general interest” with a genuine “possibility of mutual satisfaction,” as opposed to the “antagonistic edge” characteristic of 'haggling' driven by mere “competing needs.”⁶⁶⁹ For otherwise 'public debate' will be reduced to raw power-jockeying, even if this is masked by a veneer of critically-impotent faux 'arguments'⁶⁷⁰—as is all too true of America

665Habermas 1991, 55-6.

666“[T]he dependence of the wife and children on the male head of the family; private autonomy in the [economic] realm was transformed into authority in the [domestic] and made any pretended freedom of individuals illusory” (Habermas 1991, 47); “On the basis of the continuing domination of one class over another, the dominant [bourgeois] class nevertheless developed political institutions which credibly embodied as their objective meaning the idea of their own abolition” (ibid., 88); “[T]he contradiction of the public sphere that was institutionalized in the bourgeois constitutional state came to the fore. With the help of its principle, which according to its own idea was opposed to all domination, a political order was founded whose social basis did not make domination superfluous after all” (ibid., 88).

667Habermas 1991, 235. Here Habermas characterizes the dynamics of the social-welfare state as the “conclusion” of the dialectic of the bourgeois idea of publicity, which had been mere “ideology” in “its liberal development.”

668“[T]he criteria of rationality are completely lacking in a consensus created by sophisticated opinion-molding services under the aegis of a sham public interest. Intelligent criticism of publicly discussed affairs gives way before a mood of conformity with publicly presented persons or personifications” (Habermas 1991, 195).

669Habermas 1991, 234.

670“[A]s soon as private interests, collectively organized, were compelled to assume political form, the public sphere necessarily became an arena in which conflicts also had to be settled that transformed the structure of political compromise from the ground up. The public sphere was burdened with the tasks of settling conflicts of interest that could not be accommodated within the classical forms of parliamentary consensus and agreement; their settlements bore the marks of their origins in the sphere of the market. Compromise literally had to be haggled out, produced temporarily through pressure and counterpressure and supported directly only through the unstable equilibrium of a power constellation between state apparatus and interest groups.[...]Admittedly, on the one hand the forum of the public sphere had been expanded. But on the other hand, because the balancing of

today. However, mass-democracy arguably precludes the possibility of a true general interest common to all its citizens. Habermas himself observes that the modern degradation of public discourse has been systematically intertwined with the rise of mass-democratic politics: “[Political] parties were now confronted with the job of 'integrating' the mass of the citizenry (no longer really 'bourgeois'), with the help of new methods, for the purpose of getting their votes. The gathering of voters for the sake of bringing the local delegate to account had to make room for systematic propaganda[...] [The parties are not] in the hands of the public but in the hands of those who control the party apparatus.”⁶⁷¹ Hence, in late modernity, “[p]ublicity loses its critical function in favor of a staged display; even arguments are transmuted into symbols to which again one can not respond by arguing but only by identifying with them.”⁶⁷²

But Habermas fails to draw the obvious conclusion. It is *not* plausible that “[t]he outcome of the struggle between a critical publicity and one that is merely staged for manipulative purposes remains open,” as he claims.⁶⁷³ Rather, his own historical analysis if anything suggests a starkly illiberal lesson. Namely, the very same mass-democratizing processes that have produced increasingly universal access to the public sphere in modernity, have also progressively dissolved the general interest and thereby degraded public discourse into the mere 'haggling out of compromises' between competing interest-groups.⁶⁷⁴ In the absence of evidence to the contrary, it is also fair to infer that this causal link still holds.

In short, Habermas fails to carry his own argument through to its natural conclusion. A genuine liberal public sphere must be universally accessible. But in heterogeneous mass-democratic societies, which are recommended by the same moralistic ethos underlying this ideal of universal accessibility, guaranteeing democratic access to the public sphere predictably comes at the expense of depleting the stock of substantive interests shared by all its participants. This in turn precludes true 'rational-critical' discourse, as opposed to haggling driven by competing private interests. Hence, procedural objectivity based in liberal-democratic notions of public

interests continued to be linked to the liberal claim of this public sphere (which is to say, to legitimation in terms of the common welfare) without being able to fulfill it or to evade it entirely, the haggling out of compromises moved to extraparliamentary sites” (Habermas 1991, 197-8).

671 Habermas 1991, 206.

672 *ibid.*, 203.

673 Habermas 1991, 325.

674 Lest I be misunderstood: the push towards equal social recognition and political rights for racial, religious, and sexual minorities, women, working-class and poor people, etc., has obviously produced many real advances. My argument does not imply anything to the contrary. I am just suggesting that some of these real advances have come at the expense of creating or exacerbating some equally real problems, for perfectly understandable and apparently systematic reasons.

reason is an unrealistic if not impossible goal, constituted by mutually incompatible ideals of a universal public sphere and a general interest strong enough to forestall partisan haggling.

The procedural ideal of critical publicity reflects an overly anthropocentric interpretation of objectivity. A well-functioning Habermasian public sphere would fail to be objective insofar as its participants remained collectively trapped in an order of inter-subjective appearances, that is, collectively inattentive to fundamental reality. But the Habermasian ideal of rational-critical discourse is also impossible to realize in practice, at least in a public sphere operating at the scale of universal accessibility that this ideal itself recommends. In both respects, the underlying problem with Habermas' view, as with any broadly Kantian theory of procedural objectivity achieved through rational-critical discourse, is its moralism. People are not all essentially equal epistemic agents (read: rational souls), nor is this a worthy political ideal. The utopia Habermas envisions is in fact an anthropocentric dystopia, in which the drive to apprehend and affirm objective reality has been supplanted by a moralistic quest for universal rational consensus.

Habermas might object that critical publicity is intended as a merely regulative ideal—impossible to realize in practice, perhaps, but still necessarily posited as an ideal horizon that provides normative orientation to our shared epistemic practices.⁶⁷⁵ The same point could also be made by those like Karl Popper, Helen Longino, Philip Kitcher, or Heather Douglas, who emphasize democratic accountability in science, specifically.⁶⁷⁶ But the Habermasian ideal is still criticizable for relying on a false and moralistic conception of humans. It still matters that, as Raymond Geuss observes, one cannot plausibly impute to most people in real societies past or present Habermas' notion that beliefs are true if they would be the objects of universal rational consensus.⁶⁷⁷ There are and have been many genuine epistemic agents who do not implicitly rely on the liberal-democratic ideal of universal rational consensus. Other ideals can also orient our shared epistemic life, but can do so more objectively, and without producing the same internal tension or falsifying human nature—saliently, the ideal of *collectively understanding reality*.

13.8. The full universalistic 'view from nowhere' and the semi-universalistic Kantian 'view from inter-subjectivity' are both overly inward. The 'view from nowhere' either just reports facts indiscriminately, or else promises unmediated access to reality conceived in the image of

675For a helpful summary, see Geuss 1981, 66.

676See Popper 1945; Longino 1990; Kitcher 2001, 2011; and Douglas 2009. See also Bronowski 1965.

677Geuss 1981, 66-7. Geuss refers to “universal consensus under ideal conditions,” understood as the 'ideal speech situation' of “absolutely uncoerced and unlimited discussion between completely free and equal human agents.”

our own rationality. Hence, the 'real' becomes that which appears to an infinite disembodied Mind—the universal form of things, the rational principles underlying natural flux, the essentially intelligible Laws of Nature, the domain of ideal Forms, the self-knowledge of Spirit.⁶⁷⁸ This is excessive inwardness and hypertrophied *subjectivity*. Kant implicitly retains and valorizes this Mind's-eye-view by positing the thing-in-itself. But on top of this, he also superimposes a domain of *objects*—things as they appear mediated by distinctively human cognitive powers of understanding and sensible intuition, as opposed to these (same) things as they are in themselves. To the God's-eye or Mind's-eye view, Kant thus appends an Embodied-Mind's-eye view. Hence, the 'real' becomes the 'object' that appears to a generic sensuous-rational being like ourselves. This, too, is excessive inwardness and hypertrophied subjectivity. In turn, social constructivists and standpoint theorists insist that there is no 'universal human' form of experience, only diverse forms of experience specific to local cultural contexts, or even to particular social positions therein—social positions that become increasingly esoteric and hyper-individualized as this analysis proceeds over time. Hence, the 'real' ultimately becomes pure, unabashed appearance for particular subjects. This, too, is excessive inwardness and hypertrophied subjectivity.

Understood correctly in terms of *outwardness* rather than universality or particularity, objectivity is an orientation towards *reality*. But what is reality? The real is not the universal or the purely rational. The real is not Platonic Form. The real is not that which exists as an Idea for infinite Mind. The real is not the indeterminate thing-in-itself. The real is not the determinate object of generic human cognition. The real is not that which appears only to specific social collectives, let alone individual members thereof. The real is not the entirety of things that exist. The real is not everything that is the case. The real is not the empirical. The real is not God.

The real—the 'really real'—is that which explains and underlies appearances. The real is the fundamental, the basic, the elemental, the essential ground of all else. The real is that which determines things, whether it be other things or itself, as the objects through which it appears. The real is that which exerts determinative force in relation to its objects. And the reality of that which is real is its determinative force. The real is power. And reality itself is power.

Objectivity is an outward orientation towards reality. Objectivity is receptivity to that which underlies and explains our own being, among other natural phenomena. Objectivity is the

⁶⁷⁸I do not claim that these notions are identical in all respects; I claim that they are identical in essential spirit.

way that things appear to us insofar as we are receptive to higher modes of determinative force.

Scientific objectivity is the way that things 'appear' to elemental reality or higher force as mere objects. The explanatorily-fundamental aspects of reality that ground scientific objectivity are arational *natural forms*, corresponding to causally basic modes of impersonal *natural force*. Here I mean to draw an explicit parallel to Kant's claim that we can only experience things as they appear to us mediated by the general 'forms' of our own cognitive powers, as 'phenomena' rather than 'things in themselves'. The account of natural forms I am advocating, but which I can here only sketch in rough outline, is semi-Kantian but realistic and anti-rationalistic—a kind of *transcendental naturalism*. I largely accept Kant's view that scientific cognition presents us with appearances, which exceed mere (subjective) appearances only insofar as they are structured by basic underlying conditions of objective experience. But as a naturalist I reject the idea of unknowable things-in-themselves, and insist that the forms of our own cognitive powers need not be merely ideal, as Kant takes them to be. (For example, Kant claims that “space is not a form that is proper to anything in itself,”⁶⁷⁹ and the representation of space “signifies nothing at all” if we “depart from the subjective condition under which alone we can acquire outer intuition.”⁶⁸⁰) The forms of our experience need not just reflect human nature.

Rather, our cognitive powers can and should be determined by essential features of the broader world. Our powers of sensory apprehension and intellectual comprehension are natural powers. The basic 'transcendental' forms of objective scientific experience can and should be fundamental natural forms. Unlike Kant, I am not interested in justifying scientific knowledge by appeal to transcendental forms of experience, or in refuting Humean skepticism. I simply wish to understand or explain our scientific knowledge of mind-independent reality as itself a natural phenomenon, in terms of the basic features of the world that science discloses.

Scientific objectivity is the way that things 'appear' to basic modes of force as mere 'objects', systematically ordered by corresponding forms. Scientific objectivity is the standpoint of force in relation to its objects. Scientific objectivity is a view from explanatory power.

14. Physical Force as Transcendental Ground (I):

Dynamic Structuralism

679*KrV* A30/B45.

680*KrV* A26/B42. See also *KrV* B148.

14.1. The notion of a 'view' or 'standpoint' corresponding to loci of explanatory power may still seem implausible or underdeveloped. To this end, it bears elaborating several concrete examples. One of these I have already mentioned: representing objects in physical spacetime is a way of normalizing the impact of real gravitational force, by formally re-encoding this impact as the 'background structure' of a spatial form. In this context, again, there is a crucial difference between *structural* and *causal* explanation. I will further elaborate this distinction, as well as the gravity-spacetime example, in the present chapter. And I will do so in the context of defending a set of more abstract claims that I made at the outset of the previous chapter.

Namely, empirical scientific explanation is a cognitive spatialization of natural forces distinguished by virtue of their impact on observable phenomena. And physical scientific explanation is a species of scientific explanation, which involves spatializing purely intelligible natural forces with empirical impact—i.e. *physical forces* without sensory qualities or spatiotemporal properties, which produce observable phenomena ordered into purely intelligible *physical structures* constituted by mathematical relations among physical properties. Physical structure, in this sense, is a species of *dynamic structure* as characterized in part I above: higher force has impact on inferior force; this impact has real structural form, or *dynamic structure*; and this real dynamic structure in turn merely appears as objective spatial form, in which inferior force-loci impacted by the given higher force are represented as spatially-located objects.

This is another basic example of a 'view' or 'standpoint' relevant to scientific objectivity, then: comprehending observable phenomena under the ambit of basic *physical structures* is a way of occupying the 'standpoint' of *physical forces*, generally speaking.

14.2. The historical transition from Newtonian gravitational theory to Einstein's general theory of relativity presents an apparent challenge for scientific realism. Newton's claims about an unobservable 'force' of gravity no longer seem to be even approximately true, given relativistic accounts of gravity in terms of spacetime curvature. Yet traditional scientific realists typically claim that if scientific theories are true, then the unobservable entities they postulate exist; and that 'mature' enough scientific theories are at least 'approximately' true.⁶⁸¹ In principle, a realist could insist that Newton's theory was not 'mature' enough for its radically-incorrect

681E.g. see Psillos 1999, xvii; Putnam 1975, 69 and 73; Boyd 1983, 45.

unobservable ontology of gravitational force to speak against the viability of scientific realism. But this is unappealing, insofar as Newton's theory was highly developed and enjoyed great predictive success. Realists would do better to try to salvage the 'approximate' truth of Newtonian physics.

Below, I work to address this challenge, of explaining the transition from Newton to Einstein, and the problem of 'radical' theory change more broadly, on scientific realists' behalf. I do so in part by advancing a novel physical interpretation of general relativity. On this interpretation, the relativistic *gravitational field*, i.e., the metric field whose curvature Einstein's field equations functionally relate to the stress-energy tensor, is not a force; but *gravity* itself is a force. Namely, relativistic gravity is an unobservable force that causes inertial motion. And the gravitational field is just the concrete but purely intelligible 'pattern' of this inertial motion. Thus spacetime curvature is not a force; but it is the form of a real force's observable causal impact. Some commentators reject causal interpretations of general relativity altogether.⁶⁸² And those who embrace causal interpretations typically identify the gravitational field as the cause of inertial motion, arguably in keeping with Einstein himself.⁶⁸³ Hence, my claim that the gravitational field is only the 'pattern' or form of an effect, and not itself a cause, diverges from existing accounts.⁶⁸⁴

More broadly, I use this case to motivate a form of scientific realism that I call *dynamic structuralism*, synthesizing elements from existing realist, empiricist, and neo-Kantian emphases on 'structure'. According to this dynamic structuralist version of realism, physical science systematically invokes relations between actual but unobservable causal powers, or *natural forces*, and the observable phenomena that they (do or can) produce.⁶⁸⁵ Physics describes natural

682E.g. see DiSalle 1994, 1995; Nerlich 1994; Brown 2005. See also Hoefer 2009, 701–704.

683For this causal reading of Einstein's interpretation of the gravitational field, see e.g. Brown 2005, 161; Hoefer 2009, 701–702; Weaver [forthcoming], 11–12. Likewise, a standard textbook claims that “[s]pace acts on matter, telling it how to move” (Misner, Thorne, and Wheeler 1973, 5), which at least suggests the causal claim. See also Weaver [(forthcoming), 32] for a list of more or less overtly causal interpretations in this vein. Representatively, e.g., Geroch (1978, 180) appeals to “[t]he effect of curvature on matter in relativity, via Einstein's equation.”

684Here one may contrast existing accounts of scientific realism in terms of dispositions or powers that bring about observable phenomena—e.g. see Mumford 2004; Bird 2007. Note that Bird (2007, 215) attributes a 'disposition' to *spacetime* (“each spacetime point is characterized by[...]its disposition to affect the kinetic properties of an object at that point, captured in the gravitational field tensor at that point”), whereas I ascribe causal power to *gravity*, and *not* to spacetime; see also Bird 2009. (Mumford does not address this case.) Esfeld (2009) pairs a broadly Mumford- or Bird-style account with structural realism, arguing that “fundamental physical structures possess a causal essence, being powers.” I deny this: dynamic structures are just effects, not causes, on my view.

685Note that I will not endorse any particular metaphysical account of causation, because doing so is not necessary for my basic purpose of outlining, contextualizing, and motivating the 'dynamic structuralism' here on offer.

forces' impact in terms of purely intelligible 'patterns' that order the observable phenomena they produce. These *dynamic structures* are concrete, not abstract, but unobservable because constituted by purely intelligible mathematical relations between physical properties, like the algebraic relation $[-Gm/r^2]\mathbf{n}$ that describes gravitational acceleration in Newtonian mechanics.⁶⁸⁶

The Newtonian theory of an impressed gravitational force implies approximately the same dynamic structure of physically-possible gravitational acceleration as does Einstein's theory of geodesic motion in a curved spacetime. And this continuity at the level of empirical structure is a meaningful similarity between Newtonian gravitational force and relativistic spacetime curvature themselves, because the Newtonian gravitational field $[Gm/r(t)^2]\mathbf{n}$ just is the dynamic structure of physically-possible gravitational acceleration, and non-zero spacetime curvature as described by Einstein likewise just is an approximately similar dynamic structure of physically-possible gravitational acceleration. Newtonian gravity is just the cause of gravitational acceleration ordered by the dynamic structure $[Gm/r(t)^2]\mathbf{n}$, and relativistic gravity is just the cause of gravitational acceleration ordered by an approximately similar structure.

Note that I do not mean to provide a self-standing defense of scientific realism against anti-realistic positions like constructive empiricism, although my argument is meant to evidence the coherence and explanatory power of my brand of realism. Rather, I presuppose a realist perspective and argue that, from this standpoint, my account provides the best explanation of the relationship between unobservable reality, observable phenomena, and physical scientists. That said, I do argue that van Fraassen subtly mischaracterizes both 'structure' and intelligibility, insofar as he apparently denies, or at least discounts, that a structure might be purely intelligible and yet still concrete (not abstract). I also do not mean to be offering an argument against radical skeptics who doubt that our intellect reliably affords us knowledge of mind-independent reality. Rather, I hypothesize that the human intellect is in essence a power to apprehend mind-independent natural forces, by enacting corresponding dynamic structures' explanatory power, and I demonstrate the explanatory power of this hypothesis. Moreover, I argue that scientific realists must posit *actual* natural forces, to ground the concrete reality of law-like order among

⁶⁸⁶By something 'purely intelligible', I mean something insofar as it lacks both sensory qualities (e.g. color, hotness, or smell) and spatiotemporal properties (e.g. temporal duration, or spatial form). In loosely Kantian terms, then, purely intelligible things are things insofar as they are possible objects of *purely conceptual* understanding, as opposed to things as they are given to us via *sensible intuition*. Note that for something to be purely intelligible does not mean that it is mind-dependent, on my view. The dynamic structures disclosed by science are mind-independent. And if super-human forms of intellect exist, or if they are possible, then there could be dynamic structures that are intelligible, yet not intelligible *by us*—or even by *any* actually-existing intelligent beings.

merely *possible* phenomena, if they are to avoid unintentional slides into metaphysical idealism.

In section 14.3, I further elaborate the basic features of my account, specifically in relation to John Worrall's influential 'best of both worlds' motivation for structural realism and Bas van Fraassen's anti-realist 'empiricist structuralism'. I contrast dynamic structures with *phenomenal structures*, or observable spatiotemporal 'patterns' of physically-possible observable phenomena. In turn, I describe how dynamic structures and observable phenomena are interrelated in science, via *physical principles*. In section 14.4, I argue that my account is more responsive than is standard structural realism to the objection that there is no clear distinction between things' 'structural' properties and their 'intrinsic' properties or 'natures'. Here I also differentiate my account from neo-Kantian structuralism. In section 14.5, I address several residual objections.

In section 14.6, I conclude that in physical science we *objectively represent* two main classes of thing: observable phenomena, and unobservable dynamic structures. However, we also *apprehend* causally-basic but unobservable natural forces, which produce observable phenomena ordered by corresponding dynamic structures. We apprehend natural forces in part by using them to mathematically organize physical properties, in the image of corresponding dynamic structures. Through physical principles, in turn, we relate this apprehension of dynamic structure to *measurement*, or the direct coordination of observable phenomena with determinate values of physical properties. I will refer to this principled *comprehension* of phenomena, using dynamic structures, as *physical explanation*. Most deeply, then, physical science aims at the apprehension of natural forces, through explanation. In using dynamic structures to explain phenomena, we intellectually re-enact natural forces' impact on observable reality, and thereby understand them.

14.3. Structural realism has been advanced by John Worrall and other more recent commentators as a 'best of both worlds' response to the 'no miracles' argument for scientific realism and the 'pessimistic meta-induction' against it.⁶⁸⁷ According to the 'no miracles' argument, we should believe that our best scientific theories are at least approximately true, because

⁶⁸⁷See Worrall 1989. Before Worrall, Grover Maxwell also advocated 'structural realism' (see e.g. Maxwell 1970), and Ronald Giere proposed a 'constructive realism' that he suggests is "a variety of what is sometimes called *structural realism*," citing Maxwell (Giere 1985, 83). See Gower (2000) for a broader survey of historical antecedents, saliently including Poincaré, Duhem, Russell, and Cassirer. Cf. Magnus and Callender 2004 for the charge that the 'no miracles' argument and 'pessimistic induction' are grounded in base-rate fallacies.

otherwise the empirical success of science would be miraculous and thus incredible.⁶⁸⁸ According to the 'pessimistic meta-induction', however, history shows us that scientific descriptions of unobservable reality change radically over time—e.g., scientists no longer refer to phlogiston, the luminiferous aether, or anything remotely resembling them—and we have no reason to think that current theory is any better in this regard. While pessimists often allow that the empirical adequacy of science increases more or less monotonically, they conclude that we have good reason to think that all or most current scientific claims about unobservables will be radically overturned by future theory change.⁶⁸⁹

Structural realists like Worrall concede to pessimists that scientific claims about the 'natures' or 'intrinsic' properties of unobservable things have changed radically over time, and will presumably continue to do so. However, they insist that science does yield accumulative knowledge of unobservable but objectively real 'structure', or the objective 'structural' properties of unobservable objects. For instance, Worrall claims that from the vantage point of Maxwell's electromagnetic theory, Fresnel's earlier theory of light as consisting of vibrations transmitted through a mechanical medium (viz., the aforementioned 'luminiferous aether') has “exactly the right structure—it's 'just' that what vibrates according to Maxwell's theory, are the electric and magnetic field strengths [i.e., not the aether].” Worrall infers that “[a]lthough Fresnel was quite wrong about *what* oscillates, he was, from this later point of view, right, not just about the optical phenomena, but right also that these phenomena depend on the oscillations of something or other at right angles to the light.”⁶⁹⁰ Similarly, Worrall “can see no clear sense in which an action-at-a-distance force of gravity is a 'limiting case' of, or 'approximates' a space-time curvature.” But “Einstein's equations undeniably go over to Newton's in certain limiting special cases.” And from this Worrall infers that “there is 'approximate continuity' of *structure* in this case.”⁶⁹¹

Structural empiricists likewise emphasize continuity of 'structure' across theory change, but insist contra realists that this is just the structure of observable phenomena. Thus Bas van Fraassen claims that acceptable new theories explain their predecessors' empirical success by “implying approximately the same predictions for the circumstances in which the older theories were confirmed and found adequately applicable,” and “definitely not by explaining how

688See e.g. Putnam 1975; Boyd 1990; Musgrave 1988; Psillos 1999, ch. 4. Cf. van Fraassen 1980, 34-40.

689See e.g. Poincaré 1905, 160; Putnam 1978, 25; Laudan 1981. Cf. Psillos 1999, ch. 5.

690Worrall 1989, 118-119. Here Worrall is self-consciously following Poincaré (see Poincaré 1905, 160 ff.).

691Worrall 1989, 121.

essentially right the old theory was about the underlying structure of nature.”⁶⁹² Van Fraassen nevertheless embraces 'structuralism', since he argues that science advances abstract models as representations of observable phenomena; that these models are mathematical objects; and that “[i]n mathematics, things are described only up to isomorphism—it makes no sense there to speak of differences between isomorphic structures.”⁶⁹³ Notably, van Fraassen conceives of 'structure', in this context, as “a universal or similar abstract entity.”⁶⁹⁴ Thus he discounts the kind of *concrete* structures that I argue are in fact most relevant.

Neither structural realists like Worrall nor structural empiricists like van Fraassen appreciate that physical scientific characterizations of empirical structure *are* descriptions of unobservable reality's nature or essence. Physical science yields basically accumulative knowledge of explanatorily-powerful *dynamic structures*, or concrete but unobservable wholes whose parts are *physical properties* (e.g. mass, spatial separation, charge, and spin angular momentum), specifically insofar as they are ordered into physically real but strictly intelligible forms. Namely, the physical properties in dynamic structures are ordered into determinable mathematical relations whose determinate values, given the values of these component properties in actual physical systems, correspond to the *measurable* values of physically-possible *observable* phenomena.⁶⁹⁵ For instance, Newton's laws of motion suggest that Gm/r^2 (where G is the gravitational constant, m is the mass of a given body, and r is a variable distance from it) is the dynamic structure of physically-possible gravitational acceleration vis-à-vis actual massive bodies. Notably, this Newtonian representation of gravitational acceleration's dynamic structure is approximately retained in general relativity, despite Einstein's reconceptualization of gravity as that part of non-zero spatiotemporal curvature which is due to the distribution of mass-energy, rather than as a Newtonian 'impressed' force.⁶⁹⁶ (Below, I will distinguish between *gravity*

692Van Fraassen 2006, 298. See also van Fraassen 2008. Compare Bueno's 'structural empiricism' (1999, 2010).

693Van Fraassen 2006, 304.

694Van Fraassen 2008, 248.

695By 'value' I mean a definite mathematical object, not necessarily a number—e.g., a value might be a vector.

696More precisely, general relativity evidently describes gravity as that aspect of spatiotemporal curvature which is due to energy, momentum, and stress associated with matter and all non-gravitational fields, as represented by the stress-energy tensor. Note that there can be spatiotemporal curvature in parts of spacetime where the stress-energy tensor is zero—e.g. there is positive cross-sectional curvature in the vacuum outside a massive body like Earth, which causes other bodies like apples to converge in the 'horizontal' direction as they fall towards its center. My point is just that this gravitational effect in the vacuum outside a massive body is still due to its mass-energy. Note also that the *mathematical formalism* of general relativity is consistent with the possibility that not all non-zero spatiotemporal curvature is due to mass-energy—e.g. it could be due to *purely inertial* phenomena like gravitational waves or Einstein-Rosen bridges. But on my view, mass-energy is the only real physical source of non-zero spatiotemporal curvature. Hence, for instance, I would insist that all physically possible gravitational

construed as a real but unobservable causal power, or natural force, and the *gravitational field* construed as the dynamic structure of this real force's empirical impact.) Consider, in this light, a general relativistic equation of motion for a system of two well-separated bodies, presented in a

standard textbook:⁶⁹⁷
$$\mathbf{a} = \frac{-Gm}{r^2} \mathbf{n} - \frac{-Gm}{c^2 r^2} \left\{ \left[(1+3\eta)v^2 - \frac{3}{2}\eta(\mathbf{n}\cdot\mathbf{v})^2 - 2(2+\eta)\frac{Gm}{r} \right] \mathbf{n} - 2(2-\eta)(\mathbf{n}\cdot\mathbf{v})\mathbf{v} \right\} + O(c^{-4})$$

Here \mathbf{a} is the relative acceleration between the two bodies, \mathbf{v} is their relative velocity, \mathbf{n} is their normalized separation (i.e., $\mathbf{n} = \mathbf{r} / r$, where \mathbf{r} is the bodies' separation), M_1 and M_2 are the bodies' respective mass-energies, c is the speed of light, $m = M_1+M_2$, $\eta = (M_1M_2)/(M_1+M_2)^2$, and $O(c^{-4})$ is another correction term whose exact meaning is unimportant here. For my most basic point is just that the above expression clearly involves a Newtonian term ($[-Gm/r^2]\mathbf{n}$) along with several relativistic corrections—collectively, the “post-Newtonian piece of the acceleration vector.”⁶⁹⁸ More originally, I claim that the Newtonian term $[-Gm/r^2]\mathbf{n}$ approximately represents a *dynamic structure* that is concrete, not abstract, yet strictly unobservable because purely intelligible.

Dynamic structures like $[-Gm/r^2]\mathbf{n}$ must be distinguished from *phenomenal structures*, or *observable* 'patterns' constituted by explanatorily-salient *spatiotemporal* arrangements of actual or physically-possible observable phenomena. For instance, the phenomenal structure of an actual or possible body's gravitational acceleration can be represented by a function $\mathbf{a}(t)$, which associates every time with a vector representing the magnitude and direction of the body's (gravitational) acceleration at that time. (All physically-possible gravitational acceleration is observable, in principle, by recording the free motions of appropriate test particles. Of course, there may be no actual thing that realizes a given physically-possible inertial trajectory, relative to the actual structure of spacetime. Hence I am concerned not just with actual phenomena, but with all those phenomena that actual natural forces *can* causally produce.) Nor should dynamic structures be conflated with *phenomenal spaces*, or structures comprising all physically-possible phenomenal structures of a given kind. Whereas dynamic structures are unobservable wholes comprising real but purely intelligible relations between physical properties', phenomenal spaces are observable spaces of physically-possible phenomena's spatiotemporal interrelation.

Physical principles do, however, equate values determined by mathematical forms representing dynamic structures (e.g. $[-Gm/r(t)^2]\mathbf{n}$) with the values of functions representing

waves have sources in mass-energy, e.g. exploding supernovae—and likewise for Einstein-Rosen bridges.
697Poisson and Will 2014, Eq. (9.142).
698Poisson and Will 2014, 440.

corresponding phenomenal structures (e.g. $\mathbf{a}(t)$).⁶⁹⁹ For instance, a classical physical principle is expressed by the Newtonian equation $\mathbf{a}(t) = [-Gm/r(t)^2]\mathbf{n}$. Higher-order physical principles relate dynamic structures, not directly to phenomenal structures, but to other dynamic structures of physical properties. However, higher-order principles still thereby indirectly equate (i) values determined by actual dynamic structures with (ii) values of physical properties which are directly coordinated, via possible acts of measurement, with physically-possible observable phenomena.

(The somewhat elaborate formulation in (ii) is necessary because some *measurable* properties, like the spin of an electron in a singlet state, *may not be observable*. Electron spin states can certainly be measured, e.g. in Stern-Gerlach experiments. But insofar as observation is *direct perception*—e.g. to observe a dog is to perceive it *as* a dog, on my view—electron spin need not therefore be observable.⁷⁰⁰ We can *measure* an electron's spin in a Stern-Gerlach experiment, by *observing* its angular deflection in interaction with a magnetic field gradient. But observing this angular deflection is not the same thing as perceiving the deflection *as* a spin state. One can *know* that the deflection which one observes is *coordinated* with a given spin state, without observing this spin state. Note also that 'direct perception' does not mean 'perception unaided by instruments like microscopes'. I take it to be possible to observe things, like fine-grained details in the crystalline structure of salt, through microscopes.⁷⁰¹ This is because microscopic crystalline structure is still determine *spatial form*, and so is still a possible object of *sensible intuition*, in the Kantian sense, even if only with the aid of instruments.⁷⁰²)

In sum, physical principles relate unobservable dynamic structures to observable phenomenal spaces, 'within' which phenomenal structures are observable 'shapes', and physically-possible phenomena are observable 'points'. Dynamic structures are *empirical structures*, in that they are essentially related via physical principles to observable phenomena. But dynamic structures and phenomenal structures are two distinct kinds of empirical structure.

Contra van Fraassen and other empiricists, then, it is not just phenomenal structure that is preserved across radical theory change. Rather, in cases like the transition from Newtonian to relativistic physics, there is also an approximate continuity of unobservable dynamic structure.

699I use the term 'principle' rather than more common ones like 'law' because I wish to remain agnostic about the relationship between physical principles and laws of nature, to avoid introducing unnecessary complications.

700To be clear: 'direct perception' does not mean 'perception unmediated by concepts or theoretical frameworks'.

One must have the concept [dog] in order to directly perceive something *as* a dog, for instance. Hence, to observe dogs (as such) still involves a kind of 'theory-laden' perception.

701Cf. van Fraassen 2008, chapter 4.

702See also section 4A below.

(In section 14.5, I respond to the objection that dynamic structure is not truly preserved in this case.)

Contra Worrall, however, this continuity of dynamic structure *is* continuity at the level of unobservable entities' natures. The Newtonian theory of an impressed gravitational force implies approximately the same dynamic structure of physically-possible gravitational acceleration as does Einstein's theory of geodesic motion in a curved spacetime. And this continuity at the level of empirical structure is a meaningful similarity between Newtonian gravitational force and relativistic spacetime curvature themselves, because the Newtonian gravitational field $[Gm/r(t)^2]\mathbf{n}$ just is the dynamic structure of physically-possible gravitational acceleration, and non-zero spacetime curvature as described by Einstein likewise just is an approximately similar dynamic structure of physically-possible gravitational acceleration.⁷⁰³ Newtonian gravity is just the cause of gravitational acceleration ordered by the dynamic structure $[Gm/r(t)^2]\mathbf{n}$, and relativistic gravity is just the cause of gravitational acceleration ordered by an approximately similar structure. (In general relativity, gravitational acceleration is interpreted as a kind of geodesic motion, hence arguably as merely apparent acceleration, insofar as it involves no deviation from four-dimensional 'straight' lines. This is not a problem for my account: I am concerned with gravitational acceleration qua observable. We observe things like apples falling; this suffices.)

For a more intuitive sense of the point at issue, imagine dropping a bowling ball in a vacuum chamber on the surface of the Earth, and recording its motion. One could thereby determine the ball's acceleration as a function of time. In turn, imagine conducting this experiment at various locations on Earth, or on the Moon. Imagine performing it at an arbitrary point in outer space, 'dropping' the ball by letting it go and seeing how it moves. The results of all such possible experiments, at every spatiotemporal location and with a bowling ball of infinitesimal mass, would give an indication of everything that gravity is in fact capable of doing, throughout the universe as it actually is.⁷⁰⁴ And what better way is there to characterize the

⁷⁰³Note that it is also possible to 'geometrize away' gravitational forces in Newtonian theory by incorporating the gravitational potential into the affine connection, such that freely falling particles follow the geodesics of a new, nonflat derivative operator. The result is called 'Newton-Cartan theory' (see Cartan 1923). Friedman (1983, 95) calls this a "new theory of gravitation," as opposed to Newton's. But in fact, Newton-Cartan theory is just an alternate representation of the same *dynamic structure* that Newton described by appeal to an 'impressed' force of gravity. See also Jones 1991. Admittedly, my claim that Newton-Cartan theory is not a genuinely new theory of gravitation stands in apparent tension with my explanation of the sense in which dynamic structuralism is not positivism, in sub-section 4B below. I address this tension elsewhere, but cannot pursue the issue further here.

⁷⁰⁴One might think that, in addition to this information about the possible acceleration of test-masses, one would also need information about the bowling balls' deformation by tidal forces, gravitational waves, etc. But that is not true. Information about possible deformation by tidal forces or gravitational waves can be inferred from

nature of gravity, as an actual causal power, than to systematically indicate the entire range of its possible causal impact? One way to do so is just to exhaustively describe all physically-possible phenomenal structures of gravitational acceleration. But in order to *explain* these physically-possible 'patterns' of phenomena, one must also invoke dynamic structures like $[-Gm/r(t)^2]\mathbf{n}$.

More broadly, every real dynamic structure is the structure *of* a concrete but unobservable causal power, or *natural force*. If there are no charged objects for an electrostatic field to act on, for example, it will not realize its potential accelerative impact. But the dynamic structure of electrostatic force indicated by Coulomb's law would not be a *concrete* structure, or an actual physical property, if there were no *actual* force field to which it corresponds. Without an actual natural force, a corresponding dynamic structure is a merely ideal 'shape' of physical properties.

To give another example, if there were no mass-energy located in spacetime, there would be no actual inertial motion. But the geodesic structure of the metric field defined on the spacetime manifold would still indicate the structure of all physically-possible inertial trajectories. This geodesic structure of physically-possible inertial trajectories is a phenomenal structure, insofar as physically-possible inertial trajectories are in principle observable. But Einstein's field equations in turn indicate a functional relationship between this phenomenal structure and a corresponding dynamic structure, namely, insofar as the values of the metric field defined on the spacetime manifold functionally depend upon values of the stress-energy tensor. We may call the former phenomenal structure spacetime's *inertial structure*, and the latter dynamic structure the *gravitational field* or the *metric field* defined on the spacetime manifold. Hence, the gravitational field is the unobservable dynamic structure of observable gravitational acceleration, and is related to the observable inertial structure of spacetime via a physical principle, expressed in Einstein's field equations. But gravitational structure is also the impact-structure of a *natural force* (gravity) which causes geodesic motion by mass-energy.

Of course, many commentators believe that general relativity shows that gravity is *not* a force. But I claim that this is wrong, or at least imprecise. Inertial structure is certainly not a force. And the gravitational field described by Einstein's field equations is also not a force. But gravity itself is a force: the unobservable force which *causally* produces the observable inertial motion that is only *formally* explained by the metric field defined on the spacetime manifold.

information about accelerative impact at every spacetime point. Tidal forces are due to differential accelerative effects across extended bodies; and the experiments I suggest—with bowling balls that are perfectly rigid, infinitesimally small, and infinitesimally massive—already provide all the relevant information about the purely gravitational aspect of this differential accelerative impact.

The *causally inert* gravitational field is just the dynamic structure of gravity's *causal* impact. Here contrast Christopher Weaver's claim that “the gravitational field understood as spacetime curvature causally generates the inertial and time-like geodesic motion of free massive bodies.”⁷⁰⁵ On my view, *gravity* construed as an unobservable force causes the observable inertial and time-like geodesic motion of free bodies, whereas the *gravitational field* is just the concrete but purely intelligible 'pattern' of this inertial and time-like geodesic motion. Observable phenomena are represented in physical science as the effect or causal impact of unobservable forces. This causal impact in turn has structure, including the kind of concrete but purely intelligible dynamic structure that physical scientific explanation highlights. But impact is not *caused* by its own structure. Impact is *caused* by real causal power. Observable inertial motion is *caused* by a real but unobservable natural force of gravity, not by the gravitational field or curvature of spacetime.

One might object that the distribution of mass-energy *influences*, but does not *determine*, the geodesic structure of spacetime. For example, there are many vacuum solutions to Einstein's field equations. So, fixing the distribution of mass-energy as zero throughout spacetime fails to determine inertial structure. Hence it might seem that gravitational force cannot be the cause of geodesic motion, per se—at least not insofar as gravitational force is exerted by mass-energy. But the fact that relativistic field equations admit of a wide range of vacuum solutions, some of which have non-zero curvature, does not entail that these mathematically possible solutions are physically possible.⁷⁰⁶ Indeed, on my view they are unphysical solutions, or mathematical artifacts that elide mass-energy's role as the physical source of non-zero spatiotemporal curvature.⁷⁰⁷

This interpretive scheme suggests that physical scientific explanation—if not also empirical scientific explanation more broadly—follows a standard form, insofar as it is construed realistically: *an actual feature of unobservable reality causally produces observable phenomena ordered into a corresponding dynamic structure, or at least has the power to do so*. Realistically construed, then, physical science posits natural forces, or actual but unobservable causal powers,

⁷⁰⁵Weaver (forthcoming), 14.

⁷⁰⁶Aside from the vacuum case, moreover, it is arguably difficult to devise truly natural examples of relativistic worlds that have the same matter content but different geometries.

⁷⁰⁷See n. 696. Note also that with respect to Maxwell's theory, the corresponding view (all fields have sources) was not especially non-standard—e.g. consider Lorentz's remark that “[w]e need not [...] speak of other solutions, if we assume that an electromagnetic field in the ether is never produced by any other causes than the presence and motion of electrons” (Lorentz 1916, 20). For further references, see Ritz 1908, 170 fn. 1; Frisch 2014, 193 fn. 3.

which are essentially characterized by the intelligible structures of the observable phenomena they can produce. The dynamic structures disclosed by physical science are objectively real only insofar as they are forms of actual natural forces' possible impact on observable reality. Unobservable natural forces *causally* explain actual observable phenomena. And the dynamic structures of these forces *structurally* explain the full range of physically-possible phenomena.

14.4. So much for an outline of the dynamic structuralism here on offer. In this section, I offer further reasons to prefer dynamic structuralism over other structural and non-structural realisms.

Dynamic structuralism is more responsive than other structural realisms to the objection that there is no clear distinction between things' 'structural' properties and their 'intrinsic' properties or 'natures'. Stathis Psillos' version of this objection to structuralism is representative:

According to the alleged dichotomy between structure and nature, it is as if the nature of a scientific entity is something over and above its structure. Or, equivalently, it is as if the physical content of a mathematical symbol, (that is, the physical entity or process it stands for) is somehow on top of the totality of the mathematical equations in which it features, (that is, the totality of laws which describe its behaviour). But when scientists talk about the nature of an entity, what it is normally understood is a bunch of basic properties and a set of equations, expressing laws, which describe the behaviour of this entity. That is, they rather speak of the way in which this entity is structured. I think that talk of 'nature' over and above this structural description (physical and mathematical) is reminiscent of the medieval 'forms' and 'substances'.⁷⁰⁸

Notably, Psillos' implication that a physical entity or process is nothing 'on top of' the totality of equations involving a 'mathematical symbol' that stands for it sounds much like what Laudan diagnoses as 'closet positivism' in his rejection of Worrall-style 'structural' realism: “[w]here 'closet positivists' might be content with capturing only the formal mathematical relations or only the observable consequences of T_1 within a successor, T_2 ,” Laudan insists, “any genuine realist must insist that T_1 's underlying ontology is preserved in T_2 's, *for it is that ontology above all which he alleges to be approximately true.*”⁷⁰⁹ When Psillos claims that physical phenomena's 'behavior' is 'described' by equations, on the other hand, his view sounds more robustly realist.

708Psillos 1995, 31. Compare McMullin 1984, 15.

709Laudan 1981, 40. Although Laudan wrote this in 1981, his objection clearly applies to Worrall's 1989 account.

Structural realists attempting to differentiate themselves from traditional realists hence face two main pitfalls: (i) unintentional slides into positivism, or at least empiricist structuralism; and (ii) reifications of abstract mathematical structure. With respect to the latter, for example, the physicist Max Tegmark claims that “our physical world [i.e., 'external physical reality'] is an abstract mathematical structure.”⁷¹⁰ Most will reject Tegmark's view, of course. Most realists, including most structural realists, think that the mathematical forms disclosed by empirical science represent a distinct and concrete physical world. But it is far from trivial to actually show that the 'structures' disclosed by science are concrete. I return to this issue in section 4. Regarding the former pitfall, if 'structure' is interpreted so that observationally-equivalent theories entail the same 'structural' relations, then structural 'realism' collapses into empiricism.

On the other hand, if 'structure' is taken to be constituted by mathematical relations among otherwise-indeterminate unobservable things, then it seems that structural realism is a genuine realism only if this uninterpreted mathematical structure is real despite being purely abstract. But even if one believes that uninterpreted mathematical structures are objectively real or mind-independent, it is not clear that they should count as genuine *physical* objects, let alone basic constituents of unobservable physical reality. I do not accept this, at least. On my view, any 'structural realist' worth their salt should insist that the 'structures' in question are *concrete*.

Thus structural realists should concede that 'structure' is *physically-interpreted mathematical structure*. But then, as Psillos says, it is not clear that 'structural' realism differs from traditional realism. I think this objection to standard forms of structural realism is basically correct. Hence, I take my own motivation for structuralism about science to be different.

One somewhat better motivation for structuralism has to do with the difference between *extrinsic* and *intrinsic* properties. Here it is helpful to note that structural realism has historical roots in (neo-)Kantian transcendental idealism, insofar as it involves the thesis that we can know things' extrinsic properties—namely, how they affect subjects like us as 'phenomena'—but not the properties of these same things as they are 'in themselves'.⁷¹¹ We may parse this Kantian motivation into two claims: we can only have knowledge of things insofar as they are related (i) to us, as subjects; and (ii) to each other, as spatiotemporally- and causally-interconnected objects.

Dynamic structuralism emphasizes a slightly different class of extrinsic properties, namely, causal relations between unobservable reality and observable phenomena. My basic

710Tegmark 2008, 101. Compare Tumulka 2017.

711See Langton 1998. Compare Langton and Lewis 1998, Lewis 2009. See also Massimi 2011.

point is simple: empirical scientific knowledge of unobservable things cannot extend beyond knowledge of the ways in which they causally impact aspects of the world that we can observe. Unlike standard structural realists, then, I am not focused on 'structural' relations between unobservable objects and other unobservable objects. Unlike Kant, I am not focused on causal relations between 'objects' of experience in general. I am focused specifically on causal relations between unobservable forces and observable phenomena. Further unlike Kant, finally, I do not believe that causality is merely a form of our understanding: I believe that there are mind-independent causal relations between unobservable natural forces and observable phenomena.

14.5. The above analysis raises several natural questions. First, is dynamic structuralism really a kind of *structural* realism, or just a strange gloss on traditional scientific realism? Second, is dynamic structuralism really a scientific *realism*, or just a baroque form of constructive empiricism, if not positivism? Third, does dynamic structuralism really do any better vis-à-vis the 'pessimistic meta-induction' than does traditional scientific realism? And fourth, why focus on *causal* relations, rather than other kinds of relations or extrinsic properties?

A. Dynamic structuralism is not just traditional scientific realism. Even my above claim, to the effect that genuine empirical scientific knowledge of unobservable reality is restricted to knowledge of things insofar as they are or have causal powers vis-à-vis observable phenomena, would not be endorsed by all, or perhaps even by many, scientific realists. Thus in this respect dynamic structuralism already differs from traditional forms of scientific realism.

However, dynamic structuralism is 'structuralist' in a far more robust sense than just this. I take 'structure' to refer not simply, or even primarily, to causal relations between unobservable natural forces and observable phenomena. Rather, I take 'structure' to refer primarily to the *distinctive kind of impact* that natural forces have, as basic objects of scientific understanding.

Insofar as it is a natural force, for example, Newtonian gravity is an unobservable causal power vis-à-vis massive bodies. The impact of this causal power, evidently, is observable gravitational acceleration. But how is acceleration 'structure', or accelerative impact 'structural'?

Gravitational acceleration is not itself 'structure' or 'structural' in any important sense. Rather, the *dynamic structure* of gravitational acceleration is 'structural'. The dynamic structure of Newtonian gravitational acceleration vis-à-vis a given massive body, $[-Gm/r(t)^2]\mathbf{n}$, is a purely intelligible whole comprising algebraic relations between physical properties: the mass of a

given body, and a given spatial separation from it. The gravitational acceleration of a falling apple at a given time is observable. The mathematical operation of multiplying the mass of the Earth by the Newtonian gravitational constant, and dividing this product by the square of the apple's distance from the center of the Earth, is *not* observable. It is a *purely intelligible* relation. It has no sensory qualities. And it has no spatiotemporal structure—it involves a spatial property, of course, but it places this spatial property in non-spatiotemporal relation to another physical property, mass. This algebraic relation between physical properties is a *purely intelligible form*. But this algebraic relation is nevertheless a genuine *physical property*. Not every algebraic relation between physical properties is systematically equivalent in value to the measurable values of observable phenomena. You cannot predict the apple's acceleration by dividing its electrical resistivity by the binary representation of your birth year. This is not a real physical property. But $[-Gm/r(t)^2]n$ is. (More precisely, it is either an *approximation* to a real physical property, or else it is a real but inexact, or an imperfectly accurate, physical property—like the straightness of a drawn line, or the rectangularity of a book.)

Dynamic structuralism thus resonates with a broader tradition of observing that modern physical objects are difficult, if not impossible, to imagine or 'picture'. It is impossible to imagine how quarks smell, because they do not have sensory qualities—although they do have properties like mass. This is the underlying realist import of Ernst Cassirer's observation that “it is precisely the complex mathematical concepts, such as possess no possibility of direct sensuous realization, that are continually used in the construction of mechanics and physics.”⁷¹² Likewise, it is the 'structural realist' insight obliquely conveyed through his claim that “[t]he individual thing is nothing for the physicist but a system of physical constants.”⁷¹³

While Cassirer means to describe modern physical objects in general, others make related points about the non-intuitable character of quantum mechanical phenomena, in particular. Thus Paul Dirac claims that observable properties (e.g. an electron's position) generally speaking lack determinate values until they are measured, even for fully specified physical states. This is because quantum mechanics allows that fully specified states can be unmeasurable superpositions of the measurable (eigen)states of observables.⁷¹⁴ Likewise, Niels Bohr suggests that quantum theory confronts us with “an essential failure of the pictures in space and time on

712Cassirer 1910/1923, 116.

713Cassirer 1910/1923, 148. Compare Cassirer 1957, 436 and 473. See also Ryckman 2018.

714Compare e.g. Dirac 1958, vii.

which the description of natural phenomena has hitherto been based.”⁷¹⁵

Note that this putative *un-imaginability* or *un-representability* of modern physical objects is not supposed to be simply a matter of their being unfamiliar, or very different from the things we encounter in everyday experience. Hence, we should not rest content with Ernan McMullin's suggestion that “[i]f we cannot quite imagine what [electrons] are, this is due to the distance of the microworld from the world in which our imaginations were formed.”⁷¹⁶ McMullin is surely right that theoretical entities do not have to be 'imaginable in the categories of the macroworld' in order to be real.⁷¹⁷ Yet the point raised by Cassirer, Dirac, and Bohr is not just that (some or all) modern physical objects are unimaginable in terms of categories applicable to everyday things like rocks or trees or people. Their claim is that modern physical objects are unimaginable *per se*, or in principle, because they lack features prerequisite for being possible objects of imaginative acts of 'mental picturing'. In particular, Cassirer, Dirac, and Bohr—along with Schrödinger,⁷¹⁸ Heisenberg,⁷¹⁹ and others—all associate the failure of 'mental pictures' in modern physics, or at least in quantum mechanics, with a failure of *spatiotemporal* representation. Whether or how this relates to lack of sensory qualities like color or smell is debatable, but here Kant's account of space and time as the forms of our intuition is clearly lurking in the shadows.⁷²⁰

Dynamic structuralism is responsive to these sort of observations, yet without sliding into any kind of idealism, 'transcendental' or otherwise. The dynamic structures of fundamental natural forces' empirical impact are unobservable because they are purely intelligible relations. (I claim that a given thing's being unobservable, in the relevant sense, is analytically entailed by its being purely intelligible. Purely intelligible things are strictly imperceptible, and in this sense are unobservable.⁷²¹) But these dynamic structures are nevertheless concrete physical properties.

None of the above analysis is standard in scientific realism. Some realists may have had in mind something like dynamic structuralism, all along. But many evidently do not. For instance, Michael Friedman considers Newton-Cartan theory to be a “new theory of gravitation,” as opposed to Newton's, whereas I do not.⁷²² Similarly, recall Worrall's claim that he 'can see no

715Bohr 2011, 34-5.

716McMullin 1984, 15.

717McMullin 1984, 14. Compare Eddington 1928, xiii.

718Compare Schrödinger 2014, 130-131 and 143-4.

719Compare Heisenberg 1958, 152.

720...or out in the open, as the case may be. See e.g. Schrödinger 2014, 152.

721Observation, in the sense relevant to science, is *direct perception*. We can directly *conceive* purely intelligible structures, as well as use them to *comprehend* observable phenomena, but we cannot directly *perceive* them.

722Friedman 1983, 95. See note 703 above.

clear sense in which an action-at-a-distance force of gravity is a “limiting case” of, or “approximates” a space-time curvature.’ In this respect, Worrall is more like a traditional scientific realist than I am: he seems to invoke a kind of ‘intrinsic’ difference between relativistic spacetime curvature and the field of an action-at-a-distance Newtonian force that many realists would recognize as physically significant, but which dynamic structuralists as such do not. And, regardless, I have articulated the dynamic structuralist position clearly and explicitly, in a way that others have not. I have explained the precise relationship between dynamic structuralism and other ‘structuralist’ theories, whereas other realists inclined to agree with me have not.

B. Dynamic structuralism is not just empiricist structuralism, or positivism.

Dynamic structures are not just observable phenomena, or phenomenal structures. The gravitational acceleration of an apple at a given time is an observable phenomenon. The values of this observable parameter across time trace out a phenomenal structure or observable ‘shape’. But the dynamic structure of gravitational acceleration is not reducible to observable acceleration, either at a given time or as a function of time. The apple’s observable acceleration at a given time has a magnitude and direction. But the dynamic structure $[-Gm/r(t)^2]\mathbf{n}$ is nowhere to be found ‘inside’ of this magnitude and direction. There are infinitely many ways of combining numbers algebraically to arrive at the given magnitude. Not all of these mathematical relations constitute genuine physical properties. But $[-Gm/r(t)^2]\mathbf{n}$ does, at least approximately.

Nor are dynamic structures simply abstract representations of observable phenomena. Genuine dynamic structures are themselves concrete physical properties, albeit purely intelligible ones. Here it is important to distinguish clearly between dynamic structures, like $[-Gm/r(t)^2]\mathbf{n}$, and mathematical representations thereof. Consider again the gravitational acceleration of a falling apple. We can mentally represent the mass of the Earth, which is about 5.97×10^{24} kg. But our mental representation of this physical property—this quantitatively determinate physical magnitude—is distinct from the physical property itself. The physical property itself, the Earth’s mass, is not an abstract entity. It is concrete. Likewise, the spatial separation between the apple and the Earth’s center of mass is not an abstract entity, but a concrete physical relation. In turn, the algebraic relation $\{[(\text{the Earth’s mass}) \text{ multiplied by } (\text{the Newtonian gravitational constant})] \text{ divided by } (\text{the square of the spatial separation between the apple and the Earth’s center of mass})\}$ is a purely intelligible relation. But it is a purely intelligible relation between concrete physical properties or relations. And, I claim, it is a *real* relation—a natural, physical relation—

between these concrete physical properties. This relation is not a universal, a concept, or a mere idea. It is a singular, physical entity. It is a concrete but unobservable dynamic structure.

Nor is dynamic structuralism a kind of positivism. I posit the existence of unobservable natural forces, and claim that we gain genuine knowledge of their dynamic structures, i.e., the purely intelligible aspect of their causal impact vis-à-vis observable phenomena. Positivists say nothing of the sort. Further, I do not claim that the meaning of 'theoretical' terms is reducible to a pure 'observation language'. Indeed, I do not believe in a pure 'observation language'. I believe that empirical scientific observations are always 'theory-laden', in the basic sense of being mediated by specific conceptual frameworks for parsing phenomena. In part for this reason, I do not believe in immediate awareness of anything like 'sense-data'. I believe that physical properties like electron spin-states are genuinely observable by the modern scientific community, but were not observable by early modern natural philosophers. Hence, I believe that the most long-standing dynamic structures disclosed by science involve less esoteric physical properties, like mass or relative motion, which have been stably observable for many centuries.

Relatedly, I claim that competing theories can be observationally equivalent without disclosing the same unobservable dynamic structures. The same values of observable gravitational acceleration could be generated by arbitrarily many mathematical functions, cooked up to 'spit out' the right numbers. For instance, one could simply multiply and divide a genuine dynamic structure like $[-Gm/r(t)^2]\mathbf{n}$ by the same number, arbitrarily many times—e.g.,

$-\frac{Gm}{r^2}\mathbf{n}\cdot\frac{3\text{m}^5}{r^3}\cdot\frac{r^3}{3\text{m}^5}$. This is not a real dynamic structure, although it yields the same 'predictions' about observable gravitational acceleration as does Newton's theory of gravity. The second and third terms have no physical significance. The first does: it is a real physical property.

C. Dynamic structuralism is more responsive to the 'pessimistic meta-induction' than traditional scientific realism is. A traditional scientific realist would have to explain how Newtonian action-at-a-distance gravitational force 'in itself' approximately resembles relativistic spacetime curvature 'in itself'. But a dynamic structuralist like myself can simply point to continuity in mathematical structure, as indicated in section 1 above, with the following interpretation. Qua natural force, gravity is an unobservable causal power to produce a certain kind of impact on observable phenomena—namely, a certain kind of acceleration in massive

bodies, and geodesic motion in mass-energy more broadly.⁷²³ This empirical impact has a purely intelligible aspect, indicated by a corresponding *dynamic structure*. Spacetime curvature is this dynamic structure. Hence, gravity is essentially characterized by physical science as an unobservable causal power to produce a distinctive empirical impact whose intelligible form is indicated by a corresponding dynamic structure. And mathematical representations of this dynamic structure are approximately retained across radical theory change. The relativistic form $\frac{-Gm}{r^2}\mathbf{n} - \frac{-Gm}{c^2 r^2} [(1+3\eta)v^2 - \frac{3}{2}\eta(\mathbf{n}\cdot\mathbf{v})^2 - 2(2+\eta)\frac{Gm}{r}] \mathbf{n} - 2(2-\eta)(\mathbf{n}\cdot\mathbf{v})\mathbf{v} + O(c^{-4})$ is approximated by the Newtonian structure $[-Gm/r(t)^2]\mathbf{n}$, for example, and we can expect a similar dynamic in all or most instances of acceptable theory change in mature physical science.

The traditional scientific realist's basic mistake is to try to find continuity across theory change in unobservable causal powers viewed 'in themselves', rather than continuity in their *empirical impact*. The structural empiricist's mistake is to deny that science tells us about unobservable causal powers, and correlatively to insist that the relevant empirical structures are just something like what I have called *phenomenal structures*. The structural empiricist fails to appreciate the distinction between observable acceleration and unobservable dynamic structures like $[-Gm/r(t)^2]\mathbf{n}$, which physics shows us determine the measurable values of these observable phenomena. And the standard structural realist's mistake, à la Worrall, is to fail to understand that physics *does* tell us about the natures of unobservable things, qua natural forces, because a causal power's nature *just is* what it can do. Newtonian gravity is just the cause of gravitational acceleration ordered by the dynamic structure $[Gm/r(t)^2]\mathbf{n}$, and relativistic gravity is just the cause of gravitational acceleration ordered by an approximately similar structure.

Admittedly, dynamic structuralism is somewhat harder to defend against the 'pessimistic meta-induction' than is standard structural realism. For the standard structural realist, who often simply refuses to offer any physical interpretation of the mathematical expressions they highlight, it is easier to maintain that 'structure' thus construed is retained across theory change. But, as we have seen, the cost of this refusal is that uninterpreted mathematical structure is not a genuine physical entity or property. (Moreover, it has been widely argued that any physical system can be said to realize a given uninterpreted mathematical structure, as long as the physical system in question has the right cardinality—i.e., roughly, enough objects.⁷²⁴)

723E.g. photons, which are massless, are nevertheless affected by gravity (as in gravitational lensing, etc.).

724See e.g. Newman 1928 and Demopolous and Friedman 1985. French and Ladyman (2003) seem to suggest that

What exactly does the dynamic structuralist as such have to be ontologically committal about? The two basic things that dynamic structures comprise: physical properties like mass, charge, spatial separation, etc.; and purely intelligible algebraic relations that obtain between these physical properties, like the relation $[-Gm/r(t)^2]\mathbf{n}$. What does this mean, vis-à-vis the pessimistic meta-induction? Clearly, there is no problem with respect to the algebraic relations. The meaning of multiplication, division, etc., does not change across radical theory change. The more troublesome component of dynamic structures is their constitutive physical properties. For instance, the ' m ' in the long general relativistic expression for relative acceleration in a binary system on the previous page refers to mass-energy (see section 1 above), whereas the ' m ' in $[-Gm/r(t)^2]\mathbf{n}$ refers to the gravitational mass of a given body. Does this difference not undermine my claim to continuity across theory change? Or what about broader differences between mass as Newton understood it, and mass as it is understood in relativistic physics? Or what about the difference between Newtonian gravity construed as the cause of *acceleration* in *massive bodies*, and relativistic gravity construed as (I claim) the cause of *geodesic motion* in loci of *mass-energy*, including but not limited to gravitational acceleration in massive bodies?

I cannot fully address this issue here: it is critically important, but complex, and demands further investigation. I hope that I have shown that dynamic structuralism has many advantages over salient alternatives even if it does not ultimately fulfill Worrall's ambition for a 'best of both worlds' response to the pessimistic meta-induction and the no-miracles argument. But I will make a few points in defense of dynamic structuralism, vis-à-vis the pessimistic meta-induction.

First, certain physical properties that figure prominently in many dynamic structures do not raise the kind of worries that properties like mass do. For instance, the meaning of spatial separation seems to me to have been stable enough across the past several hundred years of physical science that the ' r ' in the above classical and general relativistic expressions for gravitational acceleration is legitimately construed as referring to the same physical property.

Second, some apparent changes in the meanings of variables in expressions representing dynamic structures are not as problematic as they may seem. For instance, the transition from the classical understanding of gravitational force as the cause of observable *acceleration* to my more modern (albeit still somewhat esoteric) understanding of gravity as the cause of a certain component of observable *geodesic motion* does not seem to me especially damaging vis-à-vis the

Newman's objection does not arise if one adopts the semantic view of theories. Cf. Ainsworth 2009.

prospects for some kind of convergent realism. Geodesic motion is a more general phenomenon than is gravitational acceleration, per se, but it still encompasses it. And to say that gravity is the cause of gravitational acceleration in massive bodies does still seem to me approximately correct, even though it may be more accurate, or at least comprehensive, to say that gravity is the cause of that component of geodesic motion which corresponds to non-zero spatiotemporal curvature, insofar as this curvature is influenced (but not determined) by the distribution of mass-energy.

Relatedly, although we now draw certain distinctions with respect to mass that Newton did not, like the distinction between rest-mass and relativistic mass, these do not seem to undermine the prospects for a dynamic structuralist response to the pessimistic meta-induction. Mass is still widely construed (qua inertial) as a power of resistance to acceleration, and (qua gravitational) as a source of gravity. Mass-energy stands in a straightforward functional relationship to relativistic mass, which in turn stands in a straightforward functional relationship to rest mass. And mass construed by Newton as a locus of inertia, or the 'inherent force of matter', is approximately similar to rest mass as construed in modern relativistic physics.

Finally, again, I concede that scientific advancement sometimes constitutes as measurable physical properties which were previously unmeasurable—e.g. subatomic particles' spin and color charge. In such cases, physical science discloses radically new dynamic structures. But this seems perfectly true, and no real threat to any plausible kind of convergent realism. The isolation of new physical properties does not undermine the validity of previous scientific theorizing. It simply suggests that earlier scientific knowledge is incomplete, and sometimes radically so. But this fact is already acknowledged by every serious-minded scientific realist.

D. Dynamic structuralism emphasizes *causal* relations because they help to ground realistic explanations of the empirical success of science. It is one thing to notice that there are certain 'patterns' in phenomena that we have observed. It is quite another thing to explain these already-observed patterns, or why we should believe that they are projectable beyond existing observations, let alone to explain the individual observable phenomena they comprise.

Dynamic structuralism offers this explanatory ground. Individual observable phenomena like an apple's gravitational acceleration at a given time are *causally explained* by appeal to unobservable natural forces—in this case, gravity. And they are *structurally explained* by appeal to corresponding dynamic structures like $[-Gm/r(t)^2]\mathbf{n}$. Without positing an actual but unobservable causal power, one cannot adequately explain the full range of physically *possible*

accelerations that are not *actually* realized—e.g., if there were no massive body to be causally impacted at a given point in space. Without positing the corresponding dynamic structure, one cannot adequately explain the systematic interrelation between different actual or physically-possible instances of gravitational acceleration. That is, without positing dynamic structures, one can *causally* explain phenomenal spaces comprising observable effects that actual *natural forces* can produce; but one cannot fully understand the *nature* of these unobservable natural forces.

Why *causal* relations, rather than something like *nomological* relations? Simply put, because I am skeptical that nomological relations suffice to ground truly *realistic* scientific explanations, absent further grounding of these nomological relations in actual causal powers. Here it is helpful to consider a third kind of scientific 'structuralism': *structural idealists* claim that the explanatorily-basic 'structures' disclosed by science are *abstract* entities, whether it be mathematical objects, ideal Forms, laws of nature, or mental arrangements of 'sense data'. Note that structural idealism is compatible with standard forms of structural realism, if one claims that the explanatory-basic structures disclosed by science are objectively real but abstract. Again, recall Tegmark's claims that "our physical world [i.e., 'external physical reality'] is an abstract mathematical structure."⁷²⁵ Again, most will reject Tegmark's view. Most people think that mathematical forms preserved across theory change *represent* a distinct, concrete physical world.

Nevertheless, I claim that structural idealism is ubiquitous in contemporary philosophy of science, albeit in subtler forms. To take just one suggestive (if inconclusive) case, consider Tim Maudlin's proposal that the laws of nature "operate to generate or produce" later states of the universe from its initial state.⁷²⁶ Maudlin is not a self-described structuralist, let alone structural idealist. But if the laws of nature—"the patterns that nature respects"⁷²⁷—are abstract entities, then Maudlin would be committed to the view that abstract 'patterns' literally 'generate' physical states of affairs.⁷²⁸ This would in turn bear conspicuous resemblance to early modern natural philosophers' understanding of the laws of nature as pure acts of Will whereby God rationally orders matter. Some may find idealistic views like this acceptable, but I do not. Electrons are not pushed around by words, rules, or abstract entities like numbers—especially in the absence of a divine Mind. This leaves two plausible options: one can deny that laws of nature 'generate' physical states; or insist that laws of nature are *concrete* 'patterns', like dynamic structures are.

⁷²⁵Tegmark 2008, 101.

⁷²⁶Maudlin 2007, 174.

⁷²⁷Maudlin 2007, 15.

⁷²⁸I do not claim that Maudlin conceives of the laws of nature as abstract entities, although he may: it is hard to tell.

But then why not just appeal to dynamic structures, in the absence of underlying natural forces? Because a dynamic structure that is not grounded in an underlying mind-independent causal power would be a *merely ideal* structure, i.e., something like a Platonic Form. And I do not believe that Forms are capable of causing phenomena like gravitational acceleration. To suggest otherwise is to indulge in metaphysical idealism, or crypto-idealism, masked by a veneer of scientific realist commitment to the approximate truth of claims about unobservable entities.

Dynamic structuralism makes more realistic sense of things. Unobservable natural forces have a causal impact on observable phenomena, e.g. by producing observable gravitational acceleration. In turn, fields of observable phenomena causally impact us, as intelligent subjects with powers of sensory perception. Dynamic structures *are* this causal impact, of unobservable natural forces on us as intelligent subjects, mediated by observable phenomena. Unobservable natural forces are objective causal powers to impact observable phenomena, and corresponding dynamic structures are the purely intelligible aspect of this empirical impact. Gravity causes apples and other things to fall, and thereby indirectly causes us to have a purely intellectual apprehension of its dynamic structure, which is approximated by the Newtonian expression $[-Gm/r(t)^2]\mathbf{n}$. An intellectual apprehension of the dynamic structure $[-Gm/r(t)^2]\mathbf{n}$ is of course a mental representation. But the dynamic structure itself is a mind-independent physical property.

14.6. In physical science, we *objectively represent* two main classes of thing: observable phenomena, and unobservable dynamic structures. The dynamic structures disclosed by physical science are concrete, not abstract, but they are nevertheless unobservable because they are constituted by purely intelligible mathematical relations between concrete physical properties. Dynamic structures have no sensory qualities, nor spatiotemporal properties—although they may be constituted in part by algebraic relations between spatiotemporal properties.

But in physical science we also *apprehend* causally-powerful natural forces, or unobservable causal powers to produce observable phenomena ordered by corresponding explanatorily-powerful dynamic structures. We apprehend natural forces in part by *using* them to mentally order physical properties—namely, by *mathematically relating* physical properties to one another, in the image of corresponding dynamic structures. Through physical principles, in turn, we systematically relate this intellectual apprehension of dynamic structures to observable phenomena, or the quantitatively determinate measurement of physical properties. This

principled *comprehension* of observable phenomena under the ambit of unobservable dynamic structures is *physical explanation*, as I understand it. Physical science thus aims at intellectual apprehension of causally-basic natural forces, through physical explanation. In using dynamic structures to explain phenomena, we intellectually re-enact fundamental natural forces' impact on observable reality, and thereby understand them.

15. Physical Force as Transcendental Ground (II): Natural Form

As we have seen, then, Cassirer and a range of physicists—including Dirac, Bohr, Schrödinger, and Heisenberg—associate the failure of 'mental pictures' in quantum theory or modern physics more broadly with a failure of *spatiotemporal* representation. And here, again, Kant's account of space and time as the 'pure forms' of our sensible intuition is directly on at least some of their minds. In turn, the more that a traditionalist takes spatiotemporality to be 'merely' a way that things appear to sensuously-perceiving human beings, the more inclined she will be view modern physics' liberation from 'mental pictures' and “the causal space-time model of description”⁷²⁹ as progress in the quest for objectivity.

Ironically, then, the modern structuralist aversion to 'intrinsic' properties is often essentially in keeping with the aspiration to objectivity interpreted as knowledge of things 'in themselves' rather than as they 'merely appear' to us. For most if not all modern structuralists, our purely 'structural' knowledge of unobservables is explicitly or implicitly contrasted against our knowledge of observable things. Hence, there is every reason to suspect that sensory properties are the paradigmatic 'non-structural' or 'intrinsic' properties for modern structuralists, whether or not they publicly admit this or even privately recognize it. In turn, sensory qualities like color and smell are often taken to be the quintessential properties that things have 'merely insofar as they appear to us', rather than as they are 'in themselves'. So, it seems fair to conclude that many modern structural realists interpret 'non-structural' or 'intrinsic' properties as precisely those properties that things have only insofar as they 'appear' to us, by contrast to 'structural' properties which things supposedly have 'in themselves'. (Neo-Kantians like Cassirer would agree with

⁷²⁹Bohr 1961, 92. More fully: “This theory [viz., 'symbolic quantum mechanics'] may be regarded as a natural generalization of the classical mechanics with which in beauty and self-consistency it may well be compared. This goal has not been attained, still, without a renunciation of the causal space-time model of description that characterizes the classical physical theories which have experienced such a profound clarification through the theory of relativity.”

structural realists that the assignment of 'structural' properties differentiates 'physically determinate objects' from mere 'sensuous things', but insist that physical objects are still phenomena rather than things-in-themselves.) Thus structuralism may involve the epistemological reification of an underlying hostility to sensation, or fetishization of rational form.

Admittedly, structuralism need not be grounded in this sort of rationalistic bias, given that there is no hostility to sensation necessarily involved in pointing out that truly unobservable things have no sensuous properties—and possibly no intuitable or 'picturable' form at all. But the connection is plausible enough to warrant serious consideration. The drive of Cassirer and many others to overcome “[t]he anthropomorphism of the natural sensuous picture of the world”⁷³⁰ arguably reflects a hostility to sensation and intuitive 'picturing' that is rooted in over-identification with 'reason' over 'sense', if not the poisonous resentment towards material reality that Nietzsche finds operative in Plato.

It is pathological for us, as spatiotemporal creatures with basic powers of intuition, to spurn sensation and imagistic knowledge as the merely 'anthropomorphic' residue of a 'higher' imageless intellectual truth. Of course it is right that, as Schrödinger says, “imagination and thought take an increasingly important part (as against crude sense-perception), as science, [scientific] knowledge of nature, progresses.”⁷³¹ However, this reflects the nature of scientific objectivity, not objectivity in general. Setting aside the prejudices of modernity, then, empirical science is not the only cultural form that provides human beings with genuinely objective knowledge of the natural world.

One salient alternative canvassed above is to view 'non-structural' or 'intrinsic' properties as essentially 'private', i.e., as putative qualities that things have independently of their capacity to impact or be impacted by other things. On this interpretation, a given thing's 'structural' properties are its real *powers*, whereas its 'intrinsic' properties are qualities that it supposedly has qua purely inert, or perhaps qua purely 'self-subsistent' substance. If this is what structuralists mean by 'structural' as opposed to 'intrinsic' properties, then metaphysical versions of structuralism basically amount to dynamism, i.e., commitment to a fundamental ontology of force or causal power. Naturalists in this vein, like myself, will insist that all real properties (as

730Cassirer 1921/1923, 381.

731Schrödinger 1954/2014, 94. I have added the qualifier *scientific* to Schrödinger's 'knowledge of nature' because I do not take science to exhaust the field of our knowledge of nature—nor even the field of our objective knowledge of nature.

opposed to merely ideal ones) are powers to impact other natural things, and hence that no real properties are 'intrinsic', in this specific sense. Thus I claim that real things—i.e. natural things—have no real properties 'in themselves', if 'in themselves' is taken to mean 'apart from their power to impact other real things'. My own brand of dynamistic naturalism is thus broadly similar in spirit to Dirac's view that “science is concerned only with observable things, and [...] we can observe an object only by letting it interact with some outside influence.”⁷³² ('Observability' in this sense is clearly meant to encompass both 'observables' and 'unobservables' in the distinct sense that is more immediately relevant to debates about scientific realism.)

But the best interpretation of the distinction between 'structural' and 'intrinsic' properties, as it pertains to modern structuralism, is perhaps that a thing's 'intrinsic' properties are its causal powers vis-à-vis ourselves construed as perceiving *subjects*, whereas 'structural' properties are objects' causal powers vis-à-vis other *objects*. For traditionalists who endorse the account of objective representation as a universally-valid 'view from nowhere', it follows that 'intrinsic' properties are excluded in principle from objective representation, except insofar as things have some causal powers vis-à-vis a 'universal subject', i.e. a subject who is no-kind-of-subject-in-particular. The traditional candidate for this sort of 'causal power in relation to no-kind-of-subject-in-particular' is *form*—specifically, rational or purely intelligible form, as opposed to intuitive form amenable to 'picturing'. Kantians counter that the objects we encounter in experience are phenomena, not noumena or things-in-themselves, and hence insist that the concepts through which we comprehend things' intelligible form in fact have valid application only for subjects with our spatiotemporal form of sensible intuition. Thus strict Kantian structuralists claim that objective representation is necessarily that of structural relations between objects rather than objects' immediate sensory impact on perceiving subjects, but insist that neither sensory qualities nor structural relations can be predicated of things-in-themselves.

Once one understands the distinction in this third way, though, it should become clear that *there is no essential epistemic asymmetry between 'structural' and 'intrinsic' properties*. The way that objects causally impact us can give us perfectly genuine knowledge of them. Of course, only certain kinds of things are subjects capable of experiencing sensations of color, smell, taste, etc., and even then only with respect to certain objects. But that does not entail that descriptions of objects in terms of their sensuous qualities are inaccurate, non-factual, or otherwise

⁷³²Dirac 1930/1958, 3. Of course, Dirac is focused specifically on the role that measurement plays in quantum mechanics.

epistemically illegitimate. Objects' sensory properties are real causal powers to impact subjects with certain perceptual faculties, but this is not 'mere appearance' in any epistemically problematic sense. Likewise, things' causal powers vis-à-vis other objects are no more properties of these things 'in themselves' than are their sensory qualities, i.e. their real causal powers of sensory impact in relation to perceiving subjects. Through their immediate sensory impact on us, observable things appear to us as they really are—not as they are 'in themselves', but as they truly are in relation to us.⁷³³ In turn, by learning about how they impact other objects, we can know other aspects of how the same observable things really are—not 'in themselves' or 'inter-subjectively', but as they truly are in relation to other objects.

Even if we do not have to experience unobservable things through sensation in order to know them scientifically, clearly our knowledge of unobservables requires that they be brought under the ambit of some other human faculty. If we cannot *sense* an electron in a singlet state, or even intuitively *picture* it in any more abstract sense, nevertheless we *think* or *conceptualize* it. Bypassing sensation and intuition in favor of purely intelligible 'structure' does not remove us from 'anthropomorphism' or the 'particularity' of human experience, in a totally unremarkable sense. Our 'reason' is just as much a human power as is our 'sense'. Pure conceptualization or strictly intellectual knowledge simply places different 'anthropomorphic' constraints on us than does intuition or sensation. For instance, aesthetic experience can provide genuinely objective understanding of mind-independent things, even though the apprehension of beautiful form and

733Can we have experiences of color, tactile sensation, etc., not immediately caused by external objects? Are there cases of abnormal sensory experiences, like people with jaundice tasting even normally-sweet things as bitter? Of course. How do we know when this is happening? Well, in a variety of ways—e.g. by noticing that someone experiencing a given sensation of color or smell is remembering a past experience, or is sleeping rather than awake, or is simply imagining, or is sick. I take this to be a question of merely secondary epistemological interest, despite how much figures like Descartes have been bothered by the (bizarrely abstract) possibility of an 'evil demon' sadistically feeding us false impressions about everything. Cartesian radical skepticism is (by design) impossible to refute on its own terms. But it has nothing to do with any remotely plausible theory of reality or conception of human knowledge. Cartesian skepticism is predicated on a childish demand for an answer to the idiotic question, 'Is the external world really real?' Only someone already fallen prey to hypertrophied subjectivity—to excessive interiority and inadequate receptivity to broader reality—could find this question fully intelligible, let alone urgent.

Compare Heisenberg's suggestion that “metaphysical realism” and the correlative “disagreeable question whether 'the things really exist'” (Heisenberg 1958, 88) should be distinguished from 'practical' and 'dogmatic' realism: “We 'objectivate' a statement if we claim that its content does not depend on the conditions under which it can be verified. Practical realism assumes that there are statements that can be objectivated and that in fact the largest part of our experience in daily life consists of such statements. Dogmatic realism claims that there are no statements concerning the material world that cannot be objectivated.[...]Natural science is actually possible without the basis of dogmatic realism. Metaphysical realism goes one step further than dogmatic realism by saying that 'the things really exist.' This is in fact what Descartes tried to prove by the argument that 'God cannot have deceived us.'[...]The difficulty of metaphysical realism was felt soon after Descartes and became the starting point for the empiricistic philosophy, for sensualism and positivism” (ibid., 81-83).

sublime force is basically non-conceptual. Thus there are forms of objectivity that are orthogonal to intellectualization. On the other hand, purely intellectual knowledge or conceptual understanding can be perversely subjective. For instance, the God of the Judeo-Christian tradition is quintessentially unobservable: totally devoid of sensory qualities, and existing outside of space and time.⁷³⁴ Yet idealization of this infinitely intelligent, perfectly moral, transcendent God is also a paragon of collective subjectivity and self-involvement. The Enlightenment vision of nature as a rational system made in the image of God's perfect Intelligence and Beneficence yields only subjective knowledge—an understanding of nature that is anthropocentric even when not anthropomorphic.

The anthropomorphic picture of an 'intelligent' nature or transcendent God can be rendered objective in two stages:

First, one must embrace Kant's 'Copernican' revolution, recognizing that the 'intelligence' or essential 'rationality' that the Judeo-Christian tradition ascribes to nature qua law-governed is more plausibly the form of our own power of intellect, projected onto nature as an a priori objective condition of possibility for *cognitive* experience—albeit not of *aesthetic*, *mythic*, or *pragmatic* modes of experience. This Kantian inversion is echoed in Hegel's replacement of the standard God with a 'Spirit' that supposedly achieves self-knowledge in the historical realization of universal human autonomy in modern liberal society, and in Left Hegelians' more radically 'materialist' diagnosis of consciousness of God as nothing beyond an alienated mode of human self-consciousness. Hence, I have argued above that specific Judeo-Christian conceptions of God continue to exert significant influence on contemporary interpretations of scientific objectivity, laws of nature, and so forth—albeit mediated by real historical processes of secularization.

Second, one must then naturalize our cognitive powers and so reject the idealism of the Kantian tradition. That is, we must identify the natural grounds of our objective experience. We must understand how the basic forms of our 'sense' and 'reason' are determined by essential features of mind-independent reality—without slipping back into the theory of either a beneficent God or an amoral 'intelligence' manifest in the law-governed order of nature.

⁷³⁴Setting aside traditions that characterize God as immanent in nature (e.g. Spinozism).

16. Physical Force as Transcendental Ground (III): Physical Systematicity as the Natural Form of Human Intellect

16.1. There are several ways to see that the basic natural form of our intellectual understanding is mind-independent *physical systematicity*: impersonal, amoral, arational *physical order*. (Insofar as scientific objectivity involves this distinctively intellectual mode of understanding, physical systematicity is hence the primal natural form underlying the possibility of scientific objectivity.) First, we may examine physical systematicity directly in relation to the ur-form of scientific understanding: the explanatory subsumption of observable phenomena by an underlying unobservable reality. This is what I have done in the previous section on 'dynamic structuralism', with attention to the idiosyncratic emphasis on strictly intelligible structures in physical scientific explanation. Second, we may examine physical systematicity in relation to early modern conceptions of law-governed order, and the latter's connection to ideas of a personal 'God' as well as the impersonal 'intelligence' envisioned by Einstein and other secularized pantheistic rationalists. I have done so earlier above, in Chapter II. Third, we may look to the relationship between physical systematicity and scientific conceptions of theoretical virtue, or the explanatory desiderata that guide scientists' choices between competing theories.

16.2. Scientists choose between competing theories using criteria beyond just *empirical fit*, or 'saving the phenomena' that have been observed to date. Philosophers of science have proposed various such 'superempirical' virtues.⁷³⁵ (More precisely, by a 'superempirical' virtue I will mean a theoretical virtue besides empirical fit or *empirical adequacy*, where the latter indicates accuracy with respect to all possible observations, not just those already performed.⁷³⁶) But Kuhn captures a fairly broad consensus in pointing to *consistency*, *breadth of scope*, *simplicity*, and *fruitfulness* as generic virtues of scientific theories, besides the basic virtue of

⁷³⁵The first use of the term 'superempirical' in the context of theory choice seems to be Churchland 1985. Ernan McMullin also used 'superempirical' in to refer to theoretical virtues in his earlier work (McMullin 1998), but later retreated from it ("superempirical" and 'non-empirical'[] do not quite fit") to "complementary virtues" (McMullin 2014, 565).

⁷³⁶McMullin draws the same distinction, and makes a good point about its relation to theory choice: empirical adequacy "cannot[...]be employed in theory assessment as a criterion. Attributing empirical adequacy to a theory is a promissory claim; it cannot be definitively made good. Empirical adequacy is a goal of theory, of course, and as such could qualify as a theory virtue but not one itself relevant to the task of assessment" (McMullin 2014, 565). Cf. van Fraassen 1980.

accuracy (by which he means empirical fit).⁷³⁷ Kuhn allows that this list is incomplete, but insists that “together with others of much the same sort” these desiderata constitute “*the* shared basis” of historical scientific theory choice.⁷³⁸ Some commentators even claim that philosophical theory choice should be guided by the same theoretical virtues that underlie 'abductive' inference to the best explanation in the sciences.⁷³⁹

Kuhn argues that these basic desiderata, the “characteristics of a good scientific theory,”⁷⁴⁰ all function as values amenable to highly variable interpretation and application, not as precise rules that always dictate a clear 'winner' among any given set of competing theories. This of course amounts to a direct repudiation of logical empiricists' quest to develop a precise 'inductive logic'.⁷⁴¹ Kuhn suggests that this inherent vagueness, along with tension between different explanatory values and the ambiguity of their relative weighting,⁷⁴² makes it possible for scientists to disagree about the merits of a given theory while nevertheless sharing the same basic criteria of explanatory success.⁷⁴³ Thus Kuhn's model of theory choice lends simultaneous credence to two intuitive but superficially incompatible notions: that there is broad scientific agreement about basic theoretical virtues, but that substantial disagreement among experts in a given domain of scientific research is nevertheless often perfectly reasonable.⁷⁴⁴

Notably, then, philosophers of science generally agree that researchers do and should choose between competing theories with an eye towards desiderata beyond empirical adequacy. These 'superempirical' theoretical virtues are best construed as values, as Kuhn argues, rather than precise rules or norms. And the virtues that ground distinctively scientific conceptions of explanatory success apparently include criteria like *simplicity*, *fertility*, and *scope*. However,

737Kuhn 1977. By 'accuracy', Kuhn means that “consequences deducible from a theory should be in demonstrated agreement with the results of existing experiments and observations” (ibid., 321)

738Kuhn 1977, 322 (original emphasis).

739For instance, see Williamson 2016, 268. Williamson explicitly links the 'broadly abductive methodology' he advocates to “the intrinsic virtues of a good theory,” specifically 'simplicity' and 'strength' (ibid., 266). Notably, these are the two virtues highlighted in David Lewis' 'best systems' account of laws of nature (see Lewis 1973, 1983, and 1994).

740Ibid., 321.

741Cf. Carnap 1962, 223.

742Ibid., 322-324.

743 In particular, Kuhn identifies five explanatory norms widely shared over time and across disciplinary boundaries: *accuracy*, *consistency*, *breadth of scope*, *simplicity*, and *fruitfulness*. Kuhn acknowledges that this list is not exhaustive, but claims that “together with others of much the same sort,” these five *values* are constituents of “*the* shared basis” underlying historical theory choice (Kuhn 1977, 322, original emphasis).

744 Kuhn argues that it is also *beneficial* for scientific decision-making to support divergence: disagreement grounds the simultaneous pursuit of incompatible theories, which serves as a form of bet-hedging for the scientific community, facilitating the pursuit of nascent (and potentially revolutionary) theories while remaining responsive to the reality that new theories rarely enjoy sustained success (Kuhn 1977, 332).

there has been protracted disagreement about the justificatory status of even commonplace virtues like simplicity and fertility.⁷⁴⁵

The major fault lines in this debate are intuitive. Some claim that virtues like simplicity or fertility are related to *epistemic* phenomena like (approximate) truth, likelihood, confirmation, or the projectability of empirical regularities—at least, insofar as these 'virtues' are truly *appropriate* criteria for scientific decision-making.⁷⁴⁶ Thus some scientific realists try to show that virtues like simplicity have confirmational value, in an effort to justify their abductive inferences to the (approximate) literal truth of our best scientific theories. Similarly, some scientific anti-realists argue that the history of science grounds legitimate inductive arguments to the effect that deference to traditional standards of superempirical theoretical virtue—perhaps subject to specific interpretations and relative weightings that vary between domains of inquiry⁷⁴⁷—has reliably resulted in the development of empirically adequate (or increasingly empirically adequate) theories, and hence plausibly will continue to do so. Of course, this inductive argument is equally available to scientific realists if it is strengthened by insisting that a theory's (increasing) empirical adequacy evidences its (at least approximate) truth. Kuhn, Quine and Ullian, and McMullin have all endorsed realist or anti-realist variations on this basic inductive defense of traditional superempirical virtues.⁷⁴⁸ Finally, some more old-fashioned metaphysical realists assert the epistemic value of traditional superempirical theoretical virtues by claiming *a priori* insight into the universe's amenability to accurate description via mathematically elegant, ontologically parsimonious, far-ranging theories⁷⁴⁹—perhaps because 'God made it so,' as Dirac once casually justified his view of mathematical beauty as a hallmark of sound physical theory.⁷⁵⁰

But other parties reject this epistemic approach. Some non-epistemic theorists insist that desiderata like simplicity are just pragmatic or aesthetic virtues.⁷⁵¹ Others emphasize political

745I will not distinguish between 'fertility', 'fruitfulness', and 'fecundity' in this context.

746With respect to *truth*, see Hempel ([2000], ch. 5) and van Fraassen ([1980], p. 87). Van Fraassen (*ibid.*, p. 90) also denies a link between traditional superempirical desiderata and *empirical adequacy*.

747On the contextually-varying value of simplicity, see Salmon [1990], p. 186.

748See Kuhn 1977, 335; Quine and Ullian 1970, 47; McMullin 1988, 366.

749Relatedly, Kantian metaphysical anti-realists may claim that traditional superempirical virtues are at least partially constitutive of an idea of the unity of science that is 'required by reason' as a regulative ideal.

750Hempel 2000, 81. Cf. the less metaphysically-loaded explanation that Dirac offered in print ([1954], p. 268).

Relatedly, Duhem notes intuitive associations between superempirical theoretical virtues and truth, claims that we cannot justify them, and yet retains a place for them as necessary 'acts of faith' (Duhem 1906/1991, 26-7).

751Here recall, for instance, that Mach and neo-instrumentalists like van Fraassen all interpret features like simplicity and breadth of scope as essentially pragmatic virtues. Recall also Duhem's appeal to the 'beauty' of physical theories.

factors that make certain theoretical virtues seem attractive or unattractive, in specific social contexts.⁷⁵² Others see virtues like simplicity as aims valuable 'finally', or purely for their own sake.⁷⁵³ Still others treat virtues like simplicity as constitutive features of science that have no force on those outside the scientific 'game'.⁷⁵⁴ Members of either the epistemic or the non-epistemic camp may claim that the more virtuous a theory is, the more explanatory power it has and understanding it provides.⁷⁵⁵

These conventionalist, pragmatic, epistemic, and naive realist interpretations are all inadequate. We should instead look to find traditional theoretical virtues' ontological significance. Their epistemic status, and their epistemological function as basic transcendental conditions underlying the possibility of scientific objectivity, can only be fully understood in relation to this ontological analysis.

16.3. Physical order is the ontological correlate to a cluster of standard theoretical virtues that I will refer to collectively as the virtue of *systematicity*: empirical adequacy, precision, simplicity, and breadth of scope. The unobservable phenomena posited by a given scientific theory are more likely to be real insofar as it strongly displays the virtue of systematicity. This is not because 'God made it so,' or anything of the sort. It is because *unobservable things' empirical reality just is their causal power to produce corresponding fields of physically-ordered observable phenomena, and the virtue of systematicity is directly constitutive of the scientific notion of evidence for the existence of this causal power.* This is not meant to be a non-question-

752E.g. see Longino's argument in defense of a set of alternative 'feminist theoretical virtues', such as *ontological heterogeneity* and *novelty* (Longino 1995, 1996, 1997): she argues that these alternative virtues 'reveal gender' (1996, 50) in social contexts structured by gendered power asymmetries, and by contrast that the structure and mechanisms of gender are obscured by commitment to traditional theoretical virtues (1995, 1996).

753For a thing to be valuable *for its own sake* or *finally* (as opposed to merely *instrumentally*) is distinct from its being valuable *intrinsically* or 'in itself' (as opposed to *extrinsically* or in relation to something else). See Korsgaard ([1983]).

754In this vein, Kuhn (1977, 331) argues that “[d]ifferent creative disciplines are characterized, among other things, by different sets of shared values,” and suggests that desiderata like empirical adequacy, simplicity, breadth of scope, and fruitfulness are essential characteristics of the *scientific* discipline. (He elaborates: “Change the list, for example by adding social utility as a criterion, and some particular choices will be different, more like those one expects from an engineer. Subtract accuracy of fit to nature from the list, and the enterprise that results may not resemble science at all, but perhaps philosophy instead” [ibid.].) Likewise, Hempel notes that science “is widely conceived as seeking to formulate an increasingly comprehensive, systematically organized, world view that is explanatory and predictive,” and suggests that traditional explanatory desiderata like accuracy, consistency, simplicity, scope, and fruitfulness “may best be viewed as attempts to articulate this conception somewhat more fully and explicitly” (Hempel 1983, 91).

755However, many realists will here add the qualifier '*...provided that the given theory is also at least approximately true*'.

begging argument against scientific anti-realism. It is meant to be an account of the specific sense in which systematicity is a sign of theories' literal truth, presupposing scientific realism.

Here my view is helpfully compared to Quine's. He argues as follows, in an essay on "Posits and Reality":⁷⁵⁶ Basic physics teaches us that everyday solid objects like desks are really 'swarms' of vibrating molecules. Physicists' evidence for this 'molecular doctrine' is at root a matter of its realizing basic explanatory virtues like simplicity, scope, fecundity, familiarity of principle (analogous to Kuhn's 'external consistency'),⁷⁵⁷ and empirical adequacy. So while the molecular doctrine evidently "bears directly on unobservable reality," nevertheless "any defense of it has to do rather with its indirect bearing on observable reality."⁷⁵⁸ Notably, we could eliminate the molecular doctrine's unobservable 'core' while preserving the observable consequences we derived from it as 'autonomous empirical laws'. This raises a skeptical worry: "Might the molecular doctrine not be ever so useful in organizing and extending our knowledge of the behavior of observable things, and yet be factually false?"⁷⁵⁹

After all, Quine notes, science clearly arrived at the notion of a 'swarm' of molecules by way of analogy to the experience of observable swarms—of hovering gnats, floating dust particles in a shaft of sunlight, and so forth. So perhaps the idea of an unobservable swarm of molecules is *merely* analogical or figurative, not literally true. Indeed, the famous complementarity of particle-like and wave-like descriptions in quantum mechanics suggests that the picture of an unobservable 'swarm' of atoms or elementary particles is at best incomplete, and in the final analysis perhaps even entirely dispensable. Thus it may seem that apparent physical posits of unobservable particles may really just be devices for organizing our experience of observable objects. But then one might argue that our evidence for the existence of *observable* objects is ultimately of the same kind as our evidence for the existence of unobservable objects: perhaps "[t]he positing of either sort of body is good science insofar merely as it helps us formulate our laws—laws whose ultimate evidence lies in the sense data of the past, and whose ultimate vindication lies in anticipation of sense data of the future."⁷⁶⁰ The result would seem to be the radical phenomenalist's "double verdict of unreality," which leaves us with an ontological

756Quine 1966, 233-241.

757"Another [benefit credited to the molecular doctrine] is familiarity of principle: the already familiar laws of motion are made to serve where independent laws would otherwise have been needed" (Quine 1966, 234).

758Quine 1966, 234-5.

759Ibid., 235.

760Quine 1966, 237.

fundament of “nothing[...]but the raw sense data themselves.”⁷⁶¹

But Quine argues that this is a fallacious inference, stemming from a conflation of three different types of 'fundamentality'. Unobservable physical particles are 'naturally' fundamental: “laws of behavior of those particles afford, so far as we know, the simplest formulation of a general theory of what happens.”⁷⁶² Common-sense bodies like tables and rocks are 'conceptually fundamental': “it is by reference to them that the very notions of reality and evidence are acquired, and that the concepts which have to do with physical particles or even with sense data tend to be framed and phrased.”⁷⁶³ Thus “[u]nless we change meanings midstream, the familiar bodies around us are as real as can be.”⁷⁶⁴ Likewise, “[h]aving noted that man has no evidence for the existence of bodies beyond the fact that their assumption helps him organize experience, we should have done well, instead of disclaiming evidence for the existence of bodies, to conclude: such, then, at bottom, is what evidence is, both for ordinary bodies and for molecules.”⁷⁶⁵ And sense-data are 'evidentially' fundamental: “every man is beholden to his senses for every hint of bodies.”⁷⁶⁶ Quine notes (rightly) that sense-data are no less 'posits' than bodies are: “[t]hey are posits of psychological theory,” which “may be construed as a hypothetical component of subjective experience standing in closest possible correspondence to the experimentally measurable conditions of physical stimulation of the end organs.”⁷⁶⁷

My own scheme can be understood in relation to Quine's, although it differs in several respects. On my view, empirical scientific understanding treats observable phenomena as *existentially* and hence *confirmationally* fundamental. The 'empirical basis' functions in science as the paradigm of that which truly exists or actually happens. Again, observability in the sense relevant to empirical science is a joint pragmatic-psychological designation, grounded in a liberal-universalistic appeal to the amenability of certain natural phenomena to direct sensory perception by more or less anyone. Only sensible objects, i.e. things with sensory qualities, can be 'observed' or 'directly perceived', in the sense relevant to empirical science. But direct sensory perception *that* a given thing is a *certain kind* of observable object also requires the pre-conscious use of a corresponding concept. To 'observe' a dog without perceiving it *as* a dog is

761Ibid.

762Quine 1966, 239.

763Quine 1966, 239.

764Quine 1966, 238.

765Quine 1966, 238.

766Quine 1966, 239.

767Quine 1966, 239.

really just to observe another conceptually-determinate kind of thing or else a purely indeterminate *something*, from which the existence of a dog can at most be indirectly inferred. Observations and facts about observability are thus inevitably 'theory-laden'. It *matters* to scientific epistemology whether one observes the mountains on the Moon through the telescope *as* the mountains on the Moon, or just 'observes' them *as* a pattern of light and dark in the telescope lens itself. Hence, what we are and are not able to directly perceive does indeed vary as our theoretical understanding of the world changes. But human beings in fact have enough stable folk-theoretical common ground that science can still be empirically progressive or accumulative at the level of observable facts. At root, then, in empirical scientific understanding we know that unobservable things exist because they successfully explain observable things that we know to exist by simple common sense. Empirical science is thus essentially liberal-universalistic, or *mass-democratic*.

Contra Quine, sense-data are no more evidentially fundamental in empirical science than are observable objects like a needle on the dial of a laboratory device. If anything, common-sense observable objects are evidentially prior to sense-data. In virtually any imaginable domain of empirical scientific inquiry, the existence of the needle on the dial would be taken to be more secure than the existence of a cluster of sense-data that (hypothetically) grounds observers' mental representations of this needle. Sense-data may be *psychologically* fundamental in empirical scientific cognition, but they are existentially and evidentially derivative for scientific understanding. The existence of dial-needle-sensations is grounded in the existence of the dial needle, not vice versa. And in scientific experience we are immediately aware of the needle itself, not pre-objectual needle-sensory-impressions. Aesthetic experience, however, does essentially involve the direct non-cognitive awareness of sensory qualities.

Unobservable or 'hypothetical' things are *explanatorily* fundamental in empirical science. Scientific understanding essentially involves explaining observable phenomena by appeal to the properties of unobservable things or 'theoretical' entities. Note that 'unobservability' in the relevant sense is a contextual rather than absolute designation: something is 'unobservable' insofar as we infer its existence from its explanatory power vis-à-vis 'observable' phenomena, rather than by directly perceiving it. In principle, then, a given thing can be observable in some contexts (when directly perceived) and unobservable in others (when its nature is inferred from the way it explains directly perceivable phenomena). But the basic objects of modern physical

theory are strictly unobservable. Unobservable physical phenomena do not *causally* explain observable phenomena, in scientific understanding. Rather, in purely scientific understanding observable phenomena are *structurally* explained by unobservable physical phenomena.

Systematicity is *transcendentally* fundamental in empirical scientific understanding. Here it is crucial to respect the distinction between reality and mere existence. The immediately observable objects of common-sense experience clearly exist. This is undeniable to all but Cartesian skeptics, who are trapped inside their own minds in a way that is plainly pathological. In turn, the existence of unobservable things that are causally responsible for certain commonsensically observable phenomena is evidenced by the systematicity of corresponding theories. Every good scientific theory as such displays the theoretical virtue of systematicity. Hence, every good scientific theory as such discloses mind-independent physical order, which I argue reflects causal hierarchies between unobservable and observable things. Scientific understanding distinctively involves taking systematicity as the basic criterion of (empirical) reality. The absence of systematicity is always merely apparent, for scientific understanding. Natural phenomena become scientifically real only to the extent that they are systematized. A plainly observable phenomenon like the position of a needle on a dial has no inherent scientific significance. The needle clearly exists, of course. But this does not guarantee its intelligibility for scientific understanding, nor even its empirical reality. Neither observable nor unobservable things are scientifically intelligible in themselves. Unobservables are scientifically intelligible only in relation to observable phenomena that they produce systematically. And observables are scientifically intelligible only in relation to the unobservables that systematically produce them. Observable things are objective *appearances*, for empirical science. And they become *objective* appearances for science only insofar as they are explained by appeal to unobservable reality. Scientific intelligibility is directly predicated on systematicity.

Imperceptible things exist. And the way that we know about them, through science, is to use theoretical accounts of their properties and behavior to systematically explain observable phenomena. Successful explanation of observable phenomena using theories that strongly display the virtue of systematicity just is how it is possible for us to know facts about unobservable reality. This is not an empirical claim. We do not learn from experience that systematic theories give us accurate factual knowledge of unobservable reality. The link between systematicity and the approximate literal truth of scientific claims about unobservables cannot be

empirically refuted, and it cannot be empirically confirmed. Scientific understanding stipulates a priori that systematicity is the hallmark of empirical reality, and that its absence is always only apparent.

16.4. Systematicity is the a priori form of human intellectual understanding, and hence functions as the basic transcendental ground of scientific objectivity. But this does not entail Kantian idealism. For what does it mean that systematicity is the basic form of the human intellect? Is it just a brute fact that we are so constituted? Or can this fact about the human mind be accounted for naturalistically, in relation to a broader understanding of mind-independent reality? Clearly the latter. Physical systematicity is a basic feature of the natural world.

One might attempt to naturalize the claim that systematicity is the basic transcendental form of intellectual understanding by appeal to broadly Darwinian considerations of evolutionary fitness. That is, one might claim that differential receptivity to physical systematicity promoted human reproductive fitness, in a way that was favored by natural selective pressure. In short, one could argue that we use physical systematicity as a criterion of empirical reality because doing so 'works' for us, in a pragmatic sense. However, this raises a skeptical worry about the relationship between pragmatic value and truth: could it not be that it *works* for us, pragmatically, to take physical systematicity as if it were a basic criterion of empirical reality, even without this being *true* or epistemically *correct*? The sensible reply is that while this may be conceivable, in the same vague sense as is Descartes' skeptical hypothesis that we may be trapped in a lucid dream or constantly fed false sense-impressions by an 'evil genius', nevertheless it is highly implausible and bizarrely paranoid. A far more plausible explanation, evidently, is that our a priori appeal to systematicity as a theoretical virtue 'works' for us—to the extent that it does—because systematicity in theories corresponds directly to mind-independent physical order, which really is a basic feature of nature. For surely, as John Dewey notes, the basic “requirements of continued existence make indispensable some attention to the actual facts of the world.”⁷⁶⁸ And the pervasiveness of physical order is quite plausibly central among this

⁷⁶⁸Dewey 1920, 10. He elaborates: “The sailor is more likely to be given to what we now term superstitions than say the weaver, because his activity is more at the mercy of sudden change and unforeseen occurrence. But even the sailor while he may regard the wind as the uncontrollable expression of the caprice of a great spirit, will still have to become acquainted with some purely mechanical principles of adjustment of boat, sails and oar to the wind. Fire may be conceived as a supernatural dragon because some time or other a swift, bright and devouring flame called before the mind's eye the quick-moving and dangerous serpent. But the housewife who tends the fire and the pots wherein food cooks will still be compelled to observe certain mechanical facts of draft and

class of pragmatically-indispensable facts.

But the a priori stipulation of physical order in scientific understanding, which grounds the a priori scientific appeal to the theoretical virtue of systematicity, is not *essentially* pragmatic. The evolutionary-psychological explanation by appeal to adaptive fitness is not entirely plausible, and at any rate is not ontologically fundamental. It is often not pragmatically beneficial to apprehend the kinds of real physical order that our intellect makes salient. Einstein understood this perfectly well, noting that “[t]hose whose acquaintance with scientific research is derived chiefly from its practical results easily develop a completely false notion of the mentality of the men who, surrounded by a skeptical world, have shown the way to those like-minded with themselves, scattered through the earth and the centuries.”⁷⁶⁹ Foundational research in science is clearly often divorced from any real concern for practical utility. This could be a non- or indirectly-adaptive use of a faculty that was naturally selected for use in more immediately useful contexts, of course. But it is not clear that this is a strong explanation. Relatedly, but even more importantly, a Darwinian evolutionary explanation of physical order's role as the basic form of our intellectual understanding still places humans and their needs at the center of human experience. It is still unduly anthropocentric. It is still excessively subjective.

More objectively, physical order is the a priori form of human intellectual understanding because systematic theories as such disclose physical order, and physical order is a fundamental aspect of the natural world. Here a skeptic may protest: 'Why should we assume or expect that human nature, or one of our essential cognitive powers, neatly tracks the fundamental aspects of mind-independent reality?' But this skepticism is misguided. We should expect that human nature is determined by fundamental aspects of mind-independent reality *because we are natural beings*, where to be a natural being is to either be a fundamental feature of the natural world, or else to have one's essence determined by fundamental features of the natural world. Hence, for beings like us that do not in fact lie at the center of reality—who are not gods—, to be natural is to be essentially determined by higher modes of force. In this light, then, it need not be 'adaptive' for us to be cognitively determined by order-producing physical force. It is simply a fact about a

replenishment, and passage from wood to ash. Still more will the worker in metals accumulate verifiable details about the conditions and consequences of the operation of heat. He may retain for special and ceremonial occasions traditional beliefs, but everyday familiar use will expel these conceptions for the greater part of the time, when fire will be to him of uniform and prosaic behavior, controllable by practical relations of cause and effect” (1920, 11). See also *ibid.*, 89-91.

⁷⁶⁹Einstein 1949, 28.

natural hierarchy. Physical force is elemental, and it determines the basic form of our intellect.

Nature is not intelligent. It is not trying to achieve self-consciousness or 'know itself' in human thought. We are intelligent, as humans. But the broader natural world is also not essentially intelligible or amenable to our power of intellectual understanding. Although physical order is amenable to our intellectual understanding, this is not *its* essence or nature. Rather, it is part of *our* nature to be intellectually receptive to *it*. Physical order is amenable to our intellectual understanding because ordering force determines the basic form of our intellect.

The objective representational *contents* of empirical science are observable phenomena and the unobservable things that systematically explain them. The intelligible *form* of these contents is physical order: the systematic determination of observable phenomena by unobservable reality. And the real causal ground of this form is *elemental physical force*.

16.5. This framework helps to explain why quantum mechanics is so strange: it closely approximates the ideal of strictly scientific explanation, or purely intellectual understanding of empirical reality. A quantum mechanical wavefunction is not a measurable *phenomenon*, but an unobservable *physical structure* which systematically explains measurable phenomena. Namely, a physical system's wavefunction is an unobservable structure that explains the statistical form of the results of possible observations performed on this system. A wavefunction is not *essentially* a pragmatic tool for organizing our experience of observable phenomena, although of course it has this instrumental effect. Somewhat more deeply, a wavefunction is a *strictly intelligible* physical structure. It has no sensory qualities or determinate spatiotemporal form that could be directly perceived or imaginatively 'pictured'. It has no *intuitable* ('intrinsic') properties, only *intelligible* (purely 'structural') properties. Wavefunctions' existence can only be inferred indirectly from the systematic explanatory power of quantum mechanics. More deeply, wavefunctions are not merely ideal forms, mental representations, or abstract entities. They are concrete but strictly intelligible *dynamic structures* that explain the *phenomenal structure* of possible measurements.

But we must dig deeper still. How can unobservable physical structure explain observable phenomena? How can *structure* explain anything, if not by a kind of magical-idealistic power of 'formal causation'?

The structural explanations of maximally objective empirical science are ontologically grounded in underlying, non-structural causal relations. Namely, real physical structure is the

structure of a real mode of natural force. Observable phenomena are the effect that scientific understanding explains. A specific mode of unobservable natural force—which we may refer to generically as elemental physical force—is the real cause of this effect. And unobservable physical structure is the form of this force. That is, explanatorily-basic physical structures are the unobservable 'shapes' of elemental physical forces' real causal impact on observable things.

Scientific objectivity involves the sensory perception of observable phenomena, the intellectual comprehension of physical structures that explain them, and the purely intuitive apprehension of the elemental forces of which these physical structures are the intelligible forms. Physical structures are intelligible fields of causally fundamental but 'intrinsically' unobservable modes of natural force. Physical structures are elemental force fields.

Quantum mechanical wavefunctions are the fields of elemental quantum force. Quantum force (which is apparently non-local) plays a role in quantum mechanics analogous to that of gravitational force in the general theory of relativity. Construed as an elemental physical force, gravity causes the observable inertial motion of free bodies. The gravitational field, or the metric field defined on the spacetime manifold, is just the concrete but purely intelligible 'pattern' of this inertial motion. Observable phenomena are represented in physical science as the effect or causal impact of unobservable forces. This causal impact in turn has structure, including the kind of concrete but purely intelligible dynamic structure that physical scientific explanation highlights. But impact is not caused by its own structure. Impact is caused by real force. Observable inertial motion is caused by a real but unobservable natural force of gravity, not by the gravitational field or curvature of spacetime.

Why do theorists normally not discuss 'quantum force' or 'gravitational force', then? Why do they only discuss wavefunctions and spatiotemporal curvature, along with 'the phenomena'? Because elemental physical forces are not part of the objective contents of purely scientific representation. Nevertheless, they ground its objective validity. Modern physical scientific explanation collapses into metaphysical idealism if one refuses to posit 'transcendent' forces.

**17. Physical Force as an 'Immanent' (Quasi-)Empirical Object (I):
Inertial Force as Pure *Impetus*, Not *Resistance*, for Poetic Understanding**

17.1. What happens when you take a step onto the hard earth? One standard narrative is as follows: you exert a downwards force on the ground through your foot, and the ground 'pushes back' up on your foot with an 'equal and opposite' force. But you move up more than the Earth moves down, despite the equality of the 'opposite' forces in this interaction, because the Earth is far more *inertially massive* than you, i.e. it has a far greater power of *resisting acceleration*.

This common story raises several questions, for the dynamist who claims that 'reality is force'. First, is inertial mass a 'force'? Second, is this interaction 'agonistic' or 'hierarchical'? If every interaction involving 'equal and opposite' forces is agonistic, then 'hierarchy' will be hard to come by. Third, if this interaction is not agonistic, then which term is dominant, and why?

More broadly, the physicist's systematic appeal to phenomena like inertia and the conservation of momentum or energy constitutes one respect in which modern physics seems especially far from Nietzsche's metaphysics, if not also that of pre-modern paganism and child dynamism. For these physical phenomena seem not to involve any *self-overcoming* of the sort that Nietzsche emphasizes, but rather precisely the kind of *self-preservation* that he disdains as a “*superfluous teleological principle*” (BGE 13). (Recall that he views the Darwinian 'struggle for existence' as a derivative phenomenon, arising only where life's basic self-expansive impulse is denied in confrontation with a superior power, to which the lesser can only react or adapt. Hence, self-preservation is self-overcoming as it manifests in the relatively weak.)

So, again, how should the modern scientific dynamist—for whom *reality is force*, but who is nevertheless also more scientifically responsible than Nietzsche—understand 'self-preservative' phenomena like inertia that are so basic to modern physics? Below, I will briefly develop the following proposal:

It is possible to construct more dynamic ways of viewing apparently 'self-preservative' physical phenomena like inertial mass. I will do so here, by showing how inertial mass can be re-interpreted as a power of pure active and reactive *impetus*, rather than any kind of *resistance* to acceleration. The resulting picture is (by design) entirely consistent with the empirical predictions and mathematical formalism of Newtonian and relativistic physics. But it nevertheless seems 'off', as will become clearer below, in a way that I argue illuminates the nature and limits of scientific representation, as well as its relation to more 'poetic' ways of looking at the world. That is, I argue that the dynamic interpretation of inertial mass presented below involves a *systematic departure from strictly scientific representation*.

In other words, I proceed in this section *as if* inertia were a real force, like Nietzschean will to power. The resulting scheme is no less empirically adequate or explanatorily powerful than the standard view of inertia as 'resistance to acceleration'. Nevertheless, I argue that this novel interpretive scheme passes beyond the limits of truly scientific description. Hence, I do not claim that this account shows how inertia *should* be viewed within a modern scientific outlook. Quite the opposite: I claim that this re-interpretation of inertia is *not scientific*, despite being *just as accurate and explanatorily powerful*. Thus inertial force is *not a genuine physical phenomenon or empirical scientific object*.

Why develop this self-consciously non-scientific re-interpretation of inertia, then? My basic goal is to concretely demonstrate the difference between scientific and poetic modes of objectivity, as well as their perspectival interrelation. The relatively 'static' or 'passive' quality of objective scientific representation, which is on full display in the standard characterization of inertia as resistance to acceleration, is an essential part of the 'game' of modern science. This is not the only game in town—notwithstanding the prevalence of chauvinistic scientism in our time. But scientific representation plays a central role in modern society. And it can involve its own genuine mode of objectivity. Scientific objectivity is a view of mere objects from the standpoint of elemental reality or higher force. Poetic objectivity is a view of elemental reality or higher force, from the standpoint of lesser force.

Inertial force is real, but can only be immediately apprehended *as force* from a non-scientific standpoint. On a scientific outlook, inertial force is *formally represented* as a power of resistance to acceleration. This is an objectively valid mode of representation, in the scientific sense of objectivity. But the objective validity of this scientific mode of representation does not undermine the perfectly genuine reality of inertial force as pure impetus (not 'resistance'). Inertial resistance to acceleration is a scientific representation *of* inertially-impacted objects, *from* the standpoint of inertial force or impetus. This inertial force is real, but it only 'shows up' as force from outside the bounds of science. Inertial resistance is the scientific representation of a real force that can only be poetically described as such.

One more word of warning: in this section, I will focus on inertia in a Newtonian context. Many of the things I say will be directly transferable to an analysis of general relativity. But an account of the relationship between inertial mass and gravity must also be explicitly introduced. The upshot of this is straightforward enough: inertial mass is identical to passive gravitational

mass. That is, the power of inertial 'resistance to acceleration' is identical to the passive power of 'receptivity' to external gravitational fields. In other words, inertial mass is just a power of coupling to the metric field, or the geodesic structure of spacetime. This relativistic description should be compatible with everything I say below, and at the end of this section I will briefly elaborate the relation between reactive impetus and the 'power' of coupling to the metric field.

17.2. As Newton defines it, the 'force of inertia' [*vis inertiae*] or 'inherent force of matter' is the 'power of resisting' [*potentia resistendi*] by which every body 'perseveres' [*perseverat*] in its given state of rest or uniform rectilinear motion. Thus inertial force is that by which a body 'strives' or 'struggles' against [*reluctatur*] a given impressed force 'in order to maintain [*conservandum*] its state'.⁷⁷⁰ ('Impressed force' is the "action [*actio*] exerted on a body to change its state either of resting or of moving uniformly straight forward."⁷⁷¹ For instance, one 'source' [*originum*] of impressed force is *centripetal* force, 'by which' [*qua*] bodies are drawn in [*trahitur*], impelled [*impellitur*], or in any way tend [*tendit*] toward a central point.⁷⁷²) Insofar as Newton envisions the basic structure of physical reality partly in terms of massive bodies' ubiquitous exercises of *inertial force*, then, he seems to view self-preservation both as a fundamental natural phenomenon and as essentially consistent with the nature of force. Newton evidently does not care about the Nietzschean distinction between self-preservation and self-overcoming.

But here we must consider the 'force of inertia' more carefully. A first point worth noting is that—contra Newton—inertia does not actually seem to correspond to a *force*, as we currently understand the latter term. (Hence, inertial force is often referred to as a 'fictitious force'.) After all, Newton's own first law of motion states that "[e]very body perseveres in its state of being at rest or of moving uniformly straight forward except insofar as it is compelled to change its state by forces impressed." And one might have thought that the basic point of this law is precisely that *no force at all* is required for a body to persist in a given state of rest or uniform rectilinear motion. In other words, one might have thought that the point of the *law* of inertia is precisely that there is no self-preservative *force* of inertia. As Bernard I. Cohen suggests, in this vein, Newton's appeal to the *vis inertiae* involves using 'force' [*vis*] in "a sense very different from

⁷⁷⁰*Philosophiæ Naturalis Principia Mathematica*, Def'n 3. All translations of the *Principia* are from (Newton et al. 1999).

⁷⁷¹"...to change its state either of resting or of moving uniformly straight forward" (Definition 4).

⁷⁷²*Ibid.* Definition 5.

later usage,” and is “[n]o doubt[...]a legacy from the traditional (pre-inertial) natural philosophy which held that there can be no motion without a mover.”⁷⁷³

However, this first worry involves a straightforward misconstrual of the Newtonian notion of inertial force. Newton does not claim that the force of inertia is required to maintain a given state of uniform rectilinear motion *in the absence of impressed force*. Rather, he claims only that *insofar as a (massive) body actually undergoes acceleration due to an impressed force*, it actively resists this acceleration by means of the 'inherent force' of its matter. Cohen is therefore mistaken: it is *not* clear that Newton's notion of inertial force is a legacy of the traditional view that there can be 'no motion without a mover'. For there certainly can be motion without a mover, according to Newton. His claim is just that there can be *no acceleration of (massive) bodies without resistance or 'difficulty'*. If this claim is any kind of legacy of traditional proscriptions against 'motion without a mover', then, it can only be via an implicit shift in the meaning of 'motion' from *movement to acceleration*.

In fact, then, the general thrust of Newton's account of inertial force basically comports with Nietzsche's theory of the essential relationship between willing power and overcoming resistance. Nietzsche claims (the reader may recall) that “[...]all expansion, incorporation, growth is striving against something that resists” (*WP* 704 / *KSA* 13:11[111]), proposes that “the will is never satisfied unless it has opponents and resistance” (*WP* 696 / *KSA* 13:11[75]; compare *GS* 56), explicitly associates the “feeling that power is growing” with the feeling “that resistance is overcome” (*A* 2), suggests that “the will to power can manifest itself only against resistances” and “seeks that which resists it” (*WP* 656 / *KSA* 12:9[151]), and emphasizes the value of having enemies to struggle against (*BGE* 260; *GMI*:10; *EH* “Wise” 7; *Z I*: “On War and Warriors” *et passim*). In short, Nietzsche insists that “every event[...]presupposes a resistance overcome” (*WP* 708 / *KSA* 13:14[174]). (On my own view, however, powerful things do not in general *strive* to overcome resistance, as Nietzsche suggests; rather, powerful things just *do* overcome resistance, *because* and *insofar as* they exert real force.) With respect to the question of the relationship between force and resistance, then, the Newtonian doctrine of a 'force of inertia' actually comports well with the Nietzschean theory of will to power.

One important caveat to this compatibility is that whereas Nietzsche claims that every *event* presupposes a resistance overcome, Newton claims only that all *accelerative motion in*

773Cohen 1999, 56.

(*massive*) *bodies* presupposes a resistance overcome. The only 'event' that Newton does not take to presuppose a resistance overcome is thus *inertial motion*. That said, note that inertial motion is for Newton evidently an *absence of 'action'*⁷⁷⁴—a *non-event*, as it were, which (as such) requires no further explanation.

These may seem like fairly superficial points of connection. But as will become clearer below, more intuitive notions of force like Nietzsche's, or those of prehistoric man and young children, arguably make *better* sense of modern physical theory than do standard hermeneutic frameworks. The idea that inanimate objects have a power of self-preservation, or even a basic tendency towards self-preservation, is arguably a bizarre metaphysical conceit rooted in an unduly conservative worldview.

Less judgmentally, however, I simply wish to argue that there is another equally viable interpretation of inertial mass, as a power of impetus. Newton argues that 'impetus' and 'resistance' are simply two different ways of looking at inertia. In a sense, I agree. But Newton's explanation of their 'perspectival' interrelation is unsatisfactory: he privileges the standpoint of 'resistance', and interprets 'impetus' only as a derivative phenomenon—a second-order 'resistance to resistance'.

Newton's perspective is *scientifically* legitimate, but *metaphysically* illegitimate. He succeeds in fully embodying the standpoint of *scientific* objectivity. Indeed, his relatively one-sided emphasis on inertial 'resistance' is a direct sign of his having fully embodied the standpoint of scientific objectivity. But scientific objectivity is not the only genuine mode of objectivity. A more dynamic account of inertial force, which privileges 'impetus' instead of 'resistance', sheds light on this limitation.

This more dynamic account of inertia manifests the appropriation of *scientific* representation by a drive to *poetic* depiction. From the equally-objective standpoint of this poetic drive, what appears to the scientist as an inertial power of self-preservation is in fact an inertial power of kinematic *self-propagation*, in the mode of both *active* and *reactive* impetus. In both modes, the 'goal' of inertia is not to maintain or preserve a given state of motion or rest, but rather to impart it to other things. For the poetic theorist, inertial 'resistance' is not *trying to remain unchanged* when pushed or pulled, but rather something closer to *pushing or pulling back* when one is pushed or pulled.

⁷⁷⁴Recall that Newton defines impressed force as an 'action' [*actio*].

17.3. A concrete example will help to illustrate just how puzzling it is that Newton posits a basic distinction between inertial force and impressed force. Imagine two massive spheres, S_1 and S_2 , in stable orbit around their common center of mass. According to Newton, S_2 experiences an impressed gravitational force whereby it is continually accelerated towards S_1 (and vice versa). In turn, the force of inertia is exerted [*exercet*] by a given body “only during a change of its state, caused by another force impressed upon it.”⁷⁷⁵ Insofar as S_2 is continually accelerated towards S_1 by an *impressed* gravitational force, then, Newton would evidently say that S_2 also continually exerts its own counterposing *inertial* force.⁷⁷⁶ Yet we also know that S_1 is reciprocally accelerated by an *impressed* gravitational force due to S_2 . And this raises a question: how does the *inertial* force of S_2 , i.e. the force whereby S_2 actively 'resists' its continual gravitational acceleration towards S_1 , relate to the *impressed* gravitational force whereby S_1 is reciprocally attracted toward S_2 ? Are they *distinct* forces, or *the same force* simply viewed from a different perspective?

Perhaps surprisingly, I claim that the latter is not so far from the truth of the matter—*from the poetic-not-scientific point of view*. Each sphere inertially 'resists' its gravitational acceleration toward the other precisely insofar as it causes the other sphere to undergo 'opposite' acceleration toward itself. If the two spheres have equal mass, then this 'opposite' acceleration will of course be equal in magnitude. But if the spheres have unequal masses, the gravitational acceleration induced in the more massive sphere is less than the 'opposite' acceleration it *reactively* induces in the less massive sphere. And this is the sense in which bodies with greater mass exert a greater 'force of inertia' when undergoing acceleration. The greater the inertial mass of a given body, the greater the 'opposite' acceleration or momentum-change it induces in any source or locus of an impressed force of a given magnitude by which it is accelerated. Indeed, inertial mass in its *reactive* aspect⁷⁷⁷ just is this power to induce 'opposite' acceleration or reciprocal changes of momentum. Thus the force of inertial 'resistance' is not the active exercise of a power of *self-preservation*, but rather the active exercise of inertial mass understood as (in part) a power of *reaction* or *reciprocal accelerative impact*.

⁷⁷⁵*Principia* Definition 3.

⁷⁷⁶Although Newton says that the force of inertia is exerted 'only' during massive bodies' acceleration, the clear implication is that it is also exerted *whenever* massive bodies accelerate.

⁷⁷⁷I also take inertial mass to have an *active* aspect, insofar as it is a power to exert inertial *impetus*. This point is elaborated below at length.

Note that in the context of a field-theoretic interpretation of either gravity or non-gravitational 'impressed' forces, the 'opposite acceleration' induced by an inertially-reacting 'test' body will be opposite *momentum-change*. That is, an inertially-massive body will reactively induce *momentum-change*, not acceleration per se, in an external field whereby it is accelerated. And this momentum-change will be 'opposite' to the originary momentum-change that it undergoes due to the field, in the sense that it will be equal in value and opposite in direction. Hence, the overall conservation of momentum in this interaction is the result of a real inertial force of reaction, balancing an active force.

In order to further motivate this poetic (not scientific) interpretation of inertia, which many readers will presumably still find obscure if not counterintuitive, it helps first to note that Newton posits the force of inertia in relation to his observation that “every body is only with difficulty put out of its state either of resting or of moving [*ut corpus omne de statu suo vel quiescendi vel movendi difficulter deturbetur*].”⁷⁷⁸ His thought is then evidently that this 'difficulty' of inducing acceleration is either itself aptly characterized as a force, or else has a source (cause, explanatory ground, etc.) that is aptly characterized as a force. In other words, one might wonder, '*Granted, it's clearly difficult to accelerate (massive) bodies—but how or why is it difficult?*'; Newton evidently responds, '*It is difficult insofar as massive bodies actively resist being accelerated*'. And the 'force of inertia' just is this active exercise of massive bodies' essential 'power of resisting'. Admittedly, a different answer to the question might seem better. Namely, one might insist that it is 'difficult' to accelerate bodies, not because they exert an 'inertial force' of resistance to any acceleration they undergo, but rather *because and insofar as they are massive*—or perhaps better still, *because massive bodies as such have inertia*.⁷⁷⁹ But note that Newton himself insists that the force of inertia “does not differ in any way” from 'the inertia of the mass' of a given body, “except in the manner in which it is conceived.”⁷⁸⁰

Consider the gravitational interaction between the Sun and Earth again, in this light. In what sense, exactly, is it 'only with difficulty' that the Sun undergoes acceleration toward Earth? Two options are salient: (1) it is 'only with difficulty' that the Sun accelerates toward Earth just in the sense that this acceleration *requires an impressed force* (i.e. gravity, in this case), rather than

⁷⁷⁸*Principia* Definition 3, elaboration.

⁷⁷⁹To the extent that a 'force of inertia' is also attributable to massless particles like photons, 'because and insofar as they are *massive*' might ultimately have to be replaced with something like 'because and insofar as they have *momentum*'.

⁷⁸⁰*Principia* Definition 3, elaboration.

being possible absent any forces; or alternatively (2) it is 'only with difficulty' that the Sun accelerates toward Earth in the sense that *the inertial body as such reactively 'pushes or pulls back' against the source or locus of the impressed force by which it is accelerated, thereby inducing an 'opposite' acceleration or change of momentum in it* (i.e. the Sun induces reciprocal acceleration in Earth). The first of these options may seem preferable, but in fact it is inadequate. The inertial 'difficulty' of accelerating the Sun cannot simply be constituted by the fact that this acceleration requires an applied force. For then the force of inertia would not actually be a distinct force. Rather, the inertial force of a given massive body would just be another way of identifying the *impressed* force that is required to induce the acceleration that it in fact undergoes. Yet this is clearly not how Newton views the force of inertia. Again, he insists that “a body exerts this force only during a change of its state, caused by another force [*vis aliam*] impressed upon it.” So he evidently sees a given body's force of inertia as *distinct* from the impressed force that accelerates it. The second option is better: the 'difficulty' involved in accelerating an inertial body is just the reactive 'opposite' acceleration that it induces in whatever accelerates it. A given body's reactive force of inertia is the active exercise of its causal power to induce this 'opposite' acceleration. This is the only real 'cost' borne by a locus of impressed force acting on a given inertially-massive body, beyond the exertion of impressed force itself, and therefore the only other real 'difficulty' in accelerating this body.

17.4. Newton himself makes a *superficially* similar point, arguing that the force of inertia is “both resistance and impetus,” simply “depending on the viewpoint”:

[The exercise of the force of inertia is] resistance insofar as the body, in order to maintain its state, strives against the impressed force, and impetus insofar as the same body, yielding only with difficulty [*difficulter cedendo*] to the force of a resisting obstacle, endeavors to change the state of that obstacle. Resistance is commonly attributed to resting bodies and impetus to moving bodies; but motion and rest, in the popular sense of the terms, are distinguished from each other only by point of view, and bodies commonly regarded as being at rest are not always truly at rest.⁷⁸¹

For instance, imagine that you find yourself suspended in free space, when all of a sudden a small cannonball hurtles towards you and strikes you in the chest, knocking you backwards as it

⁷⁸¹*Principia* Definition 3, elaboration.

bounces off—suppose moreover that the collision is perfectly elastic, for the sake of simplicity. Now consider the cannonball's inertial force during the collision. Newton's point is as follows: from the point of view of 'resistance', the inertial force of the cannonball is its 'striving' against deceleration by the impressed force of your body; but from the point of view of 'impetus', the *same* inertial force manifests as the way in which the cannonball 'yields only with difficulty' to your own force as a 'resisting obstacle'—i.e. the cannonball's inertial force now manifests as the source of the difficulty you yourself experience in inertially 'striving' to maintain your own state of rest as it collides with you.⁷⁸² Viewed as 'resistance', in other words, the cannonball's inertial force is *its* active power of self-preservation, i.e. maintaining its state of inertial motion in the face of impressed forces; whereas viewed as 'impetus', the cannonball's inertial force is that by which it actively resists ('yields only with difficulty to') *your* active power of self-preservation.

Another example will better illuminate Newton's specific point concerning the relativity of (apparent) motion and rest. Imagine dropping a weight from a bridge over a river straight down into a boat passing below, which hitherto had been traveling at a constant speed downstream. From the point of view of the weight itself, or that of onlookers standing on the bridge or the river bank, the weight appears to have no horizontal motion as it falls, and hence it appears to exert a lateral force of inertia in the mode of *resistance*: 'trying' to maintain its state of rest in the horizontal direction, the weight actively resists being accelerated downstream by the boat. But from the point of view of the boat, on the other hand, the weight appears to be moving in the upstream direction as it falls, and hence to exert a lateral force of inertia in the mode of *impetus*: the boat is 'trying' to maintain its state of uniform motion downstream, while the weight flies in with horizontal momentum and thereby 'pushes' the boat back in the upstream direction; thus the weight's inertial force manifests as the 'difficulty' with which the weight 'yields' to the boat's inertial force of resistance to being slowed down by it. The greater a projectile's mass, the

⁷⁸²A different interpretive option might seem more natural: qua *impetus*, the cannonball's force of inertia is the source of difficulty you face in 'striving', not to maintain your own state of rest, but rather simply to *slow the cannonball down*—i.e. the cannonball's inertial *impetus* manifests in the fact that it is *difficult for you to make it stop*; it *tends to keep going*.

But this interpretation raises the question: *why or in what sense* is it difficult to make the cannonball stop? Here two options are salient: (1) it's difficult to make the cannonball stop *because it exerts a force of inertial resistance to deceleration by impressed forces*; (2) it's difficult to make the cannonball stop *because when something slows it down, it speeds that thing up in the opposite direction*. And both options are unsatisfactory, for similar reasons. The problem with (1) is that it undermines the distinction between inertial *impetus* and *resistance*, given Newton's account of the latter—not just in the sense that this distinction would be merely perspectival, but in the more damaging sense that it would lack any discernible content. The problem with (2) is that it undermines the distinction between inertial *impetus* and *resistance*, given the account of inertial resistance that I (qua poetic theorist) developed in the previous sub-section.

'harder' it is to avoid being accelerated when hit by it—hence the greater a projectile's inertial *impetus*, the more strongly it opposes its target's inertial resistance to acceleration.

If this seems somewhat baroque, that is because it is. Newton's point about the relativity of motion and rest is perfectly correct, but his description of 'impetus' involves a basic prioritization of 'resistance' that I take to be characteristic of *scientific* (not *poetic*) understanding. The idea that, for instance, a cannonball's inertial force consists in its 'yielding only with difficulty to the force of a resisting obstacle' is putting the cart before the horse, *from the poetic point of view*. For this makes it sound as though the cannonball's inertial force is its own active resistance to its target's passive resistance to being accelerated by it. But this is an absurd way to characterize the situation, *from a poetic standpoint*, and an especially absurd way to describe the sense in which the cannonball 'endeavors to change the state' of obstacles in its path. The cannonball's 'endeavoring' to knock you backwards is not a matter of its resisting your resistance to being knocked backwards, or the difficulty with which it yields to your own force. Rather, the cannonball's 'trying' to knock you backwards is essentially a matter of its 'trying' to *impart its own motion* to you. Impetus is not active resistance to another thing's inertial resistance, or yielding only with difficulty to another thing's power of self-preservation. Impetus—*from a poetic standpoint that is non-scientific yet nevertheless just as accurate and explanatory as the scientific one*—is closer to real force in the mode of *kinematic self-propagation*.

A different example will further clarify the point at issue. Consider a hurricane making landfall on the Gulf Coast, rotating furiously counterclockwise as it creeps northward at a few miles per hour, fueled by the energy of the warm water to the south. Palm trees bend crazily as the high winds strip their fronds away. Rain whips down, at times nearly horizontally. Roofs are ripped off of houses. And all of these phenomena involve transfers of momentum from the hurricane winds to other objects, whether it be trees, droplets of rain, or shingles. In other words, the hurricane winds accelerate various other objects, and holistically speaking this accelerative action has the 'shape' of the hurricane's counterclockwise rotation. Thus as the hurricane approaches a given location from the south, its winds blow east to west, and so generally 'push' or 'pull' things on the ground westward. As the first eye wall passes to the north, the winds die and everything falls quiet. Soon enough, though, the winds rapidly pick up again as the southern eye wall approaches. Now the rising winds blow in the opposite direction, from west to east, and so 'push' or 'pull' things eastward. The hurricane winds, or the air molecules out of which they

are composed, undergo deceleration by the force of every such interaction. Holistically speaking, that is, the hurricane is continually decelerated—i.e. accelerated in the 'opposite' clockwise direction—by the reactive influence of all that it accelerates counterclockwise.

What is the inertial force exerted by the hurricane in these interactions, specifically in the mode of *impetus*? For the poetic theorist, it is something like the hurricane's successful exercise of its capacity to *impart its own motion to other things*. Thus the hurricane exerts inertial force in the mode of impetus in part insofar as it in fact accelerates objects on the ground in the (location-dependent) direction of its own counterclockwise cyclonic motion. More intuitively, but perhaps also more deeply: the hurricane's inertial impetus is a dynamical aspect of its power to *make other things hurricane-like*.

For the poetic theorist, the inertial impetus of the hurricane is not manifest in the 'difficulty' with which it 'yields' [*cedere*] to the force of the obstacles that resist it—say, the roofs it rips off, the trees it strips and uproots, or the trash cans it tosses around like toys. For this 'yielding only with difficulty' to resisting obstacles is itself evidently a form of *resistance* to these obstacles' force, i.e. a *reaction*, which as such presupposes a corresponding *action*. Namely, impetus understood à la Newton as 'yielding only with difficulty to obstacles that resist' is evidently a reaction to obstacles' inertial resistance. However, obstacles' inertial resistance is itself also evidently a reaction, which hence presupposes a corresponding action. In short, as Newton conceives of inertial impetus, it is essentially a *reaction to a reaction*. Thus construed, neither the hurricane nor any of the obstacles it confronts is truly active. But this is metaphysically and ethically otiose—*from a poetic standpoint*.

The Newtonian notion of *pure mutual reactivity* is roughly evocative of Nietzsche's idea of the 'will to power of the weakest'. Pure mutual reactivity is degenerate interaction, ethically speaking, for Nietzsche—and also from the standpoint of my own dynamistic ethos. More specifically, pure mutual reactivity is evidently the degenerate appearance of weakness masquerading as strength, by way of a perverse abstraction of the 'form' of genuine power from its 'content'. But pure mutual reactivity is also evidently the mere semblance of genuine interaction, and hence more deeply is literally *unreal*. Pure mutual reactivity is a *non-interaction*—a *non-event*, a mere *appearance of being* that is really *nothing*. To be clear: Nietzsche is not concerned to analyze inertia or physical interactions in this way. However, I take the above analysis to mirror the general form of his highly critical response to the ongoing historical

'triumph' of Judeo-Christian 'slave morality' (notwithstanding his additional diagnosis of Judeo-Christian morality as a formation of will to power, in its own right).

Put more abstractly, the basic problem with Newton's account of inertial impetus—*from a poetic standpoint*—is that in focusing on the 'difficulty' experienced by the obstacles that resist the given locus of impetus, he essentially characterizes an *active* inertial force merely in terms of '*reactivity*' to the objects it impacts. This problem is only compounded by the fact that Newton sees inertial resistance essentially as *passivity* or *self-preservation*. Hence, he characterizes *active* inertial impetus as a *reaction against self-preservative force*. From a poetic standpoint, however, force is not simply constituted by the disruptive (read: 'accelerative') effect it has on the objects it changes. More fundamentally, rather, the effect ('accelerative impact') that *appears* to mere objects ('obstacles') of active force ('impetus') simply as a disruption to the given state (of 'inertial motion') that they are 'trying' to maintain (via 'inertial resistance') is *in reality* an objective image or expression of this active force's *nature* (i.e. the 'state of motion of rest' which it imparts to the 'obstacles' it confronts).

As opposed to Newton's characterization, then, I propose *on behalf of the poetic theorist* that inertial 'impetus' is the action of accelerative force correlative to the reaction of inertial 'resistance'. Thus inertial *action* is not essentially the impressed force of the hurricane *insofar as it encounters the inertially-resisting* palm tree, for instance, but rather the hurricane's originary *accelerative impact* on the *inertially-reacting* palm tree. The hurricane's active inertial impetus is thus manifest in the 'ease' with which it impacts the obstacles it confronts, by determining their motion in accordance with its own 'state of motion or rest'. For these obstacles to be genuine obstacles, of course, they must be capable of exerting a *reactive* inertial force. But again this is just to say that these obstacles must have *reciprocal accelerative impact* on the locus of impressed force by which they are accelerated—e.g. the palm tree must decelerate the hurricane winds even as it is uprooted by them, albeit only slightly. Really, then, there is only *active and reactive inertial impetus*.

The greater the *active* impetus of the hurricane, the greater the extent to which it induces its own counterclockwise rotation in the land or sea beneath it. The greater the *reactive* impetus of the land or sea, the more it responds to being thus accelerated counterclockwise by inducing reciprocal clockwise acceleration in the hurricane (i.e. slowing it down). The greater the reactive impetus of the hurricane, in turn, the more it responds to being accelerated clockwise by

inducing counterclockwise acceleration. And the greater the active impetus of the land or sea, the greater the extent to which it induces its own state of motion or rest in the hurricane (e.g. the house or tree or coastal mountain exerts impetus insofar as it makes the hurricane *more unmoving-like-a-house-or-tree-or-mountain*).

More generally, the positive results of this sub-section may be summarized as follows: *According to the poetic theorist*, inertial mass is a power with both active and reactive aspects. Inertial force is the active expression of this power, i.e. inertial force is the real ground of inertial mass' accelerative impact. Insofar as inertial mass is a reactive power, its objective expression is reciprocal accelerative impact, i.e. inertial force in the mode of 'resistance' or 'opposite' acceleration. Insofar as inertial mass is an active power, on the other hand, its objective expression is kinematic self-propagation, i.e. inertial force in the mode of ordinary impetus—as in momentum transfer via mechanistic 'contact'.

To the extent that 'contact forces' all prove to be reducible to underlying non-contact forces, inertial impetus via mechanistic 'contact' is correspondingly reducible to the accelerative impact of non-contact forces. Here it should be noted that mass has a second active aspect besides its power to exert inertial impetus—i.e. gravitational mass, the power of every locus of mass to actively induce continual acceleration towards itself among all other loci of mass in the universe, and to 'passively' respond to external gravitational fields.⁷⁸³ Inertial mass is identical to 'passive' gravitational mass.

17.5. We may now return more productively to Newton's claim regarding (what he takes to be) the merely perspectival difference between inertial force in the modes of *resistance* and *impetus*. Again, his point is that we intuitively associate inertial resistance with bodies that are at rest and impetus with bodies in motion, but that motion and rest are commonly differentiated 'only by point of view.' As Galileo recognized, for instance, if a boat is moving smoothly at constant velocity, then everything (besides any rocking motion from waves, etc.) seems to people below deck just as if the boat were completely at rest. That is, the physical behavior of all of the objects below deck appears just as it would if the boat were at rest. Hence laws of motion are evidently indifferent to perspectival 'shifts' between a given frame of reference and another that moves in relation to it with constant velocity. (As Newton puts it, "*When bodies are enclosed in*

⁷⁸³This issue will be elaborated at greater length below.

a given space, their motions in relation to one another are the same whether the space is at rest or whether it is moving uniformly straight forward without circular motion.”⁷⁸⁴) This basic idea is more formally encoded in the 'Galilean invariance' of Newtonian mechanics. Newton's basic point about inertia, then, is that insofar as it tracks intuitive judgments of motion or rest, the distinction between inertial impetus and resistance merely 'depends on the viewpoint' and so has no real physical significance. (Of course, given his substantivalism regarding space and time, Newton could claim to differentiate *objective* inertial resistance and inertial impetus by appeal to the distinction between *absolute* motion and rest. He does not actually do so—my point is just that his own metaphysics contains adequate resources for drawing an objective distinction between inertial resistance and impetus, as he seems to conceive of them.)

But note that my own *poetic-not-scientific* account of the distinction between inertial impetus and 'resistance' is not vulnerable to Newton's deflationary point. For as I put it, active inertial impetus is *kinematic self-propagation*, i.e. a body's *imparting its own motion or rest to something else*—which is, more deeply, just one specific mode of external self-propagation or determinative influence; whereas reactive inertial impetus is *reciprocal accelerative impact*. Thus construed, the Newtonian distinction between 'impetus' and 'resistance' is in fact grounded in that between *action* and *reaction*, not motion and rest.

One might naturally wonder, then: is there a perspective-independent difference between actions and reactions? Or are they, too, distinguished 'only by point of view'?

A salient reason to think that there is *not* a perspective-independent difference between actions and reactions has to do with Newton's third law of motion: “*To any action there is always an opposite and equal reaction; in other words, the actions of two bodies upon each other are always equal and always opposite in direction.*” Thus, for instance, imagine striking a cue ball such that it knocks the eight-ball into a corner pocket. Intuitively speaking, of course, the cue ball seems like the 'active' body by comparison to the merely 'passive' eight-ball. But in what sense is the contact force exerted by the cue ball on the eight-ball *really* the action, and the *equal* contact force exerted by the eight-ball on the cue ball *really* just a reaction? Why not say instead that the eight-ball *acts* on the cue ball by slowing it down, and the cue ball *reacts* by accelerating the eight-ball? Or—more plausibly—why not say that the cue ball and eight-ball *equally act on and react to one another*? What could it add to our physical or metaphysical

⁷⁸⁴*Principia*, 'Axioms, or the Laws of Motion', Corollary 5.

understanding to insist that one ball is 'really' more active or reactive than the other?

Yet this deflationary line of argument mistakenly presupposes that any objective distinction between actions and reactions must correspond to a *quantitative asymmetry of physical 'force'*—in the sense of Newtonian 'impressed force', i.e. the 'F' in 'F=ma'. This is misguided in (at least) two respects, *from a poetic standpoint*. First, the objective poetic distinction between actions and reactions is in fact grounded partly in quantitative asymmetries of real force, not physical 'force'. Second, the objective poetic distinction between actions and reactions is grounded partly in qualitative asymmetries between active and reactive forces. In short: there is a poetically objective and metaphysically-significant difference between actions and reactions, hence between two modes of inertial impetus.

(i) The objective poetic (not scientific) distinction between actions and reactions is grounded partly in quantitative asymmetries of force. The Sun is clearly the 'dominant' term in its interaction with the Earth, in some perfectly real sense. In turn, this objective asymmetry is evidently grounded partly in the fact that the Sun has a far greater mass than the Earth. The Sun attracts the Earth far more rapidly toward itself than Earth attracts the Sun toward itself. That is, the Sun has far greater *gravitational impact* than the Earth, reflecting the Sun's far greater *gravitational mass*. The Sun is more active than Earth to the extent that it has greater gravitational mass; but Earth is still active vis-à-vis the Sun, and the Sun hence reactive to it, insofar as Earth has gravitational mass and so attracts the Sun. The Sun exerts a greater *real* active force of gravity on Earth than vice versa, even though the net physical 'force' of gravity between them is 'equal and opposite'. The Sun produces a stronger gravitational field than does the Earth. The ratio of the inertial masses of the Sun and Earth determines the ratio of these two effects. And the field strength of each body is a measure of a perfectly-real *active* force whereby it impacts the other. I elaborate and defend these admittedly obscure statements about 'real force' in the following section. For now, let us simply take them for granted. Each body is both gravitationally active and reactive, but the Sun is *more* active and Earth is *more* reactive.

Yet this does not in itself entail that the Sun exerts inertial force on Earth predominantly in the mode of *active impetus*. For the distinction between objective action and reaction does not *by itself* determine the distinction between objective inertial action and reaction. Inertial action maps onto a particular kind of action, namely accelerative impact whereby one thing imparts its own motion or rest to something else, as in transfer of momentum via mechanistic 'contact'. Note

that there is no objective difference between imparting speed and imparting rest, insofar as the difference between uniform motion and rest is purely perspectival. This is part of the real ontological significance of the Galilean relativity of motion. The *inertially* active term in a purely mechanistic 'collision' between two bodies is not the more rapidly moving one, but rather the *more inertially massive* and hence *less rapidly accelerating* one.⁷⁸⁵ Differential acceleration is objectively real, whereas differential speed is not.⁷⁸⁶

Understood as accelerative impact in the mode of a given thing's imparting its own state of motion or rest to something else, inertial impetus is distinct from accelerative impact via 'non-contact' forces like electromagnetism, which often induce states of motion that are *not* present in the loci or sources of the impressed force in question. For example, whereas a whirlpool induces its own rotational motion in flotsam that approaches it, the Sun could induce orbital motion in planets even if it, or its gravitational field, had no angular momentum to begin with. (Imagine that a new planet were to float into the solar system, initially traveling in a straight line with constant speed, but was then drawn into orbit around the Sun...) In fact, the orbital rotation of the planets evidently reflects not the *Sun's* rotational motion, but more so the rotational motion of the swirling cloud of gas and dust from which the Sun and planets both formed billions of years ago—or the interaction between the planets' instantaneous momenta and the *form* or 'shape' of the Sun's gravitational field, or the *form* of the curvature of spacetime around the Sun. Hence, if we can envision fields as having inertia, then the orbital trajectories of the planets around the Sun can be understood as (in part) the result of inertial action on the planets by the gravitational field due to the Sun's mass-energy.

The whirlpool is *active* vis-à-vis the comparatively *reactive* flotsam that it rotates around its focal point. And the Sun is *active* vis-à-vis the comparatively *reactive* Earth insofar as it has greater gravitational impact on Earth than vice versa. But of these two modes of asymmetrical accelerative impact, only the whirlpool's swirling the flotsam obviously amounts to an objective asymmetry in *inertial impetus*. That is, while the Sun's having greater gravitational impact on Earth than vice versa constitutes a way in which the Sun is objectively active vis-à-vis the

785i.e. in a mechanistic 'collision' between bodies, the more massive body is *more* active than the other *to the extent that its mass exceeds the other's*; but it is also still reactive *to the extent that the other body has mass*.

786Here my view is helpfully contrasted against Newton's. He says, in *De Gravitatione*: "That the absurdity of this position [Descartes's] may be disclosed in full measure, I say that thence it follows that a moving body has no determinate velocity and no definite line in which it moves. . . . On the contrary, there cannot be motion without a certain velocity and determination" (Hall and Hall 1962, 129; quoted in Earman 1989, 41).

reactive Earth, it does not straightforwardly constitute a way in which the Sun's inertial force is objectively exerted as impetus.

(ii) The objective poetic (not scientific) distinction between inertial actions and reactions is grounded partly in qualitative asymmetries of mutual force. If one focuses only on *quantitative* asymmetries of inertial force, then things with more mass will always be inertially active or 'dominant' with respect to less massive things. But this analytic framework does not yield entirely satisfactory results, for the poetic theorist. For example, imagine slapping your hand against a huge boulder, which remains totally unmoved. Shall we say that the boulder is the active term in this interaction, and your hand the merely reactive one? The boulder does 'successfully' stop your hand, after all, whereas you do not accelerate it (except at the level of microscopic excitations of some of its constitutive molecules). So in this sense the boulder does seem objectively *active* in relation to your hand, and to exert inertial force in the mode of *impetus*: the boulder actively imparts its own state of rest to your hitherto rapidly moving hand. Thus the boulder objectively renders your hand *boulder-like*, kinematically speaking.

Yet there is a different sense in which your hand is the genuinely active term in this interaction, and the boulder the merely reactive one. Namely, the boulder rapidly decelerates your hand by exerting a basically *hand-shaped* force on it: you exert a hand-shaped force on the boulder, and it 'pushes back' with an 'equal and opposite' force in the (mirror image of the) same shape. So while the *accelerative impact* of the interaction is determined by the boulder—which imparts its state of rest to your hand—nevertheless the *form* of the 'equal and opposite' forces is determined by your hand.

Take another example: imagine throwing eight small pebbles simultaneously at eight different points on a wall, roughly in the shape of a circle. Newton's point was that the apparent motion of the pebbles and the apparent rest of the wall are not legitimate grounds for judging that the pebbles *objectively* exert inertial force in the mode of impetus, or that the wall *objectively* exerts inertial force in the mode of resistance. My response, on behalf of the poetic theorist, is twofold. First, the objective asymmetry in quantitative accelerative impact between the pebbles and the wall constitutes a distinct and legitimate reason to judge that the wall objectively exerts inertial force in the mode of impetus. The wall really does induce greater acceleration in the pebbles than the pebbles induce in the wall, thereby imparting its own state of *wall-like rest* to the pebbles. Second, however, the pebbles *qualitatively* determine the *form* of the wall's inertial

force more so than vice versa. The pebbles 'push' on the wall in the shape of a circle, and it is genuinely *for this reason* that the wall 'pushes' on the pebbles in the shape of a circle. In this *qualitative* respect, then, the wall is objectively speaking not active, but reactive: the wall's impressed force on the pebbles is merely a reactive 'push *back*' against the pebbles insofar as the *form* of the pebbles' force on the wall determines the *form* of the wall's force on the pebbles, and not vice versa. Hence with respect to this *formal* dimension of the interaction, the pebbles objectively exert inertial force in the mode of *active* impetus, and the wall in the mode of *reactive* impetus. This distinction is salient poetically and metaphysically, even if not scientifically.

17.6. What about general relativity? In the relativistic context, inertial mass is identical to passive gravitational mass, or a given body's strength of 'coupling' to the gravitational field whose strength is given by the metric tensor indicated in Einstein's field equations. In the following section, I argue that 'passive' gravitational mass, like other kinds of 'passive charge', is in fact a *reactive* power. Hence, in particular, I claim that 'passive' gravitational mass is a thing's power to reactively exert accelerative (or momentum-changing) force upon itself whenever it undergoes 'impressed' gravitational force (i.e. whenever it is acted upon by an external gravitational field). In the case of passive mass, in particular, the resultant acceleration is *geodesic motion*. Hence, on my view, passive gravitational mass is a power to cause oneself to undergo 'free' geodesic motion when exposed to a gravitational field. And I claim that this power is identical to the reactive power of inertial mass, i.e. the power to exert a reactive force of impetus whenever one is exposed to an external 'impressed' force-field.

In this light, imagine a small but highly-charged ball, initially at rest in free space near to a huge free-floating wall. The wall is much more massive than the ball, and has an electric charge of the same 'sign' as that of the ball, but much smaller magnitude. What happens? The ball is repelled rapidly away from the wall, which moves infinitesimally in the opposite direction. The more highly-charged the ball, the more rapidly it will be repelled from the wall. The physical 'force' of electrostatic repulsion between the wall and the ball before they have begun to move away from one another, given (approximately) by Coulomb's law, is directly proportional to the charge of both. The standard scientific interpretation of this is that the ball and the wall repel one another with equally strong opposing 'pushes'. The wall is accelerated less

than the ball by the equally-strong 'push' on both, on this view, because the more-massive wall has a greater force of inertial resistance to being accelerated.

An alternative poetic interpretation of this situation is as follows: The electromagnetic field of the ball is stronger than that of the wall (because the ball is more highly charged). A stronger field exerts a stronger active force. Each charged body responds to the field of the other by exerting reactive force upon itself, qua locus of inertial mass, which is proportional to both the strength of the impressed field and its own electric charge. The net results are the two 'equal and opposite' forces of standard physical scientific description. Qua locus of inertial mass, in turn, each body is coupled to the gravitational field. So when either body is accelerated—i.e. pushes *itself* (qua inertial mass) out of the geodesic 'grooves' of the gravitational field, insofar as it is electromagnetically reactive—it also pushes itself (qua locus of impressed electromagnetic force) in the opposite direction, insofar as it is a gravitationally reactive inertial mass. This 'pushing itself back' towards prior geodesic paths is the inertial 'resistance' or *reactive* impetus of the accelerated charge. And *active* impetus is the active 'push' that a mass exerts on other things as a bearer of gravitational field-structure, viz., its own geodesic trajectory through spacetime.

18. Physical Force as (Quasi-)Empirical Object (II): Passivity, Reactivity, and Real Physical Interaction

18.1. Modern physics often represents interactions in terms of 'equal and opposite' forces, or at least balanced exchanges of momentum and energy. In a basic process described by atomic physics, for instance, a hydrogen atom may 'absorb' a photon; this causes the electron in the atom to 'jump' to an excited state; the electron may then 'fall' back down to its original lower energy state; and this causes the atom to emit a photon with energy and frequency corresponding to the one that impinged upon it.

Conservation principles are arguably no longer as sacrosanct as they once were, however, for instance insofar as it is debatable whether energy is truly conserved in general relativity. (One would have to count the energy of the gravitational field along with that of matter and radiation, etc., using a 'stress-energy-momentum pseudotensor', but this has strange features that make some theorists doubt whether it truly sustains energy conservation.) Moreover, it is now widely

claimed that basic conservation principles like those of energy or momentum are 'less fundamental' than certain other symmetries in the behavior of physical systems, e.g. under conditions of time-reversal, rotation, or linear translation. This is primarily because Emmy Noether proved in the early 20th century that every differentiable symmetry in the *action* of a physical system gives rise to a corresponding conserved quantity—like energy or momentum. (The action of a physical system is a certain measure of its state as it evolves along a given temporal path, which when minimized yields its actual equations of motion.) Hence, many theorists take these symmetries in action to be more fundamental than conservation laws.

Nevertheless, both conservation of momentum and Newton's third law of motion ('when one body exerts a force on a second body, the second exerts an equal and opposite force on the first') have a wide range of valid application, in both practical and theoretical contexts. It is therefore of substantial interest to consider how the modern scientific *dynamist* should understand them. Centrally, e.g., how is putatively widespread 'natural hierarchy' consistent with pandemic equal and opposite forces? To this end, and following the basic method of the previous section, I will now develop a poetic account of *physical interaction*. The upshot is that physical 'force' is not real force, exactly. From a poetic standpoint, physical interaction is always the interaction between an *active* source (e.g. a source-field or source-charge) and a *reactive* test-object (e.g. a 'test-charge' or 'test-field'). The 'equal and opposite' forces invoked by physics are merely 'net' forces, which obscure these further interactions. Scientific representations of 'equal and opposite forces' exerted on loci of 'passive charge' are merely the *objective appearances* of real hierarchical interactions among underlying active and reactive forces.

In the previous section, I argued that inertial 'resistance' can be poetically reinterpreted as (roughly) 'pushing' or 'pulling' back when 'pushed' or 'pulled' by something. This is by contrast to the standard scientific interpretation of inertial resistance as 'trying' to remain unchanged (i.e. preserve a given state of geodesic motion) when 'pushed' or 'pulled' by something. Hence, for poetic theorists inertial 'resistance' is not a measure of the energy it 'costs' you to accelerate or impart momentum to something. Quite the opposite: inertial 'resistance' is a measure of a given object's power to reactively impose its state of motion or momentum on you, whenever you accelerate or impart momentum to it.

In the present section, I will extend this analysis by relating inertial mass to a broader phenomenon that applies to forces beyond gravity: *passive charge*, or the power to 'couple' to

external fields (the greater a thing's passive charge, the more physical force it experiences in a given field of the corresponding kind). Inertial mass is identical to passive gravitational mass. That is, inertial 'resistance' to acceleration is identical to 'receptivity' to the gravitational field, or the capacity to couple to the metric field defined on the spacetime manifold, and hence to realize 'free' geodesic motion. This follows immediately from Einstein's general theory of relativity.⁷⁸⁷ Notably, there is no 'inertial electric charge' in the way that there is inertial mass, because gravitational force is uniquely related to spatiotemporal structure. But there is passive electric charge, just as there is passive gravitational mass. Hence, a poetic-not-scientific reinterpretation of passive charge will have a wider range of application than does a poetic-not-scientific reinterpretation of inertial mass, in particular. This account will suggest a poetic perspective on Newton's third law, and hence also on momentum conservation, insofar as balanced forces (qua rates of momentum-change) yield equal exchanges of momentum.

'Passive' charge can be poetically reinterpreted as a power of *responsivity*, or the capacity to exert *reactive* force when stimulated by an ordinary *active* force. Larger 'passive' charges thus produce greater *input-output gain*, 'boosting' ordinary active forces into larger reactive forces. Hence, for instance, the passive electric charge of a given 'test-charge' can be poetically viewed as a power to exert reactive electromagnetic force on itself qua locus of inertial mass, not to 'passively' experience greater 'impressed' force in a given external electromagnetic field. Note that it does not matter, in this context, whether this 'impressed' force is said to be exerted by an external 'source' charge or a 'sourceless' external electromagnetic field or a photon or a 'virtual photon' or whatever else.

This poetic reinterpretation arguably helps to explain the *equality of passive and active charge*, or the curious fact that things' ability to produce force-fields is apparently equal in strength to their capacity to be affected by external force-fields. In other words, charges (electric charge, gravitational mass, etc.) seem to have exactly the same degree of power to *impact* and *be impacted* by other charges (or fields, etc.). Poetically viewed, this is plausibly because the passive 'power' to be impacted is just a power to reactively *impact*—i.e. the same power as 'active charge', simply manifesting as *reaction* rather than ordinary *action*. (Admittedly, this still does not explain why a charge has the same strength qua *active* as qua *reactive*.) For poetic theorists,

787A given body's inertial mass is also an objective scientific representation of *all other masses' impressed force upon it*: inertial 'resistance' to accelerative deviation from geodesics is just a 'normalization' of being gravitationally impacted. This is another way to see that inertial mass is identical to the 'passive' power of coupling to external gravitational fields.

then, inertial mass is just passive gravitational mass; passive gravitational mass is just a *scientifically objective representation* of reactive gravitational mass (i.e. a representation of reactive *forces* as mere passively-impacted *objects*); and reactive gravitational mass is essentially the same power as active gravitational mass: the power to exert gravitational force. Likewise, passive electric charge is just a scientific representation of reactive electric charge, and reactive electric charge is essentially the same power as active electric charge.

Reactions have a twofold character. On the one hand, *reactions* are the *impact* of forces, viz., the impact or effect of corresponding actions. On the other hand, however, *reactions* are also forces in their own right—e.g. reactive forces exerted back upon the loci of ordinary active forces. As pure impact, reactions are *unreal* or *merely abstract* entities. As forces in their own right, reactions are *real*. As both the impact of ordinary actions and forces in their own right, reactions are actions' *real impact*. Hence, a given physical interaction between two objects (bodies, fields, etc.) can be poetically characterized in terms of two active forces, exerted differentially by each interacting object on the other, as well as two reactions, which differentially 'boost' these original active forces into two 'net' equal and opposite forces that impact both objects qua loci of momentum. Poetically viewed, then, physical interactions are constituted by opposing pairs of active forces and responsive reaction-forces. The 'equal and opposite' forces invoked by modern physics are merely 'net' forces. And the ordinary active 'input' forces with respect to which these equal and opposite forces are responsive 'outputs' need not be equally strong—nor need be the real 'boosts' whereby each object reacts to the other's force.

The point of this exercise is not to arrive at a 'correct' view of physical interaction, exactly. Rather, it is to present a dynamic-poetic interpretation of interaction that is as empirically adequate as the passive-scientific standard, so as to illuminate the nature and limitations of objective scientific representation. Poetic characterizations of physical interaction are *true*, and yet *not scientifically valid*. Scientific representations of physical interaction, as *reciprocal actions on merely passive objects*, are not direct presentations of active forces. Scientific representations of interactions, in terms of 'equal and opposite forces' exerted on loci of 'passive charge', are the unreal but objectively valid appearances of real interacting active forces—real interactions that can be directly presented only via poetic modes of description.

18.2. According to a standard definition in introductory physics textbooks, force is the cause of acceleration.⁷⁸⁸ In classical mechanics, for instance, the continual acceleration of Earth towards the Sun, and vice versa, is caused by an impressed attractive force of gravity that is directly proportional to both bodies' masses. Here an applied force induces acceleration in massive bodies. More generally, however, things need not be massive in order to exert or experience physical force. For instance, a beam of massless photons exerts pressure (i.e. force-per-unit-area) on a piece of paper, and experiences an 'equal and opposite' force of reaction.⁷⁸⁹ Photons are evidently capable of exerting and experiencing force insofar as they have, not mass, but momentum. Thus physical force is to be understood more deeply as the cause, not of acceleration in massive bodies, but change of momentum. (For a massive body, the temporal rate of change of its momentum (mv) is the product of its mass (m) and the temporal rate of change of its velocity (dv/dt), i.e. its acceleration (a). Hence Newton's second law, $F = ma$.)

On a naive interpretation of this scheme, a physical force is a 'push' or 'pull' whereby a given thing is sped up or slowed down—or at least whereby it would be sped up or slowed down, if there were no opposing 'pushes' or 'pulls'. Hence, on this view, the greater the magnitude of the physical force, the stronger the push or pull that induces acceleration or momentum-change. This account has the virtue of being (or seeming) intuitive: we all know what it is like to push something and to see that it moves little or not at all, but then to push harder and see that it now moves, or speeds up, or slows down. On this account, then, the classical gravitational interaction between the Sun and Earth involves two opposing pulls. The Sun pulls Earth toward itself, and Earth pulls the Sun toward itself.⁷⁹⁰ Moreover, these pulls have the same strength: the gravitational force exerted by the Earth on the Sun, as given by Newton's law of universal gravitation, is *equal and opposite* to the Sun's force on the Earth.

How could this be, though, given that the Sun is so much more massive than the Earth, and hence presumably so much more gravitationally 'forceful' than it? What does the Sun's greater power of gravity consist in, if not its pulling harder on less massive bodies than they pull on it? Or consider a non-gravitational example from the previous section: a small but highly-charged ball, initially at rest in free space near to a huge free-floating wall. The wall is much

⁷⁸⁸Coelho (2010) surveys about a hundred 20th- and 21st-century physics textbooks, and reports that the definition of force most commonly offered therein is (in his words) 'the cause of acceleration' (Coelho 2010, 103).

⁷⁸⁹See also Sebens 2018 for an argument to the effect that forces from electromagnetic fields on matter are balanced by equal and opposite forces from matter on electromagnetic fields.

⁷⁹⁰Note that this is not actually how Newton himself interpreted his gravitational theory.

more massive than the ball, and has an electric charge of the same 'sign' as that of the ball, but much smaller magnitude. Again, the ball is repelled rapidly away from the wall, which moves infinitesimally in the opposite direction. How could this be, though, given that the ball is so much more electrically charged than the wall, and hence presumably so much more electromagnetically *potent* than it? What does the ball's greater power of electricity consist in, if not its pushing harder on less-charged bodies than they push on it?

Here the scientific theorist may respond with two interrelated claims. First, although the *forces* between the ball and the wall are equal and opposite, the electrostatic *field* produced by the more-charged ball is stronger than the electrostatic field produced by the less-charged wall. Second, the ball and the wall contribute differentially to the equal and opposite forces of repulsion between them. The physical force of electrostatic repulsion between the wall and the ball, given (approximately) by Coulomb's law, is directly proportional to the charge of both. Hence, the more-charged ball adds more to this repulsive force than does the less-charged wall. These two claims are interrelated as follows: the force experienced by the wall is determined by taking the strength of the ball's electric field at the location of the wall, and multiplying this field-strength by the wall's *passive charge*; this is because an electric field is just a measure of *force-exerted-per-unit-of-passive-electric-charge*.

This standard scientific narrative is strange in several ways. First, it is unclear what it means for passive charge to 'contribute' to a force. Does passive charge 'contribute' to force like a tributary contributes to a larger river? Or is its 'contribution' more abstract—perhaps even merely *conceptual*? Is the way that passive charge 'contributes' to force different from the way that active charge 'contributes' to field strength? What about the way that the gravitational constant, G , 'contributes' to the gravitational field (according to both the classical field theory of gravity and Einstein's general theory of relativity)? Second, how exactly do a passive charge and a field 'combine' to make a force? Third, is a physical force *distinct* from the 'combination' of a field and a passive charge, or *identical* to this 'combination'? In other words, is a physical force the *effect* of a passive charge's interaction with an external field? Or is a physical force *identical* to a passive charge's interaction with an external field? Is a passive charge's interaction with an external field 'equal and opposite'? Or can it be hierarchical?

Note that directly analogous questions can be posed even in the context of quantum field theory. Consider a modern physicist who insists that “fields are all there is,” such that even

electrons and atoms are really just “quanta of matter fields.”⁷⁹¹ Fine. So, then, are fundamental physical interactions the *effect* of fields interacting with one another (by 'exchanging force-carrier particles', etc.)? Or are fundamental physical interactions *identical* to these interactions among fields? The latter, evidently. But then are the interactions among fields 'equal and opposite', always or at least generally speaking? Or can energy- and momentum-conserving 'exchanges' of force-carrying field-quanta be hierarchical?

18.3. From a poetic standpoint, physical interaction is always that between an *active* source (e.g. a source-field or source-charge) and a *reactive* test-object (e.g. a 'test-charge' or 'test-field'). This interaction is inherently hierarchical: whereas the test-object's reaction is the *impact* of the source's active force, the source's action is not the impact of the test-object's reactive force. Rather, the impact of the test-object's reactive force is *its own momentum-change*. The active source causes the reactive test-object to accelerate itself, or more generally to impart momentum to itself. The 'equal and opposite' force highlighted by classical physics is just the reactive force whereby the test-object accelerates itself. This is one way to characterize a given physical reaction: as accelerative force. But the same reaction can also be characterized as an input-output gain or 'signal boost' to an original active force. Each test-object's responsivity or reactive 'signal boost' is the causal process that produces an 'equal and opposite' accelerative force. The ordinary action by the source-field (or source-charge, etc.) is not the *immediate* cause of the test-object's momentum-change. It is the *immediate* cause of the test-object's reactive force, and hence the *mediate* cause of the test-object's momentum-change.

The distinction between active sources and reactive test-objects is not absolute, but *aspectual*. Hence, in a given physical interaction between two things, each can function both as active source and as reactive test-object vis-à-vis the other. But this is so only if each truly causally produces a reactive force in the other: the relation between sources and test-objects in real interactions is genuinely *causal*.

Although the causal relations between active sources and reactive test-objects in physical interactions are real, *they are not part of the representational contents of objective scientific theory*. Rather, objective empirical science directly presents only observable phenomena and the unobservable dynamic structures into which the phenomena are 'lawfully' ordered. The forms of

⁷⁹¹Hobson 2013.

empirical causes, like 'equal and opposite impressed forces' in classical physics, or 'exchange forces' mediated by 'carrier particles' in modern quantum field theory, are part of this unobservable dynamic structure.

Objection: Why couldn't this be all that there is? Why couldn't 'empirical causes' produce law-governed order in the phenomena? What explanatory role is left for 'causal relations between active sources and reactive test-objects' that somehow falls beyond the scope of ordinary empirical causes?

Reply: We have to take into account the dynamically-relevant properties of causally-impacted objects in *some* way—whether these objects are electrons engaged in a quantum field theoretic photon-exchange or Newtonian 'point masses'. So it is then a matter of deciding how exactly to do so. (One note: a conspicuous case in which the properties of test-objects do *not* matter, in an important sense, is that of gravity. This is because gravity is a 'universal force': it has the same impact on all 'material' things, regardless of their different masses, charges, etc. More broadly, any universal force can be 'geometrized away' by incorporating its field variables directly into the affine structure of spacetime—as has been done for gravity in Einstein's theory of general relativity, as well as in the subsequent geometric reformulation of Newtonian gravitational theory developed by Élie Cartan in the 1920s. I will return to this point in the next section, in elaborating the connection between forces and spatial forms.)

How exactly should we treat dynamically-relevant properties of test-objects, then? As genuine active powers to *have real impact*? Or as passive 'powers' to *be impacted*? Or as inertial 'powers' to *resist being impacted*? Or as genuine reactive powers to *have real impact when impacted*?

Empirical causes like 'equal and opposite impressed forces' in classical physics, or 'exchange forces' mediated by 'carrier particles' in modern quantum field theory, are causes *insofar as they impact merely 'passive' or 'resistant' objects*. But merely 'passive' or 'resistant' objects are *unreal*. Reality is force. To be real is to exercise power, to be a locus of force. A thing that is only determined by higher forces, as a mere object for their outlet, is unreal—nothing but an appearance, nothing but an image of underlying reality. Reality is not subjective effort, but objectively impactful force. And reality is force with impact, not on mere objects, but on other forceful things. Impact considered abstractly, apart from its own force, is only the effect of force. Abstract impact is pure appearance. Empirical causes are thus pseudo-causes, albeit pseudo-

causes whereby we objectively represent real causes.

'Transcendent' physical causes—i.e. *elemental physical forces*—are these real causes, insofar as they impact *real, reactively-forceful things*. Hence, empirical causes cannot be 'all there is', because their reality presupposes the reality of the things they impact, whereas qua empirical they impact only passive or inertially-resistant *objects*. Objective scientific representation directly presents us only with *abstract* causal interactions, between empirical causes and mere objects. The only way to directly apprehend *real* causal relations, between forces, is to posit 'transcendent' causal powers that act on *reactive* things. The 'equal and opposite' forces or 'exchange forces' highlighted by physical theory are the products of real causal chains whereby active forces ('fields', 'source-charges', etc.) causally produce reactive forces (in 'test-charges', other fields, etc.) that impart momentum to test-objects.

Objection: If the reality of causal relations presupposes the 'force' of causally-impacted things, then how does this not create an infinite-regress problem? For instance, what is the 'force' of the acceleration that 'reactive forces' produce in 'test-objects'?

Reply: Accelerating masses or electric charges produce *radiative forces*. More broadly, this is not a real 'regress problem'. Rather, it is a fruitful heuristic for developing dynamic-poetic physical descriptions: anything that appears not to be a force is either in fact a locus of force, or else is unreal—albeit perhaps still the *abstract impact* or *pure objective appearance* of reality.

19. Real Structure, Objective Field, and Universal Spatial Form

19.1. Science threatens to reduce reality to a system of *pictures*. Heidegger makes a similar point regarding Plato's emphasis on 'Form' [*eidōs*], in a 1938 lecture on 'The Age of the World Picture' [*Die Zeit des Weltbildes*]: “that the beingness of whatever is [*die Seiendheit des Seienden*], is defined for Plato as *eidōs* (aspect, view [*Aussehen, Anblick*]) is the presupposition, destined far in advance and long ruling indirectly in concealment, for the world's having to become picture [*Bild*].”⁷⁹² For Heidegger, this 'world-picturing' attitude is to be criticized. And I agree, provided that one systematically distinguishes mere *pictures* from both *real images* and *objective images*. Here I speak only for myself, not for Heidegger. A picture is a subjective image: an abstract form produced by viewing real impact apart from both its own force (as real) and the force that produces it (as impact). Objective science yields objective images of reality.

⁷⁹²Heidegger 1977a, 91 / 1977b, 130.

Universals—rational forms—are just pictures, or merely subjective images. Idealism attempts to conceptualize things as determinate objects by appeal to universals, e.g. to conceptualize the Sun's brilliance as just one among many particular instances of the universal Light, which also appears in lamps and candle flames. But this is mere *picturing* or *depiction*, insofar as the Sun's paradigmatic brilliance is the real ground of the universal Light. Depiction thus forecloses a certain kind of mythic or poetic understanding, wherein the lamp or candle instead owes its light directly or essentially to the Sun—wherein the candle's light *is* the Sun's light, microcosmically, hence wherein the Sun (not the Platonic Form of Light) is exalted as the higher reality underlying lesser modes of light. In this sort of mythic or poetic consciousness, the concept [*light*] functions as an image of the Sun's force. In idealistic depiction, the concept [*light*] functions as an image of our own power of abstraction.

Science evidently cannot treat the concept [*light*] as an image of the Sun's force, in particular, however impressive it might be. Science evidently must relate the Sun and the candle alike to a broader scale of *light* or *radiance*. But this scale need not be a universal form or subjective image of our own reason. In *natural* science, rather, general concepts like [*light*] are images of light's holistic impact on other things, considered merely as (illuminated) objects.

What is an 'image', exactly, and what makes an image 'subjective' or 'objective'? An image is an *appearance in the mode of extension*. To elaborate any further, then, we must turn to *extension* and *appearance*—which again are both commonly denoted by a single term: *form*.

19.2. In Plato's Greek, the word 'form' [*eidos*] denotes (among other things) that which is seen: appearance, especially in the sense of outward or sensible appearance, and even shapeliness or beauty. Hence, presumably, the traditional association between form and *aesthetics*, understood as *episteme aisthetike* or the science of *aesthesis* (meaning perception, and especially sensory perception).⁷⁹³ This unity of form and appearance also holds for the Greek

⁷⁹³“The Greek philosophers and the Church fathers have already carefully distinguished between *things perceived* [*aistheta*] and *things known* [*noeta*]. It is entirely evident that they did not equate *things known* with things of sense, since they honored with this name things also removed from sense (therefore, images). Therefore, *things known* are to be known by the superior faculty as the object of logic; *things perceived* [are to be known by the inferior faculty, as the object] of the science of perception, or aesthetic” (Baumgarten 1954, 78); “The term 'aesthetics' is formed in the same manner as 'logic' and 'ethics.' The word *episteme*, knowledge, must always complete these terms. Logic: *logike episteme*: knowledge of *logos*, that is, the doctrine of assertion or judgment as the basic form of thought. Logic is knowledge of thinking, of the forms and rules of thought. Ethics: *ethike episteme*: knowledge of *ethos*, of the inner character of man and of the way it determines his behavior. Logic and ethics both refer to human behavior and its lawfulness. The word 'aesthetics' is formed in the corresponding way: *aisthetike episteme*: knowledge of human behavior with regard to sense, sensation, and feeling, and knowledge

morphe, the Latin *forma*, and our own *form*.⁷⁹⁴ In this sense of 'form', then, things *show up* for us precisely by virtue of their form: their outward appearance. Form is thus *that-which-appears*.

But 'form' also denotes *extension*, including both *shape* and *space*. Shape, in turn, is *structure*: holistic order, or the way that distinct elements are interrelated as parts of a whole.⁷⁹⁵ Shape can be internal structure (*organization* or *composition*) or external structure (*surface*, *boundary*, or *outline*). As the two basic modes of dynamic interaction, agon and hierarchy are fundamental modes of structural form. Form is not just shape or structure, however. Again, form is also space. One familiar spatial form is, of course, space. A second is time. A third is spacetime. Material things can be parts of structures. And they can have surfaces or internal composition. But material things are not parts of spacetime. Rather, matter is located in spacetime, or *structurally* determined by it. More broadly, objects are determined *inside of* or *within* spaces. Note that spatial form, in this broad sense, evidently encompasses phenomena like *scale* or *dimension*. Structure and space are the two basic modes of form as *extension*.

Any structure or space that is itself a locus of force is thus real extension, or a real form. Real form has impact. Inert form, forceless form, is unreal. There are real *structures*; but all *spaces* are unreal. Not all unreal forms are merely subjective, however, for some inert forms are *pure objective appearances*. And, indeed, *objectively valid spatial forms* are just pure objective appearances, or mere images of universal forces' real impact. That is: universal force has impact; this impact has real structural form, or *dynamic structure*; and this real dynamic structure in turn merely appears as objective spatial form, in which things impacted by the given universal force are represented as spatially-located objects. Objective spaces are just abstract representations of universal forces' real dynamic structures.

Form is thus extension, encompassing both structure and space, as well as appearance. But how can form denote both extension and appearance? Is this just a linguistic accident? It is not. Extension and appearance are interrelated. And the ground of their interrelation is force.

of how these are determined" (Heidegger 1991a, 77-78); "[The term 'aesthetics'] comes from the Greek [aisthánomai], meaning 'perceive', and thus encompasses the entire realm of sensory experience; and Kant[...]and a number of German Enlightenment writers, applied it generally to all forms of scientific conditions of sensuality" (Adorno 2018, 18). See also Guyer 2016.

⁷⁹⁴'Beauty' is given as an archaic definition of 'form' in the Collins English Dictionary and in the Merriam-Webster Dictionary. For the Latin and Greek, see Lewis and Short 1879; Liddell and Scott 1889, 1940; Cunliffe 1924.

⁷⁹⁵Susanne Langer calls this 'logical form', or "form in its most abstract sense": "structure, articulation, a whole resulting from the relation of mutually dependent factors, or more precisely, the way that whole is put together" (Langer 1957, 16). I am hesitant to call it 'form', per se, because it seems to describe only *shape*, and not *space*.

19.3. Appearance is pure impact. Pure impact is the effect of force on its objects, considered only as effect. Pure impact is thus unreal. Only force is real; not its effects, merely as effects. 'Pure impact' designates that which is determined by force, considered apart from its own force. 'Pure appearance' designates that which is determined by reality, considered apart from its own reality. These are alternative descriptions of the same thing. Pure impact just is appearance. The identity of appearance and pure impact corresponds directly to the identity of reality and force. Form-as-appearance is form construed as the pure impact of force.

Impact can be *extensive* or *non-extensive*. That is, the impact of a given force can be a spatial or structural form, or not be either. For example, imagine hitting a concrete wall with your hand. The force your hand exerts on the wall has structure: the shape of your hand. The wall in turn pushes back against your hand—if it did not, after all, your hand would simply pass through it. But in fact your hand is halted by the wall. And this is because the wall pushes back against your hand when your hand pushes on it. The wall's push-back in turn has structure: it is a push-back on your hand, in (approximately) the shape of your hand. The wall doesn't push back in places where your hand is not—there is nothing there to push back against, after all. Moreover, the wall's push-back *is* (at least part of) the impact of your push. And it has shape or structure. Hence, the wall's push-back is the *extensive impact* of your push. But the wall's push-back is also a *force*. Hence, the wall's push-back is *real* extensive impact, not abstract or *pure* impact. For an example of abstract extensive impact, imagine shaping a piece of clay into a cube. The clay's cubic shape is the impact of your shaping force. But if it is considered apart from its own force (say, insofar as the cube presses down against the table in a square shape, or against impinging air molecules in a distinctively cube-like way ...), then this cubic shape is not *real*, but *pure appearance*: the pure appearance or pure extensive impact of your sculpting force.

An *image* is just the extensive impact of a force. Images can be real (like the wall's hand-shaped push-back) or purely abstract (like the clay cube's shape, considered apart from its own force). Images are reality's appearance in the mode of extension: the extensive impact of forces. A *real* image is *real* extensive impact. An *objective* image is *semi-abstract* extensive impact: extensive impact considered in relation to the force that produces it, but apart from its own force.

How could a force possibly have a *space* or *spatial form* as its impact? I will return to this issue shortly. At present, it will be more helpful to consider *non-extensive* modes of impact.

Non-extensive impact is *quality*. For example, whereas *melody* and *rhythm* are modes of

structure whereby sonic force has *extensive* impact on us, *tone* is a non-extensive sonic *quality*. Likewise, pure *color* is a non-extensive visual *quality*, whereas the spatiotemporal configuration of colors is a visual *structure*. Hence, a large steel cube—e.g. the minimalist sculptor Tony Smith's *Die* (1968)—has *qualitative* chromatic impact on us insofar as it is reddish-black (say), and *extensive* chromatic impact insofar as this quality is 'formed' into a cubic shape or structure. Qualitative impact can be real, or purely abstract. For instance, the rustling of the leaves is the impact of the wind's force. But the rustling of the leaves also has sonic force in its own right. This sonic force has structure, but it also has non-extensive quality. Hence, it is *real* quality.

What is qualitative impact among inanimate physical objects, then—where appeal to sensory qualities like color or tone is evidently inappropriate, or at best only metaphorically apt? Here is one example: increasing atmospheric CO₂ concentrations *acidify* the ocean. Here is another: the Sun *heats* the rock. Here are two more: the baseball *shatters* the window; the proton *attracts* the electron. There is nothing anthropomorphic or metaphorical about these examples, clearly. But they can nevertheless be understood to involve non-extensive modes of impact. Every dynamic interaction can be characterized in terms of extensive or qualitative impact.

Qualitative modes of impact can in turn be *spatialized*. For example, heat can be represented as a scale or dimension, of temperature, within which a given act of heating can be located or formally determined. For instance: 'The Sun causes the rock to warm by 4° Celsius.' Or, without any exact scale: 'Sunlight causes the rock to warm more than does candlelight.' In this way, a given force's qualitative impact can be represented as a particular *point* or *shape* within a *qualitative space*. Hence, to return to a previous example, the large steel cube's reddish-black finish might be spatially determined or located within a broader color-space. Thus any given qualitative mode of impact can be formally represented as a structural mode of extensive impact, within a corresponding quality-space. The location of a given mode of qualitative impact within a corresponding quality-space might be determinate or indeterminate, as the case may be. For instance, if I simply hear *some kind* of tone, or see *some kind* of color, then this qualitative impact can be represented as an indeterminate structure within a corresponding quality-space. Spatialization transforms qualitative modes of impact into *universal forms*.

What is the status of such 'qualitative spaces'? Are they real? Or just imaginary? On my view, qualitative spaces are universal forms or spaces, just like any other. As spaces, they are never real. They have no genuine impact. But they can be objectively valid, nevertheless. And an

objectively valid qualitative space is a *purely intelligible* formal representation of a qualitative force, within which corresponding modes of qualitative impact are located. By something 'purely intelligible', I mean something insofar as it lacks both sensory qualities (e.g. color, hotness, or smell) and spatiotemporal properties (e.g. temporal duration, or spatial form). Note that for something to be purely intelligible does not mean that it is mind-dependent, on my view. Objective qualitative spaces are mind-independent spatial forms. In loosely Kantian terms, purely intelligible things are just things insofar as they are possible objects of *purely conceptual* understanding, as opposed to things as they are given to us via *sensible intuition*.

Every objective qualitative space can be *intellectually represented* as an objectively valid *concept*. Again, to be clear: qualitative spaces themselves are not concepts. Objective qualitative spaces are mind-independent spatial forms. Concepts are mind-dependent mental representations. But qualitative spaces are purely intelligible. And objectively valid concepts, or *natural* concepts, are just mental representations of objective qualitative spaces.

One cognitively constructs an *object* by conceptually determining a thing with respect to an objective qualitative space. Hence, for instance, one constitutes the sculptural work as a mere *object*, rather than a *work*, by conceptualizing its color as a generic 'location' in a broader 'space'. This is to constitute something as a *particular* vis-à-vis a *universal*. But an objective qualitative space is a universal form that encodes the impact of a corresponding mode of qualitative force. Its objective validity is not grounded in the relationship of particulars to one another, but rather in the relationship of the total field of particulars it subsumes to a corresponding universal force. For instance, the objective validity of universal color-space is grounded in the real force of *color*.

An objective qualitative space is a purely intelligible spatial image of a qualitative force. Corresponding modes of qualitative impact are the determinative features of objects located within this space. Natural concepts are mental representations of objective qualitative spaces.

19.4. Clearly, deeper examination of *spatial form* is required, if any of the above analysis is to be sustained. To this end, it should first be noted that the metaphysical status of space, time, and spacetime is famously contested.⁷⁹⁶ One major axis of this debate concerns ongoing tension between substantivalism and relationalism. Another axis concerns tension between realism and anti-realism. *Realists* about space (time, spacetime, etc.) claim that objective reality has

⁷⁹⁶For the description of the broader theoretical landscape, in this paragraph, I am closely following Belot 2011.

determinate spatial (temporal, spatiotemporal) structure.⁷⁹⁷ *Anti-realists* deny this. Substantivalism and relationalism are in turn best construed as two competing varieties of realism. *Substantivalists* claim that space consists of parts, and that geometric relations between material things located in space are determined by relations among the parts of space that they occupy. As a slogan: '*Material geometry is derivative upon spatial geometry.*' (The material geometry at a world is "the pattern of geometric relations instantiated by the parts of matter at [the given] world at a time."⁷⁹⁸) *Relationalists* deny this. Hence, some relationalists might deny my earlier claim that spatially-located objects are thereby 'structurally determined by' space. Other relationalists might accept that spatially-located objects are *structurally determined* by space, but claim that they are not therefore *impacted* by space. The latter is my own view.

I am concerned with both of these standard metaphysical debates, but only insofar as they extend to my own broader notion of dimension or spatial form. This broader category of spatial form, which I take to be more fundamental, naturally encompasses space, time, and spacetime. But it is not restricted to these particular spaces. (On my view, what is called 'space' is often only kinematic space, i.e. a three-dimensional spatial form in which material objects interact via accelerative forces. Modern physical spacetime is in turn just gravitational space, i.e. a kinematic space in which objects interact as loci of non-gravitational accelerative forces.) I am a realist about spatial form, insofar as I believe that mind-independent things like trees and people are objectively located in various spatial forms—including space, time, and spacetime. Thus I am not an idealist. But while I believe that mind-independent things stand in objectively valid spatial relations to one another, I do not believe that the spaces in which they are located are real.

No spatial forms are real, on my view (to repeat for the sake of clarity), *but some unreal spatial forms are objectively valid, and hence more than merely ideal*. Objective spaces are *pure objective appearances*, in a non-idealistic sense of 'appearance'. Namely, objective spaces are the pure objective appearance of real *dynamic structures*, or the real forms of universal forces' impact on corresponding spatially-located objects. I will elaborate below. But first, a question:

How should the ontologist who understands reality as force assess the putative reality of

⁷⁹⁷Another intuitive characterization of realism is more stringent: one might say that realists about space claim that *mind-independent* reality has determinate spatial structure. Thus construed, Kant would be an anti-realist, insofar as he claims that space is *merely* a form of our sensible intuition. But Kant endorses a notion of *objective validity* that applies to mind-dependent phenomena, including spatial and temporal relations among empirical objects. Hence, he would *not* be an anti-realist about space, in my preferred sense of 'anti-realism'. I will return to the issue of objectivity below.

⁷⁹⁸Belot 2011, 3.

forms? Can a force-ontologist allow that there are real structures, or real spaces? How should a force-ontologist understand the relationship between spatial and material geometry, or between spatial geometry and dynamic relations among objects in space? What could it mean for a structure or space to exercise power? Moreover, what could it mean for structural or spatial form itself to be essentially definable only in relation to force? *How could form itself be force?*

This question is both 'ontological' and 'ontic', again in Heidegger's sense. I am asking how structural form can *be real*, and how spatial form can *objectively appear*, given my basic ontological hypothesis that reality is force. But I am also asking how form itself, both structural and spatial, can be fully understood only in relation to force. In other words, I am implying that form considered in abstraction from force is not just merely ideal; it is also not genuinely form. Ideal form—*viz.*, universal form—is precisely form thus abstracted entirely from force.

These last claims are analogous to Nietzsche's aforementioned view that power [*Macht*] characterizes not only the relationship of every drive [*Trieb*] to all others (i.e., insofar as it strives “to be master” of “all the other drives” (*BGE* 6)), but also the ultimate aim of every real drive. 'Power' is for Nietzsche both the relational 'form' and the ultimate 'content' of every real drive. Likewise, then, I claim that *force* not only aptly characterizes *how* real forms relate to other things (*viz.*, by impacting them) and *how* objective forms relate to other things (*viz.*, by being forces' abstract impact), but also indicates the *essence* or *nature* of structural or spatial form itself. Rational (i.e. universal) form is merely the subjective appearance of form. Universal form is not truly form. Only form-as-impact (i.e. objective field-of-effect) is true field-structure or spatial form. Objective spatial form is a special case of objective impact- or field-structure, in the case where the corresponding force is *universal*. Only form-as-force (i.e. real structure) is true structural form. Only objective fields or real structures are truly forms at all. True forms, objective fields and real structures, are *natural forms*.

19.5. I will return to spatial form in the next sub-section, with sustained analysis extending through the rest of this section. But first, a few more words on structure are in order, as they will prove directly relevant to my discussion of space.

Structural form is the *coherent external force of two or more dynamically-interacting parts*, i.e., these parts' *holistic exercise of power in relation to external things*. Putative structures that do not function as holistic force-loci are not genuine structural wholes. And putative

structures that do not impact things beyond their own parts are not genuine structures. Idealists tend to view the reality of wholes as grounded simply in their 'determination' of their own parts—e.g. organs as being determined by the well-functioning of the organism. This is a profound metaphysical error. Indeed, it is a major constitutive element, if not even the defining feature, of idealistic confusion about force. And it has direct ramifications on idealistic (mis)conceptions of spatial form, in particular: idealists often take objects to be determined or impacted by the spaces in which they are located. But they are not. Spaces are forms *within* which objects causally impact *each other*. Spaces themselves impact nothing. But, again, objective spaces are spatializations of forces that *do* have real impact or causal influence.

How are these errors (assuming that I am right that they are indeed errors) related to idealism? The idealist fetishizes abstraction, or considering things apart from both (1) the force that grounds their reality (to the extent that they are real) and (2) the force by which they are impacted (to the extent that they are objective appearances). Treating wholes as self-contained *monads* is a way to ignore their actual impact on things, and instead to treat them as essentially *self-regulating* or *self-determining*. This is how the idealist thinks of human beings: as self-determining subjects. But we are not. To the extent that we are coherent subjects, as opposed to just aggregated drives, it is in part because our constitutive drives have coherent effect—i.e., because we act as coherent subjects in relation to external things that we impact. We are not coherent subjects just because our constitutive drives are part of a 'system' or interrelated by 'principles'. Our real unity as subjects is just the holistic subject-like force that our constitutive drives exert on external things. (Not all real wholes are subjects, however, of course.) The idealist understands individuality *subjectively*—is caught up in *inwardness*, rather than by a more objective orientation *outward* towards reality. The idealist sees the subject as *essentially* self-determining (i.e. free, autonomous), and only inessentially as determined from without (i.e. unfree, heteronomous). The dynamist or true naturalist sees the subject as *essentially* both impacting other things and being impacted from without by higher forces—i.e., as being both impactful or truly real, and truly impacted as a site of higher forces' objective appearance.

Internal structure is 'inner shape': organization or composition. Genuine internal structure can be a locus of *organic force*, i.e. force whereby an *organic whole* or *organism* impacts things beyond itself. The parts of an organism are in some sense 'determined' by the whole, as its *organs*. But this internal 'determination' of organs by the organism is not genuine impact. It is a

merely ideal mode of 'determination'. The functional arrangement of organic parts is not actually produced by the whole—or by the idea of the whole, or by its well-functioning, etc. To pretend otherwise is to invoke an idealistic mode of teleological explanation. The reality of an organic whole is not grounded in the way it 'determines' its constitutive parts as organs. The reality of an organic whole is grounded in the coherent organic force whereby it impacts external things.

Genuine internal structure can also be a locus of *mechanical force*, i.e. force whereby a *mechanical whole* or *mechanism* impacts things beyond itself. The parts of a mechanism are in some sense 'determined' by the whole, as its *gears*. But this internal 'determination' of gears by the machine-whole is not genuine impact. Gears are not actually ordered by the mechanical wholes they constitute. And gears are often not actually ordered by any intelligent designer who arranges them in accordance with an idea or plan of the machine-whole. For instance, the solar system can be viewed as a mechanical whole. But the individual orbital trajectories of the planets around the Sun are not determined by their holistic arrangement into the solar system as we know it, or by any architect aiming to produce this holistic pattern of concentric planetary orbits. Even when mechanical wholes are actually produced by design, finally, this is not aptly described in terms of the determination of the gears by the machine-whole. The idea of the machine-whole truly impacts the engineer, who in turn truly impacts the gear-parts. But the idea of the mechanical system is not the same as the mechanical system. The machine itself never determines the gears' operation. Rather, the gears determine one another, as interacting forces.

Recall, in this light, that in order for something to be real it must exert force on other impactful things, not upon things that are merely objects for higher forces. Hence, in order for the organs in an organism to be real, they must exert force on other impactful things. Here there is a natural candidate: other organs. In a real organic whole, that is, organs dynamically interact with each other, as loci of *vital force*. Thus, in real organisms, organs stand in real tension or harmony with one another. They are not simply 'side by side' inside of the organism, each doing its part to promote the well-being of the whole. Here compare Nietzsche's claim that “[w]hat every smallest part of a living organism wants, is an increase of power” (*WP* 702 / *KSA* 13:14[174]).⁷⁹⁹ The functional interrelation of the organic parts *emerges* from their dynamic

⁷⁹⁹Here consider also: “Even the body within which individuals treat each other as equals[...]if it is a living and not a dying body, has to do to other bodies what the individuals within it refrain from doing to each other: it will have to be an incarnate will to power, it will strive to grow, spread, seize, become predominant[...]because it is *living* and because life simply *is* will to power” (*BGE* 259); “For fundamentally it is the same active force that is at work on a grander scale in those artists of violence and organizers who build states, and that here, internally, on a smaller and pettier scale, directed backward[...]creates for itself a bad conscience and builds negative

interaction; the holistic functional unity of the organs does not *cause*, *determine*, or *impact* their dynamic interaction. Quite the opposite: the organs' dynamic interaction grounds or determines the holistic force of the organism. Likewise, the gears in a real mechanism must truly *engage* each other, as loci of *machine-force*.

The holistic force of a real structure is not reducible to the force of its dynamically-interacting parts. One might claim that the force of the whole is simply identical to the aggregated force of the parts. But then the whole has no genuine reality, apart from the reality of its distinct parts. One might in turn attempt to avert this problem by distinguishing the parts from their dynamic interactions with one another. But this is to distinguish these parts from the ground of their own reality: their own nature. This would be bad metaphysics. The dynamic relations among parts are not merely *superimposed* on them, in a real structural whole. Rather, these parts are essentially defined by their mutual interactions. (Here recall Dewey on “the intimacy of the relations that hold the parts together,” which he calls '[t]he characteristic of artistic design': “A work of art is poor in the degree in which [these relations] exist in separation, as in a novel wherein plot—the design—is felt to be superimposed upon incidents and characters instead of being their dynamic relations to one another.”⁸⁰⁰) Structure is real only insofar as its holistic force is distinct from the force of its dynamically-interacting parts. The external force of a real structural whole *emerges* from internal dynamic interactions among its parts.

Can the external force of a real structure be, not just *distinct* from the internal forces of its dynamically-interacting parts, but also *greater* than these internal forces? Yes, certainly. Is the force of a real structural whole *always* greater than the forces of its parts? No—why would it be? Some wholes are more real than their parts; other wholes are less real than their parts. For instance, a highly anti-individualistic human society (or an ant colony, etc.) might well be a locus of greater force, as a whole, than the aggregated force of all its constitutive members. On the other hand, a collection of interacting bodies with strong electric charges may have virtually no external impact as a whole, if parts with positive and negative charges are perfectly balanced.

External structure is 'outer shape': surface, boundary, border, outline, etc. Genuine external structure is a locus of *surface-force*, i.e. surface or boundary insofar as it exercises real power. Putative boundaries that do not function as loci of force are not genuine boundaries. The political applications of this point are in some ways clear, I would hope, but also perhaps easily

ideals” (*GM* II:18).
800Dewey 1934/1980, 121.

misunderstood. A forceful border need not be an impenetrable or non-porous one, for instance. A real border can be a site of *attractive* force, after all, not just *repulsive* force. Likewise, a forceful border need not be a static or unchanging border. That said, my view here does diverge starkly from (facile but apparently still surprisingly prevalent) views on which borders—say, those between nations—are just imaginary lines drawn in the sand, with no real significance or normative force. To the extent that this is true of a given border, on my view, it just means that this border is unreal. This says nothing about the nature of borders, in a positive sense, and indirectly supports my own view: a 'border' that is only an inert, purely ideal line is not a border.

Real external structure has impact in the mode of *external impression* or *imprint*: the ring's surface is externally imprinted on the wax seal, for example. By contrast, real internal structure has impact on external things in the mode of *surface impression*: something's 'inner form' is projected onto its surface, from within—and thereby potentially impressed onto external things. For instance, an engine heats up in certain areas of its outer surface more than others while running, due to corresponding differences in internal structure and function. The engine therefore heats up other parts, or the air around it, or your hand if you touch it, differentially, depending on which part of its surface they touch. The structure of the engine's impact on surrounding things, in the mode of heat, can thus be interpreted as an *external impression* of its surface-heat, which is in turn a *surface-impression* of its internal force of combustion.

In the case where internal structure is thus 'externalized', mediated by its impact from within on its own surface, the resultant form of impact is aptly termed *expressive form*. ('Expressive', because the internal structure is 'expressed' externally, like an idea or feeling being artistically 'expressed'.) For example, the agon between Christian drives to transcendence and older pagan drives to telluric natural force, within medieval architects, was arguably 'externalized' in the vaulted organic forms of Gothic cathedrals.⁸⁰¹ Likewise, Émile Durkheim describes concepts of space as what might naturally be called 'expressive' forms of cultural force:

There are societies in Australia and North America in which space is conceived in the form of a vast circle because the encampment itself is circular, and the spatial circle is divided just like a tribal circle and in its image. There are as many regions as there are clans in the tribe, and it is the place occupied by clans inside the

⁸⁰¹Here I am loosely summarizing a suggestion made by Ruskin (Ruskin 1853/2004)

encampment that determines the orientation of the regions.[...]Thus, social organization has been the model for spatial organization, which is like a tracing of it. (Durkheim 1912/2008, 11–14)

Finally, a possible instance of *inorganic* 'expressive' form arises in relation to geologists' widespread acceptance of the theory of continental drift in the early- to mid-1960s. What proved to be crucial evidence in favor of drift theories was the success of a model, accounting for previously observed magnetic anomalies around mid-ocean ridges, due to Vine and Matthews, and independently developed by Morley.⁸⁰² The Vine-Matthews-Morley (VMM) proposal synthesized the (at the time controversial) theory of sea-floor spreading⁸⁰³ with the notion of thermo-remanent magnetization in the oceanic crust⁸⁰⁴ and the (also controversial) hypothesis of periodic global magnetic pole reversals. This synthesis led to the inference that there should be alternating stripes of oppositely polarized magnetic materials in the oceanic crust extending outwards from mid-ocean ridges, with a central anomaly along the ridge axis magnetized in the current direction of the Earth's magnetic field.⁸⁰⁵ The upshot, for my purposes, is this: the pattern of alternating stripes of magnetic material around mid-ocean ridges is at least fairly aptly characterized as an 'expressive' form of the Earth's dipolar magnetic force. (It may be more apt, however, to say that the magnetized stripes on the ocean floor are only a spatial *impression* of the temporal structure of the Earth's magnetic force, acting just as a real *surface*.)

19.6. Question: Are agon and hierarchy *real* structures?

Answer: Agon and hierarchy both *can* be real structures—namely, insofar as agonistic or hierarchical interactions function as holistic loci of force. However, not every *objectively valid* relation of agon or hierarchy corresponds to a *real* agonistic or hierarchical structure. For instance: the natural world comprises no real things other than dynamically-interacting forces.

802Frankel 1982.

803 In essence: upwelling material from the Earth's mantle forms new oceanic crust along the axis of mid-ocean ridges. This new crust is gradually pushed away from the ridge by the formation of new crust, and old ocean crust melts back into the mantle as it is pushed down at the edge of oceanic basins. Hence the rock comprising the ocean crust is youngest near mid-ocean ridges, and oldest at the edge of the ocean. Interestingly, this fact of varying crustal age was not securely established empirically until 1970 (LeGrand 1988, 235-236), well after geologists had collectively accepted continental drift as a research program.

804 Certain types of rocks become permanently magnetized in the direction of externally applied magnetic fields (e.g. the magnetic field of the Earth) present at the time of their formation.

805Vine and Matthews 1963.

So, then, is *objective reality itself* a real thing—namely, a real structure comprising all agonistically- and hierarchically-interacting forces? No, objective reality is not a real all-encompassing structure. Objective reality is just the all-encompassing *field* of interacting forces. This basic field is not itself a force. It is an unreal but objectively valid space, or dimensional structure, that contains all things insofar as they are objects impacted by force. Objective reality is an unreal but objectively valid representation of nature as an all-encompassing field-of-effect.

Nature is real, however. Nature is the real order of primitive forces, interacting prior to any containment by embedding spaces or unifying Forms. We directly apprehend nature in poetry. And we represent nature as objective reality in science. Poetry presents mind-independent reality as a real order of *forces*. Science represents the same mind-independent reality as an all-encompassing field of appearances: impact-images—*objects*.

Objective reality is a qualitative space, in the sense outlined above. Namely, objective reality is a spatial representation of *force*, generically. Force, generically, can be understood as a universal qualitative force. The impact of force, as a universal qualitative force, is its universal quality or non-extensive impact. What is that? It is *generic impact*: force, generically, produces impact in its objects. The objects located within objective reality or total dynamic space, construed as the qualitative space corresponding to the quality, force, are thus things insofar as they are impacted. What is a thing insofar as it is impacted? It is a thing insofar as it has generic passive charge or inertial charge, i.e. generic powers of receptivity or resistance to being impacted in the way that it is. Thus, to objectively represent things insofar as they are generically dynamically impacted is to represent them as loci of passive or resistive 'powers'. Hence, the objects located within objective reality or total dynamic space are just *objects*, or things insofar as they are impacted by real forces.

The concept [*force*], in turn, is just an objectively valid *mental representation* of this total dynamic space. Thus the concept [*force*] is an objective intellectual image of an objective mind-independent total image of nature. We use the concept [*force*] to mentally organize, not our experience of forces 'in themselves', but rather our experience of forces *in relation to their objects*, and specifically our experience of *objects insofar as they are impacted by forces*.

19.7. Spaces are objectively valid only insofar as they are pure formal appearances of *universal forces*—i.e. forces that impact all of the objects located within them in the same way.

To spatialize a universal force is to treat it as a background structure. Spaces thus function *epistemologically* as representational norms or *ways of seeing*, rather than as any actual objects viewed thereby. Here it is helpful to compare Kant's notion of *transcendental form*. On Kant's view, recall, the pure forms of our sensible intuition (space and time) and the categorical forms of our understanding are not objects, but rather background structures in and through which our experience of objects first becomes possible.⁸⁰⁶ In my terms: Kantian transcendental forms are *spatializations of universal cognitive forces*. Here it is worth noting that Kant's notion of 'transcendental form' has exerted wide-ranging influence on later modern thought.

For instance, Heidegger develops a broadly similar notion of 'world'. A Heideggerian 'world' is a historically- and culturally-specific understanding of Being, or horizon of intelligibility—a historical people's basic sense of 'what is and matters', as one commentator puts

806Kant allows that space and time manifest both as pure 'forms of intuition' and as pure 'formal intuitions'. Qua 'formal intuitions', space and time are a priori mental representations in which every object we experience and sensation immediately given to us is located. Qua 'forms of intuition', they are the “*merely potential form[s]*” of a “mere capacity to take in a manifold, devoid of any capacity to unify the manifold” (Longuenesse 1998, 103-4). But let me set aside this nuance for now, in the main text.

Although it does not directly impact my overall argument, it should be noted that there is in fact substantial interpretive controversy surrounding the nature of Kant's distinction between 'formal intuitions' and 'forms of intuition'. Following Hegel (1977, 69-70), Béatrice Longuenesse has argued that Kant takes the pure intuitions of space and time described in the Transcendental Aesthetic to be *produced* via the “transcendental synthesis of imagination,” or “figurative synthesis,” characterized in the second-edition version of the Transcendental Deduction of the categories (*KrV* B150-1, B154). On Longuenesse's reading, sensibility itself—i.e., in abstraction from its affection by understanding—provides only “*merely potential form*,” or “the form of a mere capacity to take in a manifold, devoid of any capacity to unify the manifold” (Longuenesse 1998, 103-4). Qua “formal intuitions” (which Longuenesse thinks just are the 'pure intuitions' of the Aesthetic), space and time are in turn the synthetically-produced *actualizations* of these 'merely potential' “form[s] of intuition” (ibid., 221). Namely, the 'formal intuitions' of space and time are produced via an imaginative synthesis of the manifold of *sensations* given by space and time qua mere 'forms of intuition'. Compare Kant's claim that “inner sense[...]contains the mere form of intuition, but without combination of the manifold in it, and thus it does not yet contain any determinate intuition at all, which is possible only through the consciousness of the determination of the manifold through the transcendental action of the imagination (synthetic influence of the understanding on the inner sense), which I have named the figurative synthesis” (*KrV* B154)

Others interpreters have contested this Hegelian interpretive strategy. Thus, Henry Allison (2000, 74; 2004, 114) insists that the figurative synthesis simply yields *determinate [bestimmte]* versions of *indeterminate* pure intuitions of space and time that are antecedently given by sensibility *alone*. Allison identifies these *determinate* pure intuitions of space and time as 'formal intuitions'. And he identifies the indeterminate 'forms of intuition' with the unified and all-encompassing space and time that are the “main focus” of the Aesthetic. Note that Longuenesse, too, agrees that space and time *are* forms of intuition—she thinks that space and time are *both* forms of intuition *and* formal intuitions. Here, consider her implicit agreement with Heidegger when she says that he “recognizes the identity between space and time as *pure intuitions* and space and time as *forms of intuition*” (Longuenesse 1998, 225). (She takes 'pure intuition' and 'formal intuition' to be co-referential.) But Longuenesse suggests that certain *properties* of space and time as described in the Aesthetic—in particular, their “unity, unicity, [and] given infinity”—are “products of our imagination” (Longuenesse 2000, 104); and hence she insists that space and time *qua* 'forms of intuition' are *not* the space and time of the Aesthetic, i.e. the pure “*intuitions in which all appearances are combined and ordered*” (Longuenesse 2000, 104).

it.⁸⁰⁷ Hence 'world' is a *clearing*, both in the sense of a process of clearing and the resultant cleared region. It is in and through this clearing that all projects of ordinary matter-of-factual knowledge—truth-as-correspondence, as Heidegger would say—must take place. World-as-clearing is thus a (phenomenological) condition of possibility of ordinary factual truth. World is not an *object* or a *collection of objects* of possible experience, notably. Worlds are rather the “ever-nonobjective” transcendental conditions of possibility of objective experience, which Heidegger takes to be historically-varying and culturally specific.⁸⁰⁸

Likewise, Émile Durkheim endorses a broadly Kantian notion of transcendental forms, specifically in the mode of “categories” that he takes to “dominate and encompass all other concepts.”⁸⁰⁹

At the source of our judgments are a certain number of essential notions that dominate our entire intellectual life. These are what philosophers since Aristotle have called the categories of understanding: notions of time, space, genus, number, cause, substance, personality, and so on.⁸¹⁰ They correspond to the most universal properties of things. They are the solid frames that enclose all thought. Thought does not seem able to break out of them without

807Thomson 2011. Compare other similar explications “World is the whole context of shared equipment, roles, and practices on the basis of which one can encounter entities and other people as intelligible” (Dreyfus 2005, 407); “We could, then, think of understanding one’s world as possession of a kind of metaphysical map (world, remember, is a kind of space), a map detailing both the regions of being and the kinds of beings that dwell there, a map that is internalized by all fully-fledged members of the culture[...]To understand one’s world is, then, to understand what, fundamentally, there is.[...]In and around the temple passage, however, Heidegger’s presentation of world seems to be focused not on ontology but rather on ethics; not on what *is* but rather on what *ought to be* the case[...]In general, when the artwork opens up our world for us we understand 'what is holy and what unholy' (*ibid.*), 'the shape of destiny for human being' (*PLTp.* 42), the broad outline of the 'simple and essential decisions' (*PLTp.* 48) which constitute, for us, the proper way to live, our, as I shall call it, fundamental *ethos*” (Young 2001, 24).

808“‘The world is not the mere collection of the countable or uncountable, familiar and unfamiliar things that are just there. But neither is it a merely imagined framework added by our representation to the sum of such given things. The *world worlds*, and is more fully in being than the tangible and perceptible realm in which we believe ourselves to be at home. World is never an object that stands before us and can be seen. World is the ever-nonobjective to which we are subject as long as the paths of birth and death, blessing and curse keep us transported into Being. Wherever those decisions of our history that relate to our very being are made, are taken up and abandoned by us, go unrecognized and are rediscovered by new inquiry, there the world worlds. A stone is worldless. Plant and animal likewise have no world; but they belong to the covert throng of a surrounding into which they are linked. The peasant woman, on the other hand, has a world because she dwells in the overtness of beings, of the things that are” (Heidegger 1971, 43).

809Durkheim 1912/2008, 335. See also *ibid.*, 11.

810Kant identifies space and time as *intuitions*, not *concepts*, and hence asserts that they are not categories, or pure forms of understanding, but rather pure forms of sensible intuition. Durkheim does not draw this Kantian distinction, however.

destroying itself, since we seem unable to think of objects that are not in time or space, that are not countable, and so on. Other notions are contingent and shifting; we can imagine a person, a society, or an era that can do without them; but the primary categories seem inseparable from the normal functioning of the mind. (Durkheim 1912/2008, 11)

Durkheim argues that all concepts are 'collective representations', which are not abstract or universal, but “impersonal” in the sense of being *social*.⁸¹¹ Thus he proposes that even 'categories' are collective representations, modeled on features of the specific societies from which they causally derive:

[The basic categories of understanding] are born in religion and of religion; they are a product of religious thought.[...]But if these categories of thought have religious origins, they must participate in what is common to all religious phenomena: they too must be social things, the products of collective thought. [...]Even now this social dimension can be glimpsed in some of them.[...]Time is like a continuous canvas on which all duration is spread out in the mind's eye, and on which all possible events can be located in relation to fixed and determinate reference points. It is not *my time* that is organized this way, but time as it is objectively conceived by everyone in the same civilization. This alone suggests that such an organization must be collective. And indeed observation confirms that these indispensable reference points, in relation to which all things are located temporally, are borrowed from social life. The divisions into days, weeks, months, years, and so on correspond to the recurring cycle of rituals, holidays, and public ceremonies. A calendar expresses the rhythm of collective activity while ensuring its regularity.

“The same is true of space,” Durkheim adds—recall his aforementioned appeal to 'societies in Australia and North America in which space is conceived in the form of a vast circle because the

⁸¹¹Durkheim 1912/2008, 329. Likewise: “To think conceptually is not simply to isolate and group together qualities common to a certain number of objects; it is to subsume the variable to the permanent, the individual to the social” (ibid. 334). Hence Durkheim allows that some concepts are *particular*—e.g. the representation of a god (ibid., 328).

encampment itself is circular.' More broadly, then, Durkheim takes our recognition of the force that certain concepts have on us to be an indirect apprehension of the force that society has upon the individual⁸¹²—just as in the case of more traditional religious representations.⁸¹³ Even the 'impersonality' of scientific reason and 'logical thought' is thus ultimately rooted in the social nature of all conceptual representations, on his view.

If Durkheim's theory of the “social origin of categories” is correct, then, Kantian 'pure forms' of experience are not actually valid for all humans—or at least, if there are any universally valid forms of experience, then they must be differently interpreted in different societies:

[T]he categories of human thought are never fixed in a definite form. They are made, unmade, and remade incessantly; they vary according to time and place.

[...]They depend on the way this collectivity is constituted and organized, on its

812“[I]mpersonal reason is simply another name for collective thought[...]The reign of impersonal aims and truths can come into being only through the cooperation of particular wills and sensibilities[...]In short, there is something impersonal in us because there is something social in us” (Durkheim 1912/2008, 341-2); “The value that we ascribe to science depends, in short, on the idea that we, collectively, have of its nature and its role in life” (ibid., 334).

813In *The Elementary Forms of Religious Life* (1912), Durkheim defines a religion as a “unified system of beliefs and practices relative to sacred things[...], which unite its adherents in a single moral community called a church” (1912/2008, 46). As in his earlier work (see Durkheim 1893/2014, 131), Durkheim here insists that religiosity is predicated upon the existence of a set of collective representations. But in *Elementary Forms*, unlike before, he also insists that all religious systems rely upon a distinction between the *sacred* and the *profane* (Durkheim 1912/2008, 36). Durkheim elaborates this distinction in several ways: (1) sacred things are protected and isolated by *prohibitions* (ibid., 40); (2) the difference between sacred and profane things is *categorical* (“The energies at play in one are not merely different their degree of intensity; they are different in kind” (ibid., 38); and (3) the sacred is tied to self-reinforcing “current[s]” of “common passion” arising within assembled groups of people, which phenomenon Durkheim terms collective “effervescence” (ibid., 154-162).

In *The Division of Labor* (1893), Durkheim's claims that collective representations have become increasingly abstract or universal, and hence less “concrete” (1893/2014, 228) or “well-defined” (ibid., 64), in modern society. i.e., modern moral principles, such as the injunction to assume a specialized function in the division of labor (ibid., 35-6), don't guide individual behavior to the same level of specificity that traditional religious law and modern 'repressive' law do (ibid., 134; 226-7). In turn, he argues that this universalization tends to decrease the intensity and effervescent reinforcement of collective feelings. Hence the division between the sacred and profane is attenuated.

In *Elementary Forms*, by contrast, Durkheim decouples the degree of abstraction of a given state of collective consciousness from its (lack of) intensity and potential for effervescent amplification. For instance, he suggests that the French Revolution was marked by a “general effervescence characteristic of revolutionary or creative epochs,” even though Revolutionary fervor centered around highly abstract ideals like those of “homeland, liberty, and reason” (Durkheim 1912/2008, 159-161). This decoupling of effervescence and abstraction or generality allows Durkheim to identify collective effervescence, and hence the reinforcement of a division between the profane and the (effervescently-tinged) sacred, in an increasingly wide range of situations. Indeed, he concludes that, even in modernity, “there is no moment in our life without some rush of energy coming to us from the outside” (ibid., 159). Thus although Durkheim possesses a proto-theory of collective effervescence even in his earlier work, it is not until his later work that he allows for the possibility of effervescent reinforcement of highly abstract collective feelings or ideas, and hence for the ubiquity of religiosity in modern scientific societies, as well as pre-modern ones.

morphology, its religious, moral, and economic institutions, and so on.⁸¹⁴

Hence, even if a theorist following broadly in Durkheim's footsteps were to accept that space is a truly universal form of human intuition, she would presumably insist that the precise structure or nature of intuitive space changes over the course of human history, and also varies between societies at a given time.⁸¹⁵ Regardless of debates about categories' cultural specificity, however, the basic point remains: the broadly Kantian notion of *transcendental forms* underlying the possibility of objective experience is explanatorily powerful, and it has had a deep and far-ranging impact on modern thought. (Again, further examples could plausibly be found in Foucault, Bourdieu, and Butler, among many others.)

My account of spatial form is intended to preserve the explanatory power of broadly Kantian notions of transcendental form, while removing their idealistic baggage. Again, I believe that space, time, and various other spatial forms are mind-independent things in which mind-independent objects are genuinely located. Objective spaces are only objective *appearances* of universal forces, on my view, but they are not *merely ideal*, or *subjective* appearances only *for human beings*. Thus, again, I am no transcendental idealist. But I do believe that objective spatial forms—including spacetime—stand in a kind of relationship to the objects within them that is importantly similar to the relationship that Kant identifies between pure forms of human cognitive powers (i.e. space, time, and the categories) and the phenomenal objects whose cognition (Kant claims) these forms render possible.

Objective reality is the ur-space, or absolute universal form. Objective reality is just the universal field of all interacting forces. This is an unreal but objectively valid space that contains all things insofar as they are objects generically impacted by any natural forces.

814Durkheim 1912/2008, 16-17.

815Durkheim (1912/2008, 14) hence suggests that “[f]ar from being inherent in human nature in general, there is not even any distinction of right and left that is not, in all likelihood, the product of religious, hence collective, representations.”

CHAPTER V

Conclusion:

Force and Modern Understanding

... Groß sind des Berges Kräfte;
Da wirkt Natur so übermächtig frei,
Der Pfaffen Stumpsinn schilt es
Zauberei.

-Goethe, *Faust II* (1832)

There are many forces in nature—exactly as many as there are truly real things. The lightning strike is force. The wind is a force that moves the leaves. The rustling of the leaves is sonic force. Melody is one kind of force, and rhythm another. Color is force. The Sun's illumination is force. The explosion's shock wave is force. The hawk-shriek is force. The ordered battle march is force. The lawless leap of joy is force. The ocean's ebb and flood is force. The mountain's repose is force. The soil's fertility is force. The hard ground is force, pressing upward against the driving rain. The water's force erodes rock. The canyon is a real image of the river's force. Intellect is mental force. Life is vital force: self-amplifying and self-depleting force, the force of organic growth and decay. Life exerts force in its collective impact on inorganic nature. Life does not only react and adapt, but also contends with its environment. Life exerts force on inorganic nature. And inorganic nature, in its own right, exerts force on life.

Reality is force. To be real is to exercise power, to be a locus of force. A thing that is only determined by higher forces, as a mere object for their outlet, is unreal—nothing but an appearance, nothing but an image of underlying reality. Objective reality is the all-encompassing field of interacting forces. This basic field is not itself a force. It is an unreal but objectively valid space, or dimensional structure, that contains all things insofar as they are objects impacted by force. Objective reality is an unreal but objectively valid representation of nature as an all-encompassing field-of-effect. Nature is real, however. Nature is the real order of primitive

forces, interacting prior to any containment by embedding spaces or unifying Forms.

Form encompasses both appearance and extension. The ground of this interrelation is force. Unreal but objectively valid structures are *fields-of-effect*. Objective fields are the extensive impact or pure structural appearance of forces. Objective spaces are a species of objective field, viz., the pure extensive impact of universal forces. Objective spaces are abstract images of real structures that universal forces produce in their objects. Gravity is a universal force, vis-à-vis all loci of mass-energy. The exercise of human cognitive powers can be understood as a universal force, vis-à-vis all cognitively-determinate objects of experience, as in Kantian transcendental philosophy. Culture can be understood as a universal force, vis-à-vis the objects within historically-specific Heideggerian 'worlds' of shared intelligibility. Natural culture is an irruption of elemental natural forces, in and through responsive human beings. Poetic objectivity and scientific objectivity are two fundamental modes of natural culture. Poetic works make this irruption of elemental forces directly apparent, whereas scientific theories do not. Rather, objective science focalizes elemental forces into explanations of observable phenomena. Scientific objectivity involves an unconscious understanding of causally-basic forces, realized in and through conscious acts of explanation and empirical representation. Scientific objectivity only gives us unconscious insight into reality. This is why science cannot but be 'disenchanted'.

None of this is mystical, or un-scientific. It is just elemental, and prior to all science. We directly apprehend nature in poetry. And we represent nature as objective reality in science. Science represents things as objects determined with respect to elemental physical forces' fields-of-effect, and hence directly presents us only with impact-images, or causally-basic forces' pure objective appearance as explanatorily-basic 'patterns' in the phenomena. Poetry directly presents the same natural world as a real order of hierarchically- and agonistically-interacting forces.

This basic vision of reality as force is not self-serious. It is just direct. Nor is it childish. It is just de-sublimated, and so in a sense more 'primitive'. However, our worship of our own 'spiritual' nature—our faith in a moral God or a cosmic Intelligibility, our self-satisfaction as 'enlightened', our self-love as a 'species being' free to radically re-shape nature in its own image—this modern idealism is all too self-serious, all too childish. And it is all too funny that the modern idealist is most vehement in denying what is most obvious: that his ideals are 'pure' only in the sense of being unreal, because elemental reality is not rational Form, or self-determining Spirit, or mere empirical matter, but sublime and inhuman force. Nature is often wickedly funny.

APPENDICES

APPENDIX A:

Newton on God in Natural Philosophy

Newton was relatively cautious about invoking God in his natural philosophical writings, presumably in the name of self-imposed methodological rigor. Thus his substantive discussion of God in the *Principia* is relegated to the brief *General Scholium* appended to the end of the second edition. And broaching the subject in Query 31 of the *Opticks*, he claims merely that it “seems probable to [him]” on the basis of his preceding natural philosophical discussion “that God in the Beginning form'd Matter in solid, massy, hard, impenetrable Particles, of such Sizes and Figures, and with such other Properties, and in such Proportion to Space, as most conduced to the End for which he form'd them[...].” Here Newton's appeal to the purposive activity of an all-powerful Creator is explicitly described as 'probable', which Howard Stein suggests is “a lower degree of confidence than Newton attaches to his principal results in physics.”⁸¹⁶ (Hence, in part, Stein defends his opposition to “a tradition that sees the basic conceptions of Newton's natural philosophy, most especially his conceptions of space and time, as derivative from, or grounded in, his theology.”⁸¹⁷) In short, Peter Harrison is presumably correct that “Newton's reticence about identifying God as the direct cause of gravity can be attributed to his strictures against hypothesizing in natural philosophy.”⁸¹⁸ (Of course, even those commentators who agree that Newton took God to be a *mediate* cause of gravity can deny that Newton took God to be an *immediate* or 'direct' cause of gravity.⁸¹⁹ But the basic point that Newton's frequent reluctance to speak assertively about God is bound up with his natural philosophical methodology clearly remains valid regardless of any such subtleties.)

Notably, however, Newton also maintains in the *General Scholium* that “[t]his most beautiful system of the sun, planets, and comets, *could only [non nisi]* proceed from the counsel and dominion of an intelligent and powerful Being,” and later in Query 31 that “the wonderful

⁸¹⁶Stein 2002, 261.

⁸¹⁷Stein 2002, 297 n.17. Stein is especially concerned to show that Newton “does not derive his “Idea” of space – its ontological status included – from his theology (as has often been claimed)” (2002, 268).

⁸¹⁸Harrison 2013, 142.

⁸¹⁹See e.g. Henry 1994.

Uniformity in the Planetary System *must* be allowed the Effect of Choice” (emphases added).⁸²⁰ Contra Stein, it is far from clear—to say the least—that in these latter passages Newton invokes God's activity with a 'lower degree of confidence than[...]he attaches to his principal results in physics'.

Rather, perhaps at the beginning of Query 31 Newton uses the word 'probable' in an archaic sense⁸²¹ with respect to which Stein's deflationary epistemological inference is misplaced. If this were so, then the apparent tension between Newton's various remarks might well be merely apparent. Perhaps Newton would equally allow that his statements of physical principles, like the law of universal gravitation, are 'probable'. Alternately, perhaps Stein is right that Newton uses the term 'probable' in order to indicate an epistemological contrast between his claims about God and his statements of his 'principal results in physics', but is wrong about the nature of this contrast. For instance, perhaps Newton takes his inference to divine Design and his postulation of the law of universal gravitation to be epistemically justified in different ways, but not to different degrees. (Note that either of the preceding alternatives to Stein's interpretation could—but need not—be developed in a manner consistent with the truth of his further claim that Newton takes the metaphysical conclusions he characterizes as 'probable' to be “open to possible *re*-consideration when *more* things have been learned” through further empirical inquiry.⁸²²)

Or perhaps, although in my judgment implausibly, Stein's interpretation of the word 'probable' in terms of a reduced degree of confidence is accurate, and Newton's occasional less guarded statements—e.g. his aforementioned claim that our astronomical system 'could only' proceed from an intelligent and powerful Being's dominion and counsel—are simply the products of his rare indulgence in hyperbole, or self-consciously unjustifiable expressions of his

820To be more precise, Newton is here likely alluding to the relative situation of the bodies in the solar system, rather than to the law of universal gravitation per se. Compare his remark in correspondence with Richard Bentley that “[...]Gravity may put the Planets into Motion, but without the divine Power it could never put them into such a circulating Motion as they have about the Sun; and therefore, for this, as well as other Reasons, I am compelled to ascribe the Frame of this System to an intelligent Agent” (1958, 298).

821E.g. see Garber and Zabell's discussion of different historical meanings of the Latin word *probabilis* (1979, 44-47). Thanks to Gordon Belot for raising this possibility.

822“The second respect in which the metaphysics is left open to revision is more far-reaching (and commensurately vaguer). It is related to Newton's statement in 'De gravitatione et aequipondio fluidorum' that we cannot know with certainty the ultimate constitution of things: namely, the general 'probable' metaphysical conclusions Newton has reached on the basis of a comprehensive consideration of what has been discovered from phenomena are in the nature of the case open to possible *re*-consideration when *more* things have been learned; hence the form in which Newton expresses his hopes for the success of his program in the Preface to the *Principia*: 'I hope the principles here laid down will afford some light either to that, or some truer, method of Philosophy' (Stein 2002, 291).

religious faith. More implausibly still, finally, perhaps Newton's epistemological views are simply manifestly inconsistent in this regard.

Newton's appeal to God's activity at the beginning of Query 31 is furthermore evidently intended to be justified empirically rather than by pure rational reflection. This anti-aprioristic tendency is on display again later in the *General Scholium*, where Newton prefaces his claim that God “does certainly belong to Natural philosophy” with the qualification, “from the appearance of things ...”.⁸²³ Yet Newton also never rejected the authority of Scripture, and was like many other early proponents of his system concerned to argue against what he took to be the heresy, endemic to deism, of propounding natural religion to the exclusion of Christian revelation.⁸²⁴

In his private communications, Newton was at times still more candid about the connection he perceived between his natural philosophy and his Christian faith. Thus William Whiston, his disciple, records asking him:

...why he did not at first draw such Consequences from his Principles, as Dr. Bentley soon did in his excellent Sermons at Mr. Boyle's Lectures; and as I soon did in my *New Theory*;⁸²⁵ and more largely afterward in my *Astronomical Principles of Religion*; and as that Great Mathematician Mr. Cotes did in his excellent *Preface* to the later Editions of Sir. I. N.'s *Principia*: I mean for the advantage of Natural Religion, and the Interposition of the Divine Power and Providence in the Constitution of the World; His answer was, that He saw those Consequences; but thought it better to let his Readers draw them first of themselves. . . .⁸²⁶

823Howard Stein (2002, 261) appeals to the same quotations to make the same point.

824Newton was no deist: he did not reject the authority of Scripture, and he allowed for the possibility that God could at any moment suspend the laws of nature established by his ordained (as opposed to absolute) power. As James E. Force puts the point: “[Newton's] Arian position is definitely unorthodox, even heretical, but it is clearly not deistic. Even in his Arianism, Newton takes the Bible seriously” (Force 1990a, 60); “Newton's God of dominion causes him to spurn as idolatrous anyone who dilutes the dominion of God whether through deistic mockery of God's power or through misguidedly worshipping false images of God or false metaphysical conceptions of God. This includes deistic radical Whigs who laugh at the story of Moses and the flood as well as moderate low churchmen who subscribe to the Trinitarian heresy and the moderate Whig political establishment which supports that false creed” (Force 1990b, 94). So too Richard Popkin: “Newton's stress on God's dominion, on God's omnipresence and transcendence, and on God's being beyond all human conceptions definitely sounds very much like the traditional Jewish view, rather than a deistic conception of a supreme architect” (Popkin 1990, 5). More in the same vein: “Moreover, the Scholium places stress on the counsel and will of God. This voluntarist conception of God as an active, willful God of dominion establishes Newton's position as opposing Deism. His is neither the abstract deity of the ancient philosophers nor the remote, impersonal God of contemporary Deists, and this Newton is intent on making absolutely clear to his readers” (Snobelen 2001, 176). See also Jacob and Jacob 1980, 265.

825E.g. Whiston insists that “the Effects of Nature” are “nothing but” the “Divine Power” “acting according to fix'd and certain Laws” (1737/1696, 296).

826Quoted in Force 2004, 82.

In a well-known correspondence with Richard Bentley, similarly, Newton frankly acknowledges that “[w]hen I wrote my Treatise about our System,⁸²⁷ I had an Eye upon such Principles as might work, with considering Men, for the Belief of a Deity, and nothing can rejoice me more than to find it useful for that Purpose.”⁸²⁸

In sum, then, while commentators continue to debate various more nuanced aspects of Newton's view regarding the relationship between God and the law-governed order of nature,⁸²⁹ Stephen Snobelin is right that “few today would doubt that Newton's advocacy of the design argument and his belief in God played an active role in his natural philosophy.”⁸³⁰ Somewhat more specifically, John Henry is likewise right to identify as the “general consensus among historians of Newton's thought” the interpretive conclusion that, in one way or another, “God was Newton's most favoured explanation for Gravity.”⁸³¹ For Newton, “active Principles, such as is that of Gravity” are “general Laws of Nature,” by the “help” of which “all material Things seem to have been composed of the hard and solid Particles[...], variously associated in the first Creation by the Counsel of an Intelligent Agent.” And this process ultimately reflects the fact that “it became him who created them to set them in order.”⁸³²

Newton's careful insistence that such Principles “appear to us by Phaenomena” although their “Causes be not discover'd” hence coincides with his profession of belief that God has

827I.e. the *Principia*—this is clear in context, but for a concurring opinion see also Snobelen 2001, 173.

828Newton 1958, 280.

829E.g. for a controversy about Newton's attitudes regarding action at a distance, in relation to his views on the role of God vis-à-vis gravity, see Henry 1994 (arguing against A. Rupert Hall, Alexandre Koyré, and I. Bernard Cohen's view that “Newton relied more or less directly upon God to explain the force of gravity,” which Henry plausibly suggests is “bound up with their belief that he did not believe action at a distance to be possible and that gravitational attraction could not, therefore, be a property of matter” (125) that Newton did in fact believe in the possibility of gravitational attraction as a form of action at a distance, grounded in a *non-essential* power of mutual attraction *superadded* to matter by God). Cf. Janiak 2008 and 2013; and see Henry 2011 and 2014 for responses. See also Koyré 1965, 149.

830Snobelen 2001, 198.

831Henry 1994, 123.

832It is not obvious whether Newton, in Query 31, associates God's 'setting in order' of created matter with His 'variously associating' material Particles, or alternatively with the 'Law of Nature'-governed 'composition' of 'all material Things' out of these Particles—or both, as seems to me possible. If Newton intends only one of these two options, however, it seems likely that it would be the former rather than the latter. Consider, for instance, his insistence, following the remark that “it became him who created them to set them in order,” that “if he [i.e. this 'intelligent Agent' responsible for the 'first Creation'] did so, it's unphilosophical [...] to pretend that [the World] might arise out of a Chaos by the mere Laws of Nature; though being once form'd, it may continue by those Laws for many Ages.” Here Newton warns that if God 'set in order' his creation, then “the World” should *not* be said to have arisen “by the mere Laws of Nature,” even if these Laws are responsible for this World's 'continuation'. This suggests that Newton may associate God's 'setting in order' of the matter he has created with the *formation* of “the World” and *not* with the “continuation”, via the operation of “the Laws of Nature”, of this World “once form'd”. Either way, it seems undeniable that Newton takes the Laws of Nature, including the Principle of Gravity, to be in some way directly expressive of God's free and absolute will.

deployed the “general Laws of Nature”—including the Principle of Gravity, whatever its “unknown Causes” may be—to maintain (if not also to partly constitute) the 'order' that He 'sets' into His Creation.⁸³³ Newton, like his immediate followers, took his theory of universal gravitation to illuminate “such Principles as might work, with considering Men, for the Belief of a Deity,” and in particular the almighty *Pantokrator* of his religious faith.⁸³⁴ The Newtonian world is a world viewed in the image of God—a Christian cosmos.

⁸³³*Opticks* Query 31.

⁸³⁴See the *General Scholium* for Newton's characterization of God as 'Pantokrator' and 'Lord God', whereby he places special emphasis on God's power and 'true', all-encompassing dominion.

APPENDIX B:

Nietzsche on the Will to Truth as a Will to Nothingness and Will to Power

Nietzsche systematically distinguishes between the *conditional* will to truth of 'genuine philosophers', which he praises highly, and the *unconditional* will to truth that he associates with sublimated Judeo-Christian moral conscience, in a pejorative sense. In the case of 'genuine philosophers', recall, the impulse “to assimilate the new to the old, to simplify the manifold, and to overlook or repulse whatever is totally contradictory” is not unconditional or selfless pursuit of truth. Rather, it expresses the “spirit's power to appropriate the foreign” precisely by “retouching and falsifying the whole to suit itself,” its drive to “growth, in a word—or, more precisely, the *feeling* of growth, the feeling of increased power.”⁸³⁵ In short, the genuine philosopher's creative appropriation of reality in systematically 'falsifying' bodies of theory is for Nietzsche a mode of *artistic* representation. And here just as elsewhere, presumably, “[w]e possess *art* lest we *perish of the truth*.”⁸³⁶

Yet despite the creative freedom implied by the genuine philosophical spirit's drive to 'retouch and falsify the whole to suit itself', producing the highest forms of knowledge evidently demands the highest levels of intellectual discipline. And Nietzsche understands this perfectly well, in fact. He indicates as much, albeit somewhat obliquely, in describing the ongoing historical defeat of Christian metaphysical belief at the hand of 'scientific conscience':

You see what it was that really triumphed over the Christian god: Christian morality itself, the concept of truthfulness that was understood ever more rigorously, the father confessor's refinement of the Christian conscience, translated and sublimated into a scientific conscience, into intellectual cleanliness at any price. Looking at nature as if it were proof of the goodness and governance of a god; interpreting history in honor of some divine reason, as a continual testimony of a moral world order and ultimate moral

835 *Beyond Good and Evil* sec. 230. The context here is not explicitly cognitive or epistemological—i.e. Nietzsche is discussing a general impulse towards simplification. But he would presumably endorse the connection I am drawing.

836 *The Will to Power* sec. 822 [1888]. There is no mention of science in this context, so I am quoting quite freely.

purposes; interpreting one's own experiences as pious people have long enough interpreted theirs, as if everything were providential, a hint, designed and ordained for the sake of the salvation of the soul—that is *all over* now, that has man's conscience *against* it, that is considered indecent and dishonest by every more refined conscience—mendaciousness, feminism, weakness, and cowardice. In this severity, if anywhere, we are *good* Europeans and heirs of Europe's longest and most courageous self-overcoming.⁸³⁷

In the course of its immanent development, moralized asceticism comes to deny itself the metaphysical solace⁸³⁸ afforded by belief in Christianity's personal God, and ultimately even the residual comfort of secularized belief in the purposiveness of historical social development or the natural order more broadly. Hence Christian morality triumphs over the Christian God, as Nietzsche says, but also over itself. Modern history reveals an ongoing “self-overcoming of morality, out of truthfulness” (*EH* “Destiny” 3)⁸³⁹ reflected not only in post-Enlightenment society's growing disillusionment with attempts to view nature as 'proof of the goodness and governance of a god', or even 'as if' it were such proof, but also in a concomitant increase in societal “faith in science” (*GS* 344; *GM* III:24) and ensuing collapse into radical “nihilism” (*GM* P 5 *et passim*)⁸⁴⁰ as this secularized form of “Christian truthfulness” (*GM* III:27),⁸⁴¹ too, ultimately turns against itself.

Nietzsche's vision of Western civilizational decay into anomie and listless decadence is obviously highly critical. Nevertheless, his broader attitude towards the modern self-overcoming of 'Christian truthfulness' is profound ambivalence. For he sees this 'self-overcoming of morality out of truthfulness', including the self-overcoming of truthfulness that is its negative apotheosis, as producing a world-historical crossroads. On the one hand, the 'self-overcoming of morality

837 *The Gay Science* sec. 357.

838 On 'metaphysical solace' and the later Nietzsche's thoroughgoing skepticism thereof, see the prefatory “Attempt at a Self-Criticism” that he appended to *The Birth of Tragedy* (1772) in 1886.

839 Similarly: “The priest too knows[...]that there is no longer any 'God', any 'sinner', any 'Redeemer'—that 'free will' and 'moral world order' are lies: seriousness, the profound self-overcoming of the spirit, no longer permits anybody not to know about this” (*A* 38).

840 See also *KSA* 12:7[64], *KSA* 12:10[42], *KSA* 13:14[86], *KSA* 12:10[192], *KSA* 12:9[35], *KSA* 13:11[108].

841 More fully: “All great things bring about their own destruction through an act of self-overcoming[...]In this way Christianity *as a dogma* was destroyed by its own morality; in the same way Christianity *as morality* must now perish, too: we stand on the threshold of *this* event. After Christian truthfulness has drawn one inference after another, it must end by drawing its *most striking inference*, its inference *against* itself” (*GM* III:27). Consider also: “[...]in us the will to truth becomes conscious of itself as a *problem*[...]As the will to truth thus gains self-consciousness[...]morality will gradually *perish* now” (*GM* III:27); “It is not the victory of science that distinguishes our nineteenth century, but the victory of scientific method over science” (*KSA* 13:15[51]); “... [H]istory *must* itself resolve the problem of history, knowledge *must* turn its sting against itself” (*HL* 8).

out of truthfulness' gives rise to pandemic nihilism. This is, to put it mildly, *not good*. On the other hand, the 'self-overcoming of morality' also amounts to a destruction of slavish Judeo-Christian values, which may yet facilitate the creation of new and more 'life-affirming' values. Thus in the latter respect—but not the former—the self-overcoming of morality constitutes “that long secret work which has been saved up for the finest and most honest, also the most malicious, consciences of today” (*BGE* 32).⁸⁴² Correspondingly, intellectual conscience can be ascetic in a strictly pejorative sense, a sign of rabid self-loathing and the festering resentment of the weak towards the power of superabundant life to 'retouch' and 'falsify' the world in its own image; but it can also be a mark of natural strength and a ground of the possibility of humanity's self-overcoming in the creation of a new and higher type: the notorious '*Übermensch*'.

Admittedly, one might object that Nietzsche's apparent praise for intellectual conscience in the above passage is in fact entirely ironic. Or, relatedly, one might insist that he is implicitly distancing himself from 'good Europeans' and their 'more refined conscience', to a greater degree than I have allowed. Indeed, the plausibility of this objection seems to be reinforced by Nietzsche's harsh criticism of science in other passages. Thus, in the *Genealogy of Morals*, he capaciously diagnoses modern science and post-Kantian critical philosophy as expressing a chronic “will to self-belittlement,” such that they simply constitute a “more elusive, more spiritual, [and] more captious” expression of the perverse “ascetic ideal” underlying Christian moral conscience.⁸⁴³ Moreover, even when he does not analyze science in terms of overt 'self-

842“...the self-overcoming of morality—let this be the name for that long secret work which has been saved up for the finest and most honest, also the most malicious, consciences of today” (*BGE* 32).

843“‘The ascetic ideal has decidedly not been conquered: if anything, it became stronger, which is to say, more elusive, more spiritual, more captious, as science remorselessly detached and broke off wall upon wall, external additions that had coarsened its appearance. Does anyone really believe that the defeat of theological astronomy represented a defeat for that ideal? Has man perhaps become *less desirous* of a transcendent solution to the riddle of his existence, now that this existence appears mote arbitrary, beggarly, and dispensable in the *visible* order of things? Has the self-belittlement of man, his *will* to self-belittlement, not progressed irresistibly since Copernicus? Alas, the faith in the dignity and uniqueness of man, in his irreplaceability in the great chain of being, is a thing of the past—he has become an *animal*, literally and without reservation or qualification, he who was, according to his old faith, almost God ('child of God,' 'God-man').

Since Copernicus, man seems to have got himself on an inclined plane—now he is slipping faster and faster away from the center into—what? into nothingness? into a '*penetrating* sense of his nothingness?') Very well! hasn't this been the straightest route to—the *old ideal*?

All science (and by no means only astronomy, on the humiliating and degrading effect of which Kant made the noteworthy confession: 'it destroys my importance' . . .), all science, natural as well as *unnatural*—which is what I call the self-critique of knowledge—has at present the object of dissuading man from his former respect for himself, as if this had been nothing but a piece of bizarre conceit. One might even say that its own pride, its own austere form of stoical ataraxy, consists in sustaining this hard-won *self-contempt* of man as his ultimate and most serious claim to self-respect (and quite rightly, indeed: for he that despises is always one who 'has not forgotten how to respect' . . .) Is this really to *work against* the ascetic ideal?” (*GM* III:25)

Compare: “The expulsion of Man from his self-assumed position at the centre of Nature owes much to the

belittlement' or active self-abnegation, Nietzsche sometimes takes it to reflect a more sedated form of nihilistic despair—'passive' rather than 'active' nihilism, as he might put it.⁸⁴⁴ Such is the case, for instance, in his characterization of “really scientific men” in whom the “drive for knowledge” functions as a “small, independent clockwork that, once well wound, works on vigorously *without* any essential participation from all the other drives of the scholar”:

The real 'interests' of the scholar therefore lie usually somewhere else—say, in his family, or in making money, or in politics. Indeed, it is almost a matter of total indifference whether his little machine is placed at this or that spot in science, and whether the 'promising' young worker turns himself into a good philologist or an expert on fungi or a chemist: it does not *characterize* him that he becomes this or that. In the philosopher, conversely, there is nothing whatever that is impersonal; and above all, his morality bears decided and decisive witness to *who he is*—that is, in what order of rank the innermost drives of his nature stand in relation to each other.⁸⁴⁵

Nietzsche here renders palpable the quiet ennui of the 'really scientific man' in his scholarly capacity.⁸⁴⁶ In so doing, moreover, he indicates its essential spiritual kinship with the enervation of the “*undangerous*” and mediocre “*bonhomme*” whose status as modern ethical ideal is a “logical consequence of slave morality,”⁸⁴⁷ and with the shallow bourgeois contentment of the decadent “last man” decried by the Nietzschean Zarathustra.⁸⁴⁸

Copernican principle that we do not occupy a privileged position in the Universe” (Barrow and Tipler 1986, 1; quoted—critically—in Roush 2003, 29).

844“Nihilism. It is *ambiguous*: A. Nihilism as a sign of increased power of the spirit: as *active* nihilism. B. Nihilism as decline and recession of the power of the spirit: as *passive* nihilism” (*WP* 22); “[Nihilism] can be a sign of strength: the spirit may have grown so strong that previous goals ('convictions,' articles of faith) have become incommensurate (for a faith generally expresses the constraint of conditions of existence, submission to the authority of circumstances under which one flourishes, grows, gains power). Or a sign of the lack of strength to posit for oneself, productively, a goal, a why, a faith. It reaches its maximum of relative strength as a violent force of destruction—as active nihilism. Its opposite: the weary nihilism that no longer attacks; its most famous form, Buddhism; a passive nihilism, a sign of weakness. The strength of the spirit may be worn out, exhausted, so that previous goals and values have become incommensurate and no longer are believed; so that the synthesis of values and goals (on which every strong culture rests) dissolves and the individual values war against each other: disintegration—and whatever refreshes, heals, calms, numbs emerges into the foreground in various disguises, religious or moral, or political, or aesthetic, etc.” (*WP* 23).

845*Beyond Good and Evil* sec. 6.

846Here also consider: “The worst and most dangerous thing of which scholars are capable comes from their sense of the mediocrity of their own type—from that Jesuitism of mediocrity which instinctively works at the annihilation of the uncommon man and tries to break every bent bow or, preferably, to unbend it” (*BGE* 206).

847“The opposition [between master morality and slave morality] reaches its climax when, as a logical consequence of slave morality, a touch of disdain is associated also with the 'good' of this morality—this may be slight and benevolent—because the good human being has to be *undangerous* in the slaves' way of thinking: he is good-natured, easy to deceive, a little stupid perhaps, *un bonhomme*. Wherever slave morality becomes preponderant, language tends to bring the words 'good' and 'stupid' closer together” (*Beyond Good and Evil* sec. 260).

848“I say unto you: one must still have chaos in oneself to be able to give birth to a dancing star. I say unto you:

In many other cases, however, Nietzsche expresses perfectly clear-cut esteem for intellectual conscience. Representatively:

[...]the great majority of people lacks an intellectual conscience. Indeed, it has often seemed to me as if anyone calling for an intellectual conscience were as lonely in the most densely populated cities as if he were in a desert. [...]I mean: the great majority of people does not consider it contemptible to believe this or that and to live accordingly, without first having given themselves an account of the final and most certain reasons pro and con, and without even troubling themselves about such reasons afterward: the most gifted men and the noblest women still belong to this 'great majority.' But what is goodheartedness, refinement, or genius to me, when the person who has these virtues tolerates slack feelings in his faith and judgments and when he does not account the desire for certainty as his inmost craving and deepest distress—as that which separates the higher human beings from the lower.

Among some pious people I found a hatred of reason and was well disposed to them for that; for this at least betrayed their bad intellectual conscience. But to stand in the midst of this *rerum concordia discors* ['discordant concord of things'] and of this whole marvelous uncertainty and rich ambiguity of existence without questioning, without trembling with the craving [*Begierde*] and the joy [*Lust*]⁸⁴⁹ of such questioning, without at least hating the person who questions, perhaps even finding him faintly amusing—that is what I feel to be contemptible, and this is the feeling for which I

you still have chaos in yourselves.

Alas, the time is coming when man will no longer give birth to a star. Alas, the time of the most despicable man is coming, he that is no longer able to despise himself. Behold, I show you the *last man*.

'What is love? What is creation? What longing? What is a star?' Thus asks the last man, and he blinks.

The earth has become small, and on it hops the last man, who makes everything small. His race is as ineradicable as the flea-beetle; the last man lives longest.

'We have invented happiness,' say the last men, and they blink. They have left the regions where it was hard to live, for one needs warmth. One still loves one's neighbor and rubs against him, for one needs warmth.

Becoming sick and harboring suspicion are sinful to them: one proceeds carefully. A fool, whoever still stumbles over stones or human beings! A little poison now and then: that makes for agreeable dreams. And much poison in the end, for an agreeable death.

One still works, for work is a form of entertainment. But one is careful lest the entertainment be too harrowing. One no longer becomes poor or rich: both require too much exertion. Who still wants to rule? Who obey? Both require too much exertion.

No shepherd and one herd! Everybody wants the same, everybody is the same: whoever feels different goes voluntarily into a madhouse.

'Formerly, all the world was mad,' say the most refined, and they blink.

One is clever and knows everything that has ever happened: so there is no end of derision. One still quarrels, but one is soon reconciled—else it might spoil the digestion.

One has one's little pleasure for the day and one's little pleasure for the night: but one has a regard for health. 'We have invented happiness,' say the last men, and they blink" (*Thus Spoke Zarathustra*, "Zarathustra's Prologue" 5).

849Kaufmann translates the German *Lust* as 'rapture' rather than 'joy'. The rest of the translation is his.

look first in everybody.⁸⁵⁰

Here there is no reason to doubt the authenticity of Nietzsche's professed contempt for facile self-certainty, or the passion underwriting his depiction of 'craving' for and 'joy' in the questioning demanded by the 'whole marvelous uncertainty and rich ambiguity of existence'. Nor is Nietzsche's explicit respect for intellectual conscience in such passages particularly hard to understand, on his own terms. Clearly, intellectual conscience can be an expression of strength, courage, inhuman severity, joyful play amidst the static forms of lesser thought, and noble disdain for the spiritual impoverishment that all too often underlies incuriosity and intellectual superficiality—not simply a compulsion to pursue the truth dispassionately even in cases where it may be harsh, but rather an impassioned taste precisely for the harshest truths and the distinct savor of their brutal impersonality, a drive to stand firm against their crushing weight and ultimately to master it, in a test of one's own strength and as a stimulus to increasing power.

On the other hand, though, intellectual conscience can also be an expression of sickly asceticism. Intellectual conscience *can* be rooted in a self-abnegating drive to escape from any and all perspectival limitations in attaining a fully 'disinterested' vision of reality—a 'God's-eye' view of the world that is at root a chimerical view from Nowhere. (A 'view from Nowhere' is just a 'view from Nothing', or an 'appearance' of unreality; but genuine views are appearances of reality.) Nietzsche's seemingly self-contradictory remarks concerning the value of intellectual conscience thus simply indicate his sensitivity to its multivalence, as well as his recognition that the healthy intellectual conscience of 'genuine philosophers' is genealogically intertwined with the sickly "unconditional will to truth" that just recapitulates the "concealed will to death" of Christian moral conscience.⁸⁵¹ In the case of intellectual conscience as that of punishment, then, one must carefully distinguish between "that in it which is relatively *enduring*, the custom, the act, the 'drama,' a certain strict sequence of procedures" and "that in it which is *fluid*, the meaning, the purpose, the expectation associated with the performance of such procedures."⁸⁵²

But while Nietzsche's distinction between strong ('life-affirming') and weak ('life-denying') forms of intellectual conscience is surely intuitive, in the abstract, its concrete

850GS 2. See also GS 355.

851GS 344.

852On the *Genealogy of Morals*, Essay II sec. 13. Nietzsche is here talking about punishment, *not* intellectual conscience; I am simply suggesting that certain general features of his analysis of punishment plausibly apply to the case at hand.

application may seem hopelessly contentious. For instance, Nietzsche presents Copernican astronomical theory as exemplary of the way in which science “has at present the object of dissuading man from his former respect for himself, as if this had been nothing but a piece of bizarre conceit” (such that “[s]ince Copernicus[...man] is slipping faster and faster away from the center into—what? into nothingness? into a '*penetrating* sense of his nothingness'?”).⁸⁵³ But it is perhaps not clear that Nietzsche's own philosophy is any less expressive of a 'will to self-belittlement', or any more expressive of a drive to 'growth' and 'the feeling of increased power'.⁸⁵⁴ After all, it is far from obvious that Nietzsche avoids 'self-belittlement' in his own vision of a God-less world, in which the mass of mankind has overcome the natural stupidity of its traditional religious faith only by virtue of its perversely hypertrophied impulse to self-denial.

Moreover, Nietzsche's interpretation of the 'self-belittling' transition from geocentric to heliocentric accounts of the solar system is somewhat glib, if not just essentially incorrect.⁸⁵⁵ The rise of Copernican astronomy evidently constituted a challenge to the doctrinal authority of the Church more than an immediate threat to broader societal belief in the existence, personality, and beneficence of the Christian God, the unique moral and rational dignity of human beings, or humanity's God-given dominion over nature. This is not to deny that the development of modern physical theory is plausibly connected to historical processes of secularization and correlative growth in antipathy towards the perceived anthropocentrism of traditional religious metaphysics and mythology. It is, however, to demand a more substantive account of this putative connection and its significance relative to Nietzschean ethical ideals.

This example also underscores the ambiguity of the relationship between Nietzsche's embrace of (life-affirming) intellectual conscience and his insistence that, in the knowledge of

⁸⁵³*GM* III: 25.

⁸⁵⁴Even on Nietzsche's own terms, this situation is complicated by the fact that the ascetic 'will to nothingness', despite being “an aversion to life, a rebellion against the most fundamental presuppositions of life” (*GM* III: 28), is expressive of the universal will to power—i.e. the historical triumph of the 'ascetic ideal' demonstrates that humankind would “rather will *nothingness* than *not* will” (*GM* III: 1), such that when confronted with a “lack of external enemies and resistances and forcibly confined to the oppressive narrowness and punctiliousness of custom,” man of internal necessity “impatiently lacerated, persecuted, gnawed at, assaulted, and maltreated himself” (*GM* II:16).

⁸⁵⁵Koyré observes that “[i]t is not always, or perhaps not sufficiently, appreciated that by placing the Sun at the centre of the Universe in virtue of its dignity, Copernicus returned to the Pythagorean conception and completely overthrew the hierarchy of positions in the ancient and medieval Cosmos, in which the central position was not the most honourable, but, on the contrary, the most unworthy. It was, in effect, the *lowest*, and consequently appropriate to the Earth's imperfection. Perfection was located above in the celestial vault, above which were 'the heavens' (Paradise), whilst Hell was deservedly placed beneath the surface of the Earth” (Koyré 1973, 114-115 n.24).

'genuine philosophers', the 'spirit' creatively 'retouches' and 'falsifies' the 'whole' so as to 'suit itself'. For if modern astronomical theory is 'self-belittling' because it systematically undermines the symbolically-potent pride of place humanity often enjoys in traditional mythological and religious metaphysics—revealing Earth to be just one among a handful of planets orbiting a relatively small star at the edge of an apparently unremarkable galaxy (and so on)—, do such mythological and religious modes of representation exemplify the kind of 'retouching and falsifying [of] the whole to suit itself' that Nietzsche associates with 'genuine philosophers'? Either way, finally, how could 'intellectual conscience' manifest in astronomical theorizing except as a drive to objectivity that is inherently opposed to this kind of self-expressive 'retouching and falsifying', and hence as a 'concealed will to death' or principle hostile to 'life'?

How can scientific or humanistic inquiry satisfy the demands of intellectual conscience and yet be truly artful? How is genuinely Nietzschean science possible? Is it actually possible? And even if it is possible, is Nietzschean science truly valuable? Should science be a 'retouching and falsifying' in the image of creative theorists' superabundant power? Or should it be less 'self-expressive'? Can science be more objective than Nietzsche's ideal, without collapsing into moralized asceticism? How is a forceful yet objective science possible? Indeed,—is it possible?

APPENDIX C:

Feuerbach and Marx as Exoteric Christians (On God in 'Materialism')

Like Marx more famously in his wake, Feuerbach argues that consciousness of God is simply an alienated mode of human self-consciousness:

Religion, at least the Christian, is the relation of man to himself, or more correctly to his own nature (*i.e.*, his subjective nature); but a relation to it, viewed as a nature apart from his own. The divine being is nothing else than the human being, or, rather, the human nature purified, freed from the limits of the individual man, made objective—*i.e.*, contemplated and revered as another, a distinct being. All the attributes of the divine nature are, therefore, attributes of the human nature.⁸⁵⁶

Of course, Feuerbach acknowledges, there is an obvious sense in which “God is not what man is” and “man is not what God is”: man is finite, imperfect, temporal, weak, and sinful; whereas God is infinite, perfect, eternal, almighty, and holy.⁸⁵⁷ Yet despite this apparent difference, God's attributes are ultimately just “*our* positive, essential qualities, *our* realities,” projected beyond all actual human limitations by our understanding in the fullest expression of its abstractive power.⁸⁵⁸ God is nothing more than humanity “purified” of all features of real human existence that the religious believer sees as evils or imperfections.⁸⁵⁹ “What man praises and approves, that is God to him; what he blames, condemns, [—‘what oppresses him, obstructs him, affects him repulsively’⁸⁶⁰—]is the non-divine.”⁸⁶¹ God is “the nature of man made objective,” created

856Feuerbach 1957, 14.

857Feuerbach 1957, 33.

858Feuerbach 1957, 38-9, emphasis added. Consider also: “Where Nature ceases, God beings.’ because God is the *ne plus ultra*, the last limit of abstraction. That from which I can no longer abstract is God, the last thought which I am capable of grasping—the last, *i.e.*, the highest” (Feuerbach 1957, 98).

859“What man praises and approves, that is God to him; what he blames, condemns, is the non-divine” (Feuerbach 1957, 97); “As God is nothing else than the nature of man purified from that which to the human individual appears, whether in feeling or thought, a limitation, an evil ...” (Feuerbach 1957, 181).

860Feuerbach 1957, 98.

861Feuerbach 1967, 97.

“unconsciously and involuntarily” by humankind in its own image in an act of displaced self-exaltation.⁸⁶²

The Christian God, in particular, is the “essence of the species,” the totality of all human perfections “freed from all the limits which exist in the consciousness and feeling of the individual,” paradoxically conceived of as immediately identical with “individual, personal being”.⁸⁶³ Christianity distinctively presupposes that “the individual by himself is a perfect being, is by himself the adequate presentation or existence of the species.”⁸⁶⁴ And so the God of Christianity is just the perfection of the human species made present to itself under the alienated guise of God's absolute self-standing individuality.⁸⁶⁵ The Christian conception of God reflects man's desire to individually achieve a distinctively human mode of being that is in fact realizable (to the extent that it is in fact realizable) only by the social whole.⁸⁶⁶

862Feuerbach 1957, 118.

863“With the Christians God is nothing else than the immediate unity of species and individuality, of the universal and individual being. God is the idea of the species as an individual[...]Essence and existence are in God identical; which means nothing else than that he is the idea, the essence of the species, conceived immediately as an existence, an individual” (Feuerbach 1957, 153); “...the Christians are distinguished from the heathens in this, that they immediately identify the individual with the species—that with them the individual has the significance of the species, the individual by himself as held to be the perfect representative of the species—that they deify the individual, make him the absolute being” (Feuerbach 1957, 154).

864Feuerbach 1957, 155.

865“All divine attributes, all the attributes which make God God, are attributes of the species—attributes which in the individual are limited, but the limits of which are abolished in the essence of the species, and even in its existence, in so far as it has its complete existence only in all men taken together” (Feuerbach 1957, 152); “Christ is the omnipotence of subjectivity, the heart released from all the bonds and laws of Nature, the soul excluding the world, and concentrated only on itself, the reality of all the heart's wishes, the Easter festival of the heart, the ascent to heaven of the imagination:—Christ therefore is the distinction of Christianity from heathenism” (Feuerbach 1957, 150); “... Christianity, thus, from exaggerated subjectivity, knows nothing of the species ...” (Feuerbach 1957, 159); “The individual man attains his end by himself alone; he attains it in God,—God is himself the attained goal, the realised highest aim of humanity; but God is present to each individual separately. God only is the want of the Christian; others, the human race, the world, are not necessary to him; he is not the inward need of others. God fills to me the place of the species, of my fellow-man” (Feuerbach 1957, 160); “Individuality or personality is agreeable to [God], but only as unencumbered by objective forces; hence, he includes individuality also, but pure, absolutely subjective individuality” (Feuerbach 1957, 182-3); “the Divine Being is the subjective human being in his absolute freedom and unlimitedness” (184); “The divine being is the pure subjectivity of man, freed from all else, from everything objective, having relation only to itself, enjoying only itself, reverencing only itself” (98); “...egoism conceived as absolute (God is the absolute Self)...” (82).

866Consider: “...the species, which as a species, as universal being, as the totality of all perfections, of all attributes or realities, freed from all the limits which exist in the consciousness and feeling of the individual...” (Feuerbach 1957, 153); “In isolation human power is limited, in combination it is infinite. The knowledge of a single man is limited, but reason, science, is unlimited, for it is a common act of mankind[...]Wit, acumen, imagination, feeling as distinguished from sensation, reason as a subjective faculty,—all these so-called powers of the soul are powers of humanity, not of man as an individual; they are products of culture, products of human society” (Feuerbach 1957, 83); “[...]the idea of the species becomes the idea of God, who again is himself an individual being, but is distinguished from human individuals in this, that he possesses their qualities according to the measure of the species” (Feuerbach 1957, 195).

This individualistic impulse is given its “most unequivocal expression”, on Feuerbach's view, in the Christian doctrine of divine Incarnation.⁸⁶⁷ God is a “perfect universal being”, absolutely free from the limitations of individual existence; but the same God is also Christ, the “ideal of humanity become existent” in one person—one “pure, heavenly, sinless man.”⁸⁶⁸ In the idea of Christ, the human “individual by himself” is quite literally “held to be the perfect representative of the species.”⁸⁶⁹ Correlatively, in Christian consciousness man's salvation lies not in his fellow man or in the natural world, but only in God—the “realised highest aim of humanity” that is yet “present to each individual separately”⁸⁷⁰; the one, unconditioned, personal God in whom the essence of the species takes the form of individual subjectivity, and who moreover literally incarnates himself as an individual man. In Christian consciousness, essential humanity is figured not in utopic images of enlightened society or culture, but rather in God's oneness, consciousness, unlimited freedom, and absolute will; in the availability to all of individual salvation through personal relationship to God; and, most notably, in Christ's realization of moral perfection as a self-subsistent individual human being—in spite of, and even selflessly suffering as man from, others' sinful failure to reciprocate his universal love. Thus in Christian consciousness man subsumes the anti-egoistic 'heathen' drive to value universal human nature above his own particular identity under his egoistic drive to assert himself as an autonomous individual.

(Feuerbach here makes an allowance for “the Christianity of the present day, which has incorporated with itself the culture of heathenism” in recovering a degree of the ancients' evaluative subordination of the individual to the species.⁸⁷¹ Although he does not further specify the sort of view he has in mind, such rapprochement between 'Christian' hyper-individualism and 'heathen' anti-individualism is plausibly evident in the Hegelian theory of historical and conceptual interdependence between the development of autonomous individuality, or self-determined particular identity, and the formation of social structures that concretely ground the universal identity of all such particularized individuals as equal moral subjects and right-bearing persons. In this respect, Hegel anticipates—and of course likely inspires—Feuerbach's assertion that although “[d]oubtless the essence of man is *one*,” the “real existence” of this unitary essence

867Feuerbach 1957, 154.

868Feuerbach 1957, 154-5.

869Feuerbach 1957, 154.

870Feuerbach 1957, 160.

871Feuerbach 1957, 151-2.

is “an infinite, reciprocally compensating variety” among qualitatively differentiated individuals.⁸⁷²)

In turn, Feuerbach characterizes the “historical progress of religion” as the process of mankind re-appropriating this alienated mode of self-consciousness, such that “what by an earlier religion was regarded as objective, is now recognised as subjective; that is, what was formerly contemplated and worshipped as God is now perceived to be something *human*.” Therefore, he concludes, every true “advance in religion” amounts to a higher level of self-knowledge on the part of humanity⁸⁷³—i.e. the species, “in which alone” lies “the redemption, the justification, the reconciliation and cure of the sins and deficiencies of the individual”.⁸⁷⁴ This collective self-knowledge culminates, finally, in the realization of a universal moral community, structured not by faith in or love of God, but rather by “the highest and first law” of the immediate love of all human beings for one another as fellow “rational and loving being[s]”.⁸⁷⁵

According to the Feuerbachian theory of religion, in short, belief in God is a “childlike”⁸⁷⁶ state that should erode as humankind comes to understand that God is simply the hypostatization of its own “infinite nature,”⁸⁷⁷ which is an essentially social nature realizable only in universal moral community. Marx broadly agrees, claiming that religion is “man's self-consciousness and

872Feuerbach 1957, 158.

873Ibid., 13

874Ibid., 13

875Feuerbach 1957, 268; 270-271. Feuerbach moreover takes love and rationality to be interrelated: “Only where reason rules, does universal love rule; reason is itself nothing else than universal love” (Feuerbach 1957, 257). Relatedly: “Christian love is already signalized as a particular, limited love, by the very epithet, Christian. But love is in its nature universal. So long as Christian love does not renounce its qualification of Christian, does not make love, simply, its highest law, so long is it a love which is injurious to the sense of truth, for the very office of love is to abolish the distinction between Christianity and so-called heathenism;—so long is it a love which by its particularity is in contradiction with the nature of love, an abnormal, loveless love, which has therefore long been justly an object of sarcasm. True love is sufficient to itself; it needs no special title, no authority. Love is the universal law of intelligence and Nature;—it is nothing else than the realization of the unity of the species through the medium of moral sentiment. To found this love on the name of a person, is only possible by the association of superstitious ideas, either of a religious or speculative character. For with superstition is always associated particularism, fanaticism. Love can only be founded on the unity of the species, the unity of intelligence—on the nature of mankind; then only is it a well-grounded love, safe in its principle, guaranteed, free, for it is fed by the original source of love, out of which the love of Christ himself arose. The love of Christ himself arose. The love of Christ was itself a derived love. He loves us not out of himself, by virtue of his own authority, but by virtue of our common human nature” (Feuerbach 1957, 265-6)

876Feuerbach 1957, 13.

877Feuerbach 1957, 2. “There is no other spirit, [...] no other intelligence which man can believe in or conceive than that intelligence which enlightens him, which is active in him. The 'infinite spirit,' in distinction from the finite, is[...]nothing else than the intelligence disengaged from the limits of individuality and corporeality,—for individuality and corporeality are inseparable,—intelligence posited in and by itself. God, said the schoolmen, the Christian fathers, and long before them the heathen philosophers,—God is immaterial essence, intelligence, spirit, pure understanding” (Feuerbach 1957, 35).

self-awareness so long as he has not found himself or has lost himself again,⁸⁷⁸ and concluding that the “criticism of religion” comes to an end with “the doctrine that *man is the supreme being for man*,” along with a corresponding “*categorical imperative to overthrow all those conditions in which man is an abased, enslaved, abandoned, contemptible being*.”⁸⁷⁹

But Marx objects that Feuerbach is inadequately responsive to the significance of “revolutionary” activity in which we bring the world into 'objective' alignment with our otherwise purely 'subjective' essence.⁸⁸⁰ In thus “regarding the theoretical attitude as the only genuinely human attitude,” Marx suggests, Feuerbach fails to grasp the necessary role to be played by “practice”—i.e. “*human, sensuous activity*,” presumably including political, economic, and technological alterations to existing forces and relations of production—in overcoming the alienated “duplication of the world into a religious, imaginary world and a real one.”⁸⁸¹ Even to the extent that Feuerbach succeeds in “resolving the religious world into its secular basis,”⁸⁸² he “overlooks the fact” that upon completing this philosophical critique still “the chief work remains to be done.”⁸⁸³

(While there is a kernel of genuine insight in Marx's criticism, it should be noted that Feuerbach, too, posits a link between theoretical self-alienation in religious consciousness and forms of concrete social deprivation that evidently require practical redress. In his words: “[t]he

878Marx 1978, 53. As Eric Fromm explains, “[f]or Marx, as for Hegel, the concept of alienation is based on the distinction between existence and essence, on the fact that man's existence is alienated from his essence, that in reality he is not what he potentially is or, to put it differently, that *he is not what he ought to be, and that he ought to be that which he could be*” (Fromm 1961, 47). Similarly: “The distortion in what Marx takes to be human nature is generally referred to in language which suggests that an essential tie has been cut in the middle. Man is spoken of as being separated from his work (he plays no part in deciding what to do or how to do it) – a break between the individual and his life activity. Man is said to be separated from his own products (he has no control over what he makes or what becomes of it afterwards) – a break between the individual and the material world. He is also said to be separated from his fellow man (competition and class hostility has || rendered most forms of cooperation impossible) – a break between man and man. In each instance, a relation that distinguishes the human species has disappeared and its constituent elements have been reorganized to appear as something else. What is left of the individual after all these cleavages have occurred is a mere rump, a lowest common denominator attained by lopping off all those qualities on which is based his claim to recognition as a man. Thus denuded, the alienated person has become an 'abstraction'[...]Alienated man is an abstraction because he has lost touch with all human specificity” (Ollman 1976, 134).

879Marx 1978, 60.

880Marx 1978, 145: “Feuerbach, consequently, does not see that the 'religious sentiment' is itself a social product, and that the abstract individual whom he analyses belongs in reality to a particular form of society.”

881Marx 1978, 143-4.

882As Feuerbach himself puts it: “it is precisely our task to show that theology is nothing else than an unconscious, esoteric pathology, anthropology, and psychology, and that therefore real anthropology, real pathology, and real psychology have far more claim to the name of theology than has theology itself, because this is nothing more than an imaginary psychology and anthropology” (Feuerbach 1957, 88-9).

883Marx 1978, 144.

more empty life is, the fuller, the more concrete is God. The impoverishing of the real world and the enriching of God is one act. Only the poor man has a rich God. God springs out of the feeling of a want; what man is in need of, whether this be a definite and therefore conscious, or an unconscious need,—that is God.”⁸⁸⁴ Similarly, despite characterizing the “turning-point of history” in seemingly one-sidedly contemplative terms as “open confession, that the consciousness of God is nothing else than the consciousness of the species,”⁸⁸⁵ Feuerbach quickly proceeds to advocate that man be not just “declared” but moreover “constituted” the ‘first’ in relation to God’s ‘second’,⁸⁸⁶ and to insist that the love of all human beings for one another must be “*practically also*” the “highest and first law”.⁸⁸⁷)

By self-intended contrast with Feuerbach, Marx insists that alienated religious consciousness is rooted in humankind’s chronic state of practical isolation from the exercise of essential human capacities, including capacities for universal social solidarity, within a sequence of historical modes of production up to and including global capitalism. Religious alienation stems from “cleavage and self-contradictions” within the “secular basis” of the religious world, and can be resolved only if this secular basis is not simply “criticised in theory” but moreover “revolutionised in practice.”⁸⁸⁸ In other words, Marx argues that the conflict between the appearance and the reality of the contemporary human condition cannot be resolved—which he, like Feuerbach, wishes it to be⁸⁸⁹—except through a concrete process of progressive social change, namely the collective development and expression of essential human powers, achieved by means of humankind’s distinctive capacity to produce the objects of its own essential needs and thereby to determine the form of its own “mode of life”.⁸⁹⁰ Whereas the mere “animal is

884Feuerbach 1957, 73.

885Feuerbach 1957, 270.

886Relatedly: “To [religious speculation] God is the first, man the second. Thus it inverts the natural order of things.

In reality, the first is man, the second the nature of man made objective, namely, God” (Feuerbach 1957, 118).

887Feuerbach 1957, 270-271, emphasis added.

888Marx 1978, 144.

889“It is superficial to read Marx as expressing an activist’s impatience with the analytical response to illusion. He is not merely announcing his unwillingness to rest content with intellectual victories. It is false that whereas Feuerbach’s concern is theory, his is practice. Their primary interest is the same. Both want to suppress illusion, and Marx’s complaint is that theory alone will not do so.[...]The illusions occupying both thinkers survive theoretical exposé because theory does not cure the conditions which produce them. And that is because they are not, in the first instance, errors of thought, but distortions in the world, which theory is impotent to rectify. Marx thought social conditions must themselves be conflicted to be capable of generating a conflict between reality and appearance. And as long as society remains riven, the rift between reality and appearance will persist too” (Cohen 2001, 410).

890“Men can be distinguished from animals by consciousness, by religion or by anything else you like. They themselves begin to distinguish themselves from animals as soon as they begin to *produce* their means of subsistence, a step which is conditioned by their physical organisation. By producing their means of subsistence

immediately identical with its life-activity,” man is uniquely capable of autonomy, of “mak[ing] his life-activity itself the object of his will and consciousness.”⁸⁹¹ The “true natural history of man” is precisely the protracted moral struggle of man to thus realize himself as a “species being”⁸⁹²—a “*universal* and therefore free,”⁸⁹³ essentially human⁸⁹⁴ being.

On Marx's view, in sum, alienated religious consciousness can be overcome only insofar as historical social development fosters “spontaneous activity, free activity,” and in particular the “practical activity” whereby man collectively “duplicates himself not only, as in consciousness, intellectually, but also actively, in reality.” Through such an autonomous “working-up of the objective world,” man concretely “contemplates himself in a world that he has created.”⁸⁹⁵ Marx's utopic vision of communism is therefore one in which an originally alien natural world has been supplanted by a “world of man's essential powers,” such that “all *objects* become for him the *objectification* of himself, become objects which confirm and realize *his* individuality.”⁸⁹⁶ Man realizes his essential identity as a “universal and therefore free being” by thus expanding the “sphere of inorganic nature on which he lives” to the point where he “makes all nature his *inorganic* body.”⁸⁹⁷ In the communist utopia there is no practical gulf between man and nature—nor, on Marx's view correlatively, is man estranged from his own productive power or his fellow man—and as a result there is simply no cause for humanity to worship a personal God onto which it has projected its own essential “species character” of “free, conscious

men are indirectly producing their actual material life.[...]This mode of production must not be considered simply as being the reproduction of the physical existence of individuals. Rather, it is a definite form of activity of these individuals, a definite form of expressing their life, a definite *mode of life* on their part. As individuals express their life, so they are. What they are, therefore, coincides with their production, both with *what* they produce and with *how* they produce. The nature of individuals thus depends on the material conditions determining their production” (Marx 1978, 150); “The force of life [for Marx] is fertility. The living organism is not exhausted when it has provided for its own reproduction, and its 'surplus' lies in its potential multiplication. Marx's consistent naturalism discovered 'labor power' as the specifically human mode of the life force which is as capable of creating a 'surplus' as nature herself. Since he was almost exclusively interested in this process itself, the process of the 'productive forces of society,' in whose life, as in the life of every animal species, production and consumption always strike a balance, the question of a separate existence of worldly things, whose durability will survive and withstand the devouring processes of life, does not occur to him at all. From the viewpoint of the life of the species, all activities indeed find their common denominator in laboring” (Arendt 1958, 108). See also Marx 1940.

891Marx 1978, 76.

892Marx 1978, 116-117. See also Ollman 1976, 95-99.

893Marx 1978, 75.

894“*The real*, active orientation of man to himself as a species being, or his manifestation as a real species being (i.e., as a human being), is only possible by his really bringing out of himself all the *powers* that are his as the *species* man ...” (Marx 1978, 112).

895Marx 1978, 76-7.

896Marx 1978, 88.

897Marx 1978, 75.

activity.”⁸⁹⁸ Here Christian moral paradise has become worldly—natural, objective, Godless. In Marx's communism universal human freedom in autonomous productive activity, our species being, is concretely realized in social praxis.

Marx's communism is thus a secular humanistic *heaven on earth*, in a fairly strict sense. A world where not God but rather man himself, man's species life itself, is the supreme being for man. A world of universal freedom concretely grounded in a system of humanized social relations, economic and political institutions, and technological developments in productive capacity. A world in which individual man constitutes himself, for himself, as a human being—a being whose life-activity is free, conscious, and universal—by producing the objects of his own and his fellow man's essential needs. A world in which the human species realizes itself as such in appropriating the natural world as a field of outlet for essential human powers. A world in which all of nature is the body of man, the essential object of a collective human subject. A world of secularized Judeo-Christian morality. For as Feuerbach earlier noted, “Love is only the exoteric, faith the esoteric doctrine of Christianity; love is only the *morality*, faith the *religion* of the Christian religion.”⁸⁹⁹ Marx retains total faith in the Christian doctrine of love: the moral (if not also moralistic) vision of a world remade in the image of shared humanity. Like Feuerbach before him, then, Marx is thus essentially a Christian moralist—a purely exoteric Christian.

⁸⁹⁸“The whole character of a species—its species character—is contained in the character of its life-activity; and free, conscious activity is man's species character” (Marx 1978, 76); “... in degrading spontaneous activity, free activity, to a means, estranged labour makes man's species life a means to his physical existence” (ibid, 76-7).

⁸⁹⁹Feuerbach 1957, 263. Similarly: ““It is the species which infuses love into me. A loving heart is the heart of the species throbbing in the individual. Thus Christ, as the consciousness of love, is the consciousness of the species. We are all one in Christ. He therefore who loves man for the sake of man, who rises to the love of the species, to universal love, adequate to the nature of the species, he is a Christian, is Christ himself. He does what Christ did, what made Christ Christ. Thus, where there arises the consciousness of the species as a species, the idea of humanity as a whole, Christ disappears, without, however, his true nature disappearing; for he was the substitute for the consciousness of the species, the image under which it was made present to the people, and became the law of the popular life” (Feuerbach 1957, 269).

APPENDIX D:

Marxist-Hegelian Dialectics as a Moralized Denial of Natural Hierarchy

From one important vantage point, for a given thing to exert force on something else is for it to *manifest its nature through this other thing*, which it thereby *determines* as its *object*. Marx offers an example that is here illuminating, in part because he partially misconstrues: “[t]he sun is the *object* of the plant—an indispensable object to it, confirming its life—just as the plant is an object of the sun, being an *expression* of the life-awakening power of the sun, of the sun's *objective* essential power” (“Critique of the Hegelian Dialectic and Philosophy as a Whole”).⁹⁰⁰ Marx thus presents the relationship between the sun and the plant as importantly symmetric: each is the 'object' of the other, or (as Marx previously elaborates) that in which the other's essential 'need' achieves satisfaction.

Yet there is an intuitive sense in which the plant is an object of the sun in a way that the sun is not an object of the plant. In short, the plant *needs* the sun in a way that the sun *does not need* the plant—causally speaking, certainly, but also perhaps in an evaluatively richer sense. While the plant (or, perhaps better, the plant's energy and growth) is evidently an 'expression' of the sun's 'life-awakening power', the sun is not as aptly characterized as an 'expression' of the plant's power. And, indeed, Marx claims not that the sun is an 'expression' of the plant's power (or its 'life'), but only that the sun 'confirms' the plant's life. But in what, exactly, consists this putative distinction between being an 'expression' of something's 'life-affirming power' and being that in which something's 'life' is 'confirmed'? And how does this distinction relate to the accounts of force and power that I am advancing? Marx's description demands clarification and metaphysical critique, albeit in a way responsive to its intuitive poetic force.

To this end, it is helpful first to consider the broader context in which Marx describes what he sees as the sun and plant's mutual objectification. Namely, he is concerned to characterize 'natural beings', including *human* beings, in distinction to 'nullity' or 'un-being':

⁹⁰⁰Marx and Engels 1978, 116.

Man is directly a *natural being*. As a natural being and as a living natural being he is on the one hand furnished with *natural powers of life*—he is an *active* natural being. These forces exist in him as tendencies and abilities—as *impulses*. On the other hand, as a natural, corporeal, sensuous, objective being he is a *suffering*, conditioned and limited creature, like animals and plants. That is to say, the *objects* of his impulses exist outside him, as *objects* independent of him; yet these objects are *objects* of his *need*—essential *objects*, indispensable to the manifestation and confirmation of his essential powers. To say that man is a *corporeal*, living, real, sensuous, objective being full of natural vigor is to say that he has *real, sensuous, objects* as the objects of his being or of his life, or that he can only *express* his life in real, sensuous objects. To be objective, natural and sensuous, and at the same time to have object, nature and sense outside oneself, or oneself to be object, nature and sense for a third party, is one and the same thing. *Hunger* is a natural *need*; it therefore needs a *nature* outside itself, an *object* outside itself, in order to satisfy itself, to be stilled. Hunger is an acknowledged need of my body for an *object* existing outside it, indispensable to its integration and to the expression of its essential being. The sun is the *object* of the plant—an indispensable object to it, confirming its life—just as the plant is an object of the sun, being an *expression* of the life-awakening power of the sun, of the sun's *objective* essential power.

A being which does not have its nature outside itself is not a *natural* being, and plays no part in the system of nature. A being which has no object outside itself is not an objective being. A being which is not itself an object for some third being has no being for its *object*; i.e., it is not objectively related. Its be-ing is not objective.

An unobjective being is a *nullity*—an *un-being*. (Marx 1978, 115–116)

Here Marx seems to distinguish between 'active' and—implicitly—non-active (whether in the sense of passive, reactive, receptive, etc., as yet remains to be seen) natural beings by appeal to the 'natural powers' of the former. This distinction demands further explication than he himself provides, however.

Marx evidently suggests that 'living' natural beings are, qua living, 'active'. But it is less clear whether he identifies all 'active' natural beings as 'living': there is some indication that being an 'active' natural being for Marx essentially involves having 'natural powers of *life*' (my emphasis), which in turn manifest as 'impulses' or 'tendencies and abilities'; but it is also possible that being an 'active natural being' simply involves having 'natural powers', with 'natural powers of life' constituting only a special case thereof. (Of course, it is also possible that Marx himself has no clear view on the matter; regardless, I will try to clarify the matter on his behalf and

pursuant to my own broader goals.) Since he introduces the term 'object' in relation to 'impulses' or 'needs', and proceeds to attribute 'objects' to the sun, in either case it seems fair to conclude that Marx treats both animate and inanimate 'natural beings' at least *as if* they had, and perhaps even as literally having, the sort of 'needs' for or 'impulses' towards other natural beings that are more intuitively attributable only to living things.

In turn, the characterization of 'active' natural being that Marx seemingly offers which is farthest from radical organicism, whether literally- or figuratively-intended, is his appeal to the 'expression' or 'manifestation and confirmation' of an active natural being's 'essential powers' in another natural being. Thus again it could be in this 'expressive' sense that the sun displays the 'active' character of its 'natural being' in relation to the plant. But since Marx does not here distinguish between 'manifestation' and 'confirmation', anyone defending this interpretive proposal would plausibly be compelled to interpret Marx as implicitly claiming that the plant, too, is 'active' insofar as he claims that its 'life' is 'confirmed' in the sun. (And this of course runs counter to my earlier suggestion that there is an important asymmetry between the sun and plant in this context.)

Regardless, this is not the view that Marx in fact advances in the above passage: that man 'expresses', 'manifests', and 'confirms' his 'natural powers of life' in things that 'exist outside of him, as objects independent of him' for Marx explains not the sense in which man is an 'active' natural being, but rather the sense in which man is a 'suffering' or 'conditioned and limited' being. Hence that a given thing 'expresses', 'manifests', or 'confirms' its 'essential powers' in external things cannot be what it means for this thing to be 'active', on Marx's view—at least, if 'activity' is to remain distinct from 'suffering' (as is suggested by the phrase 'on the other hand' at the beginning of the fourth sentence in the above passage).

Relatedly, it is only in a qualified sense that the 'active' character of 'active natural beings' can be understood in terms of their having 'natural powers'. For on Marx's view the 'naturalness' of 'natural powers' apparently just consists in these powers' having *external* objects: 'a being which does not have its nature outside itself is not a *natural* being', Marx insists; hence if something is a 'natural' being, it evidently 'has its nature outside itself'; and it is even plausible to interpret this last claim as definitional, such that 'natural' beings for Marx just are those that 'have their natures outside of themselves'. Thus for Marx the 'active' character of 'active natural beings' appears to essentially involve their possession of *powers*, not *natural* powers per se.

What, then, could it (implicitly) mean for a natural being to have a 'power', and hence to be 'active', for Marx? The only remaining interpretive resource he seems to provide here is the distinction between '*having* object, nature and sense outside oneself' and '*being* object, nature and sense for a third party'. That is, perhaps to *have* an external object is to be an *active* or *powerful* natural being, whereas to *be* an external object for something is—we might say, building upon Marx's own fairly skeletal view—to be a *receptive* natural being. And *receptivity* thus construed might in turn be differentiated from *passivity* or *impotence* understood simply as the absence of power.

Yet when Marx insists that the sun and plant are each an object for the other, he thus seems either to simply conflate *having* and *being* an object, or else to be claiming implicitly that natural beings always *are* objects of the objects of their own essential powers. The latter, far more interpretively plausible view would in turn jibe with Marx's deep indebtedness to the Hegelian dialectic, notwithstanding his widely-touted 'materialist inversion' of Hegel's absolute idealism:⁹⁰¹ in broadly the same spirit that Hegel is concerned to dialectically resolve or 'sublate'

901 The popular notion that Marx 'inverts' the Hegelian system is somewhat misguided and indeed verging on incoherent, given that Hegel is precisely concerned to argue that the 'material' and 'ideal' orders are equally-fundamental 'moments' or aspects of 'Absolute Spirit' in its constitutive process of self-knowledge: Hegelian Spirit is not simply mind or mental substance as opposed to body or material substance; the Hegelian subject-object dialectic has no 'top' or 'bottom'; and for both (interrelated) reasons it makes no sense to 'invert' the Hegelian system.

Moreover, brute 'economic determinist' variants of Marxian social theory according to which the 'base' of purely material forces of production determines ideological 'superstructure' are, on my view, very far from the more resolutely dialectic tenor of Marx's own writings. Marx claims in the *German Ideology* (Marx and Engels 1978, 165) that the "real basis of history" is the *mode of production*, comprised of historically-specific and ever-developing *forces of production* (e.g. including particular forms of technological capacity) and *relations of production* (i.e. particular level and formation of the division of labor); and mere appearance, by contrast, is the domain of *ideas* or *ideology*. But Marx seems to allow that ideas can be *part* of the mode of production, and indeed even that ideas can be productive forces. For example, Derek Sayer suggests that "the *idea*[...]of free self-determination, of liberty, makes a much better worker of the one than of the other," and hence that "[s]ocial forms of consciousness"—'superstructural' phenomena *par excellence* for most Marxists—would seem here to be part of capitalism's productive forces" (Sayer 1987, 36). Indeed, it seems that, for Marx, the very same idea can have a dual existence, as both an 'appearance' and a 'reality'. Here consider e.g. the very same 'idea of free self-determination, of liberty' that Sayer appeals to as a productive force: in other contexts, Marx treats this idea as a paradigmatic example of an *appearance* that masks or conceals a conflicting underlying reality—consider, e.g., his claim that the dissolution of feudalism and the development of capitalist production has yielded not liberty *per se*, but simply a "liberty of egoistic man" (Marx and Engels 1978, 45) that exists only in relation to the historical expropriation and ongoing exploitation of labor (*ibid.*, 433).

In short: Marx himself arguably misrepresents the scope of his philosophical distance from Hegel by representing the latter as if he were one-sidedly idealistic or focused on 'consciousness' in a naive sense, perhaps so as to make his (i.e. Marx's) own system seem more original, whether consciously or unconsciously, intentionally or unintentionally; but the endpoint of Marx's dialectic is in fact very much like that of Hegel's (particularly upon 'Left Hegelian' interpretations). And, of course, this is all consistent with the perfectly-correct observation that Marx has a much more highly sophisticated theory of political economy than Hegel, and uses it to his philosophical advantage.

[*aufheben*] the antinomies resulting from Cartesian mind-body dualism and its lingering residuum in the Kantian distinction between 'phenomenal' and 'noumenal' reality (i.e. the 'object' of 'experience' as mere 'appearance' for the cognizing 'subject', in opposition to the 'thing in itself' [*Ding an sich*]), Marx is concerned to insist that things which *have* objects (i.e. subjects or wills, roughly speaking) are real only insofar as they *are* objects, and vice versa. Or, using a more ethically-revealing aspect of the Hegelian system: in broadly the same spirit that Hegel is concerned to 'sublate' the opposition or apparent 'contradiction' between 'master' (corresponding roughly to 'subject') and 'slave' (roughly, the 'object' for this 'subject'), Marx is concerned to insist that the (apparently 'masterful') sun does not merely have the plant ('slave') as its object, but moreover is itself the plant's object—the sun *needs* the plant, in other words, like the master on Hegel's view *needs* or demands *recognition* from the slave in whom her otherwise merely subjective will is objectively realized.

Notwithstanding these intuitive (and as it stands somewhat loose) associations, Marx's emphasis on the 'naturalness' of 'real' beings, or the externality of the essential objects of their needs, also evidently reflects his rejection of central aspects of Hegelian metaphysics, as he understands it. Here note first that Hegel endorses the post-Kantian truism that to be a *subject*, to have *agency* or *will* (note the relationship between notions like 'will' or 'agency' and the concepts of 'impulse' and 'need' that Marx associates with 'powers'...), is to be capable of positing oneself as an *object* for oneself—that is, to be *self-conscious*. In turn, although something like this notion of subjectivity or self-consciousness may seem to be reflected in Marx's implicit claim that natural beings always *are* objects for the objects they *have*, in fact there is a crucial difference. Namely, Marx insists emphatically that natural beings as such have objects that are *external to themselves*. And this occurs precisely in the broader context of Marx's rejecting what he takes to be Hegel's misguided construal of human nature in terms of the mere “abstraction of man—self-consciousness”:

Because [for Hegel] man equals self-consciousness, his alienated, objective essence, or *thinghood*, equals *alienated self-consciousness*, and *thinghood* is thus established through this alienation (*thinghood* being that which is an *object for man* and an object for him is really only that which is to him an essential object, therefore his *objective essence*. And since it is not *real Man*, nor therefore *Nature*—Man being *human Nature*—who as such is made the subject, but only the abstraction of man—self-consciousness—*thinghood* cannot be anything but

alienated self-consciousness). It is only to be expected that a living, natural being equipped and endowed with objective (i.e., material) essential powers should have *real natural objects* of his essence; as is the fact that his self-alienation should lead to the establishing of a *real*, objective world—but a world in the form of *externality*—a world, therefore, not belonging to his own essential being, and an overpowering world. There is nothing incomprehensible or mysterious in this. It would be mysterious, rather, if it were otherwise. But it is equally clear that a *self-consciousness* can only establish *thinghood* through its alienation—i.e., establish something which itself is only an abstract thing, a thing of abstraction and not a real thing. It is clear, further, that thinghood is therefore utterly without any *independence*, any *essentiality* vis-a-vis self-consciousness; that on the contrary, it is a mere creature—something *posited* by self-consciousness. And what is posited, instead of confirming itself, is but a confirmation of the act of positing in which is concentrated for a moment the energy of the act as its product, *seeming* to give the de-deposit—but only for a moment—the character of an independent, real substance.

Whenever real, corporeal *man*, man with his feet firmly on the solid ground, man exhaling and inhaling all the forces of nature, *establishes* his real, objective *essential powers* as alien objects by his externalization, it is not the *act of positing* which is the subject in this process: it is the subjectivity of *objective* essential powers, whose action, therefore, must also be something *objective*. A being who is objective acts objectively, and he would not act objectively if the objective did not reside in the very nature of his being. He creates or establishes only *objects*, *because* he is established by objects—because at bottom he is *nature*. In the act of establishing, therefore, this objective being does not fall from his state of 'pure activity' into a *creating of the object*; on the contrary, his objective product only confirms his *objective* activity, establishing his activity as the activity of an objective, natural being.

Here we see how consistent naturalism or humanism distinguishes itself both from idealism and materialism, constituting at the same time the unifying truth of both. We see also how only naturalism is capable of comprehending the act of world history. (Marx and Engels 1978, 114-115)

On Marx's understanding of Hegelian absolute idealism, Hegel claims that 'man equals self-consciousness'; perhaps 'absolute Spirit' or 'infinite substance' would here be more to the point than 'man'—but then one could still, on Marx's behalf, insist that Hegel wrongly depicts infinite substance in the image of abstract self-consciousness. More broadly, Marx evidently attributes to Hegel the view that 'self-consciousness' is something like pure subjectivity, rational self-activity, or willing abstracted from its real (and hence on Marx's view inevitably *external*) objects. More intuitively, Marx's thought seems to be that the 'self' implied by Hegel's notion of 'self-consciousness' is a purely *ideal* or *rational* self, rather than a '*natural* or *corporeal*, living, real,

sensuous, objective' self. Hence every particular, spatiotemporally located, material thing—every 'real natural object', in Marx's terms—is “utterly without any *independence*, any *essentiality*” in relation to the pure self-consciousness of Hegelian man. According to Marx, in other words, Hegelian idealism reduces the object to the status of 'a mere creature—something *posited* by self-consciousness,' as opposed to a genuinely 'independen[t]' thing that 'confirm[s] itself.'

Thus on Marx's interpretation, Hegelian idealism posits man as a being for which every external object is inessential—an essentially unconditioned and purely self-determining being that has its nature entirely within itself and so 'plays a part in the system of nature' only incidentally, or in short a '*nullity*' and an '*un-being*'. In turn, one might say on Marx's behalf that Hegelian self-consciousness amounts to an empty relic of anti-naturalistic Christian conceptions of the *soul* (in Hegel's theory of human nature) and an absolutely unconditioned *God* (in Hegel's theory of infinite substance as Spirit). Consequently, on Marx's view we must ultimately “abstract from the Hegelian abstraction,” replacing its illusory vision of pure “Self-consciousness” with a substantive notion of “the self-consciousness of man,”⁹⁰² which is to say the self-consciousness of a *natural* (i.e. 'suffering', 'conditioned') being who is also a “species being”⁹⁰³—a “*universal* and therefore free,”⁹⁰⁴ essentially *human*⁹⁰⁵ being.

In this light, finally, it is possible to understand why Marx claims that the sun and plant are mutually objectifying, and moreover to see that he is in fact *wrong to do so*. As we have seen, Marx insists contra Hegelian idealism as he understands it that the *naturalness* (and so for

902Marx and Engels 1978, 118.

903Marx and Engels 1978, 116-117. “Every sphere of life provides both occasions and materials for the objectification of man's essential powers. Production, religion, politics, art, literature, family, state, law, morality and science are each to be regarded in this light.[...]Material production, because of the necessary character of this task and the amount of time devoted to it, is the area of life where the individual's powers are most evident. According to Marx, 'The object of labor is...the objectification of man's species life: for he duplicates himself not only, as in consciousness, intellectually, but also actively, in reality'. Man's species life, which is the operation of his essential powers, is said to become visible in production through the various modes adopted and products produced. Both are referred to, in Marx's peculiar terminology, as man's 'duplication' of himself in the real world” (Ollman 1976, 95); “According to Marx, 'Neither nature objectively nor subjectively is directly given in a form adequate to the human being.' In creating a nature which is adequate, in producing food which he can eat, clothes he can wear and a house he can live in, man is forever remolding nature, and with each alteration enabling his powers to achieve new kinds and degrees of fulfillment. Industry exists in order to satisfy human needs, but industry in turn creates conditions of life which generate new needs. These make necessary a new advance in industry and a diversification of products. It is such a development Marx is describing when he declares, 'the needs of people are themselves the ultimate grounds (*letzten Gründe*) for their satisfaction'.” (Ollman 1976, 99).

904Marx and Engels 1978, 75.

905“The *real*, active orientation of man to himself as a species being, or his manifestation as a real species being (i.e., as a human being), is only possible by his really bringing out of himself all the *powers* that are his as the *species* man ...” (Marx and Engels 1978, 112).

Marx, as a naturalist, the *reality*) of humankind is predicated on our not merely 'positing' the objects of our essential needs as 'alienated self-consciousness' or emanations of pure will—in other words, as a mere 'confirmation of the act of positing in which is concentrated for a moment the energy of the act as its product'—, but rather as things that 'confirm' *themselves* as 'independent, real substance' *in relation to us*. That is, the naturalness of man requires not just that man *has* external things as the objects of his essential *powers*, but moreover that he is *conditioned* precisely by these objects, such that he *needs* every external thing in which his power finds expression. In short, Marx seems to believe that every *real power* grounds a *real need* for the external objects in which it finds expression, and reciprocally that every object of a real need has power in relation to that which needs it. Hence the *reality* of the sun and the *naturalness* of its 'life-awakening power' for Marx entail that the sun's external objects are more than just the 'expression' or 'confirmation' of its power, and specifically that they display a kind of 'independence' and 'essentiality' in relation to the sun, such that the sun is *conditioned by* and *needs* the objects of its essential powers. If the plant were a 'confirmation' of the sun's life-awakening power but the plant's life were not 'confirmed' by the sun in a way that reciprocally constituted the sun as the object of the plant's vital power, then the sun would be functioning as a 'nullity' or 'non-being' in the mode of Hegelian abstract subjectivity positing external objects merely as alienated projections of this selfsame act of positing.

Marx's view, at least as interpreted here, is unsatisfactory in several respects. First, he interpolates the relationship between the sun and plant into a framework designed and primarily suitable for analysis of the relationship between the 'ideal' and 'material' orders. But—of course—the sun is not in fact a mind, a subject, or a will; the sun in fact has no desires, impulses, instincts, drives, purposes, goals, perceptions, or values; and insofar as the sun in fact does have a 'life-awakening power' that it actively 'expresses', it certainly does not *aim*, *intend*, or *need* to do so. A metaphysical analysis of power in the domain of inorganic natural phenomena should not be beholden to our fraught relationship to our own seemingly hybrid 'sensuous-rational' nature.

Second, and relatedly, even if Marx is right that *real* or *natural* powers as such 'confirm' the self-standing reality of the objects in which they find expression and hence in some sense *depend upon* these objects, it does not follow that the sun (for example) depends upon the plant *to the same degree* or *in the same way* that the plant depends upon the sun. The dependence of

the plant's life on the life-awakening power of the sun seems meaningfully different from the dependence of the sun's life-awakening power on the living things in which it manifests. And the metaphysical notion of power I am working to isolate makes appeal to this evident difference. Marx is of course entitled to use the term 'object' in such a way that any such differences in degree or kind of dependence are immaterial. But in so doing he sacrifices the intuitive explanatory power of the distinction between *having* an object and *being* an object, or equivalently the distinction between *activity* and *receptivity*, since he consequently sees activity and receptivity as mutually entailing.

Admittedly, there may well be good reasons to deny the propriety, or even the stable existence, of fundamentally asymmetrical relations of objectification or activity in the domain of human affairs. Here recall Hegel's insistence that despite her apparent independence from and asymmetrical power over the 'slave', the 'master' in fact *needs* the slave's *recognition*. And, Hegel further insists, the master can never actually achieve this recognition insofar as she maintains the slave in a position of dehumanizing subservience, since mere systematic obedience or even sincere praise from someone occupying a position of subordination can never constitute genuine recognition. This is not to deny that the relationship between 'master' and 'slave' is in on its face obviously asymmetrical, for Hegel. However, Hegel is concerned to argue that this manifest asymmetry is contradictory or self-undermining, by contrast to states of mutual recognition predicated on concrete institutional realization of and individual subjective respect for universal moral subjectivity and equal political personhood.

But the sun and plant are not human beings, of course, and have no moral status or agency. The sun has no need or drive to become self-conscious through mutual recognition with an equally self-standing 'other', and is entirely incapable of doing so. It is neither morally bad nor morally good that the sun expresses its power in and through the plant in a way that the plant does not vis-à-vis the sun. In a broadly Nietzschean spirit, though, I claim that the sun's power in relation to the plant is *good* in some other sense, the ethical significance of which remains to be fully explored. More generally, there *are* objective hierarchies of power or determinative force; where these hierarchies concern only inorganic natural entities or phenomena, they evidently *are not morally good or bad*; yet objective hierarchies of power or determinative force nevertheless have *extra-moral* ethical significance. This does not mean that power is good *only* insofar as it manifests in *asymmetrical* relations of determinative force. But power is certainly no less

exemplified in asymmetrical relations of determinative force than in relations of mutual recognition.

Third, Marx's claim that real *powers* inevitably correspond to real *needs* for their objects is implausible, and distorts the nature of power by representing it from the perspective of things affected or determined by the powerful, rather than from that of power itself. Marx is perfectly correct that power as such necessarily manifests against *resistance*: the objects of essential powers must 'confirm themselves' as 'independent, real substances' in order for these powers to be *realized*. For example, Hegel observes that a child's naive 'appropriation' of objects by declaring them 'Mine!' obviously falls short of genuine appropriation demanding recognition. ("It often happens that children lay stress on their prior willing in preference to the seizure of a thing by others. But for adults this willing is not sufficient, since the form of subjectivity must be removed and must work its way beyond the subjective to objectivity."⁹⁰⁶) And Nietzsche often emphasizes the same overarching point: he claims that "[...]all expansion, incorporation, growth is striving against something that resists" (*WP* 704 / *KSA* 13:11[111]), proposes that "the will is never satisfied unless it has opponents and resistance" (*WP* 696 / *KSA* 13:11[75]; compare *GS* 56), explicitly associates the "feeling that power is growing" with the feeling "that resistance is overcome" (*A* 2), suggests that "the will to power can manifest itself only against resistances" and "seeks that which resists it" (*WP* 656 / *KSA* 12:9[151]), and emphasizes the value of having enemies to struggle against (*BGE* 260; *GMI* 10; *EH* "Wise" 7; *Z I*: "On War and Warriors" *et passim*). In short, recall, Nietzsche insists that "every event[...]presupposes a resistance overcome" (*WP* 708 / *KSA* 13:14[174]). But—contra Marx and the Nietzschean doctrine of universal *will to power*—a powerful thing does not in general *need* or *strive* to overcome resistance. A powerful thing simply *does* overcome resistance, *because* it is powerful.

Moreover, a powerful thing can arguably still be powerful in the absence of external objects in which to *entirely display* or *fully manifest* its power. The sun would evidently in some sense still possess life-awakening power in a way that the moon does not, for example, even if the broader conditions in our solar system were not suitable to sustain life. Here one must avoid a flat-footed interpretation of Nietzsche's claim that there is no 'doer' behind the deed:

To demand of strength that it should *not* express itself as strength, that it should *not* be a desire to overcome, a desire to throw down, a desire to

⁹⁰⁶Hegel *Philosophy of Right* sec. 51A.

become master, a thirst for enemies and resistances and triumphs, is just as absurd as to demand of weakness that it should express itself as strength. A quantum of force is equivalent to a quantum of drive, effect—more, it is nothing other than precisely this very driving, willing, effecting, and only owing to the seduction of language (and of the fundamental errors of reason that are petrified in it) which conceives and misconceives all effects as conditioned by something that causes effects, by a 'subject,' can it appear otherwise. For just as the popular mind separates the lightning from its flash and takes the latter for an *action*, for the operation of a subject called lightning, so popular morality also separates strength from expressions of strength, as if there were a neutral substratum behind the strong man, which was *free* to express strength or not to do so. But there is no such substratum; there is no 'being' behind doing, effecting, becoming; 'the doer' is merely a fiction added to the deed—the deed is everything. The popular mind in fact doubles the deed; when it sees the lightning flash, it is the deed of a deed: it posits the same event first as cause and then a second time as its effect. Scientists do no better when they say 'force moves,' 'force causes,' and the like—all its coolness, its freedom from emotion notwithstanding, our entire science still lies under the misleading influence of language and has not disposed of that little changeling, the 'subject' (the atom, for example, is such a changeling, as is the Kantian 'thing-in-itself'); no wonder if the submerged, darkly glowering emotions of vengefulness and hatred exploit this belief for their own ends and in fact maintain no belief more ardently than the belief that *the strong man is free* to be weak and the bird of prey to be a lamb—for thus they gain the right to make the bird of prey *accountable* for being a bird of prey. (*GM I*, 13)

Nietzsche is obviously right that appealing to unrealized powers or capacities can be a way for people who in fact lack these powers to feign as if they are simply choosing not to exercise them. He is also right, on my view, to deny the existence of a 'subject' (ego, soul, free will, etc.) that somehow sits beyond or outside of all one's natural drives and subjects them to independent rational appraisal. And it is on my view also plausibly true that in a sense there are no unrealized capacities: every thing in every moment does what it must by virtue of what it is. In short, nothing in nature is genuinely 'free to do otherwise' (which is of course consistent with human freedom as construed by compatibilists).

But it is also true, as well as consistent with the above, that it is often possible to realistically assess the way that things are likely to behave under counterfactual circumstances. Moreover, it seems reasonable and indeed prudent to allow these counterfactual judgments to inform one's assessments of things' power or lack thereof. In this context, one might distinguish between gauging what a given thing would do if it were 'free to do otherwise' or essentially

different than it in fact is (which seems to be illegitimate, on broadly Nietzschean grounds) and gauging what this thing would do if it retained its nature or essential identity but were situated in relation to different external phenomena (which seems more intuitively legitimate). But, of course, this intuitive distinction is complicated if not necessarily undermined by the fact that some things'—including individual human beings'—essential identities are evidently determined at least in part by environmental conditions.

Finally, Marx fails to adequately respect the distinction between activity grounded in *lack* or *deprivation* and that grounded in *excess* or *strength*. One *needs* the objects of one's desire—such as food when one is hungry—in a way that one *does not need* the objects of one's passion or love. For, as Schiller rightly observes, “One loves what he has; one desires what he has not; Only the rich soul loves; only the poor one desires.”⁹⁰⁷ Here recall Nietzsche's distinction between the drive to self-overcoming and the mere drive to self-preservation, for instance as manifested in the difference between 'primitive nourishment' construed as a drive to “overcome, appropriate, assimilate” what one encounters and thereby to “become *stronger*” (*WP* 702 / *KSA* 13:14[174]), and 'hunger' construed as a mere “desire for self-preservation” or “replacing a loss” (*WP* 652 / *KSA* 13:14[174]). As a legitimate ground of praise or veneration, the sun's life-awakening power is more aptly viewed in relation to the richness that overflows from superabundant life than the hunger of deprived life that pulls its objects inward. Nor is it at all clear that this association is 'merely' metaphorical: the sun literally does exert determinative force in relation to the plant, and the sun is not reciprocally determined by the plant in anything importantly like the way in which we are determined by the objects of our needs or desires.

Marx's claim that real powers give rise to real needs is not entailed by broadly naturalistic acknowledgement that all real things condition or are conditioned by external things—or even by the more stringent naturalistic hypothesis that no real thing conditions other things without itself being conditioned by something beyond itself. It does not follow logically from the fact that everything is conditioned by *something* that it is conditioned by precisely the things that it itself conditions (if it conditions something)—let alone that all forms of 'conditioning' are qualitatively or quantitatively on par. Thus one must provide independent grounds for rejecting the possibility of asymmetric relations of objectification, or determination more broadly. I have tried to indicate what such grounds might be, for Marx, while arguing that they are metaphysically dubious.

⁹⁰⁷Friedrich Schiller, “Love and Desire” (Dwight 1839, 352).

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