

## **Jessica Wilson, "Naturalist Metaphysics" (2003)**

There are not only metaphysical foundations of physics, but also physical foundations of metaphysics. For science and philosophy are, at least genetically, interrelated and they exert mutual influence upon each other. (Max Jammer, *Concepts of Force*, p. 149)

### **Two conceptions of metaphysics**

Metaphysics is commonly characterized as the study of the most general features of reality: existence, identity, dependence, causation, change, modality, and so on. But since such features have specific manifestations—there are specific existences, dependencies, causes, changes, possibilities—it would be more accurate to say that metaphysics is the study of these features at a certain general level of investigation. Metaphysicians seek to understand, in general terms, what exists (properties and substantial particulars?), what dependency relations there are (composition? logical entailment?), what causation is (a relation whereby one event raises the probability of another?), and so on. Hence it is that metaphysics is defined not only by its subject matter, but also by its aspirations to provide general accounts of this subject matter. And indeed, to the extent that one can give metaphysical accounts of less general features of reality—say, of garbage, fictional characters, or political institutions—by identifying the general characteristics of these features, there is a case to be made for metaphysics being defined primarily by the distinctively general approach it takes, to understanding pretty much any subject matter you like.

So far, most metaphysicians would probably agree. It seems to me, however, that there is room for disagreement about how one should go about arriving at an appropriately general metaphysical account of some feature of reality.

On the usual conception, a general metaphysical account is the product of conceptual analysis, proceeding roughly as follows. One starts with the concept associated with the feature in question—that is, by thinking about the feature—with the goal of determining the contours of application of the concept—that is, of determining when the feature in question does or does not occur, across a wide range of candidate scenarios. These contours are determined primarily via conceivability considerations, of the sort characteristic of "thought experiments": the metaphysician imagines, or conceives, a given scenario (as taking place in a "possible world"), and assesses their intuitions regarding whether the feature in question does or does not occur in the feature in question, the goal is then to provide an account of the feature (usually, in terms of conditions that are necessary and sufficient for its occurrence) that appropriately tracks the contours of the concept, as revealed by conceptual analysis.

This, for example, is how David Lewis goes about arriving at his account of causation. He aims for his account to track the application of causal concepts across a wide range of possible worlds, including worlds where the laws of nature are completely different, or where there is magical causation, of the spell-casting variety. Lewis thinks he can conceive of such worlds, and of causation existing in such worlds; and he generally endorses inferences from conceivability to possibility. Hence his account aims to accommodate these supposed possibilities: causation, he ultimately suggests, is a matter of counterfactual dependence between events, or between the ways in which these events occur (if Merlin hadn't cast the spell, the prince either wouldn't have changed into a frog, or in any case wouldn't have changed into a frog in quite the way he did).

Since the conceptual analysis approach attempts to track the occurrence (or non-occurrence) of a given feature of reality across a wide range of conceivable scenarios, it will certainly give

rise to a general account of the feature-assuming it is methodologically sound. One might, however, be suspicious of the methodology of conceptual analysis, insofar as it requires (as usually practiced) a considerable degree of faith in inferences from conceivability to possibility, concerning what worlds are supposed to be possible, and what goes on in such worlds. Supposing we can conceive of a world containing magical causation, does this show that such a world is genuinely possible (such that an adequate account of causation must accommodate this possibility)? Or supposing that we can conceive of a world with completely different laws of nature, where negatively charged electrons behave just like actual protons do, does it follow that properties like negative charge could be governed by completely different laws (such that an adequate account of the nature of scientific properties must accommodate this possibility)? I personally am not inclined to accept the latter inferences. And indeed, one might think that it's easy enough to conceive of the impossible. Supposing that mathematical propositions are necessarily true, if true, and necessarily false, if false, then can't I conceive, first, that Goldbach's conjecture is true, and then that it is false? One or the other of these times, it seems, I conceived of the impossible.

Of course, we needn't require of our philosophical methodology that it never go wrong. Perhaps it would be good enough for most metaphysical purposes if conceivability were generally a good guide to possibility. But notwithstanding a considerable amount of debate on the topic, it remains unclear whether this general reliability is in place, and even more importantly, whether principled means exist for distinguishing conceivings that do track genuine possibilities from those that don't.

For philosophers suspicious of the methodology of conceptual analysis, there is an alternative approach to arriving at a general metaphysical account of some feature of reality. Rather than start with the concept associated with the feature, one rather starts by canvassing the relevant (apparent) facts and theses concerning the feature, as diverse actual practices take these facts and theses to be. What practices are appropriate sources of the relevant facts and theses will depend on what feature of reality is at issue, of course. Investigation into extremely general features may need to canvas data from all areas of experience-the natural and social sciences, linguistics, and ordinary experience, among others. Accounts of more specific features-art or artifacts, or scientific phenomena-may focus on distinctly human areas of experience, or on scientific facts and theses. And of course, properly philosophical facts and theses may also be relevant (e.g., those concerning one's prior philosophical commitments or views). Relevant facts and theses in hand, the desired general account of the feature in question is then arrived at by triangulation on these facts and theses.

The process of triangulation might take place in a variety of ways (and of course the process could iterate, to reflect incoming data). So, for example, one might arrive at a general account by abstracting from the relevant facts, in something like the way one arrives at the definition of a genus, by abstracting from its species. Or one might do so via an inference to the best explanation of the relevant facts. In any case, such a process will bear many of the marks of a typically empirical investigation, in ascending from facts, many of which are likely to be determined a posteriori, to theory. As such, this approach to metaphysics, which so far as I know doesn't have a name, might be appropriately called naturalist metaphysics, reflecting the naturalist view according to which philosophical methodology should be consonant with that endorsed by the sciences.

Some clarifying remarks about this approach are in order. First, being a naturalist metaphysician is not to be confused with being an actualist metaphysician. Naturalist

metaphysicians may profitably reason about worlds different from the actual world (and indeed, may even endorse the concrete existence of non-actual possible worlds). However, a naturalist approach does require that one's reasoning about what is possible be appropriately sensitive to the relevant facts and theses about modality as these are taken to be in various actual areas of experience. This may require some reading between the lines. Supposing, for example, that scientists do not explicitly pronounce on what is possible or impossible for scientific entities, it is the naturalist metaphysician's job to discern, via attention to scientific facts and theses, what is plausibly (even if tacitly) taken to be the scientific view on this matter—again, perhaps as an inference to the best explanation of what scientists actually do or believe. And the same goes for modal facts and theses as they show up in other areas of experience.

Second, to be a naturalist metaphysician is not to hand over all authority to science, ordinary experience, or whatever the relevant areas of data input might be, to determine one's metaphysical accounts or theses. A naturalist metaphysician needn't take anything on faith, either from science or the person on the street. What this approach does require is that the general account of the feature in question accommodate the facts and theses of the relevant areas of actual experience, which means (as is usual in metaphysical contexts) that these facts and theses need either to be explained or explained away.

An example of someone who I take to be implementing a naturalist metaphysics approach is Phil Dowe. In arriving at his account of causation, he starts with various actual facts and theses concerning causation: in the main, what is thought to cause what, in various areas of experience. He then abstracts from the facts and theses he takes to be most relevant (namely, those associated with fundamental physics), suggesting that causation involves the exchange of conserved quantities (e.g., energy and momentum); and he has a story that attempts to accommodate causal claims outside of the physical sciences, according to which these reduce to claims about transfers of conserved quantities. Dowe's account (which, by the way, I don't endorse) privileges the view from physics, but of course a proponent of a naturalist metaphysical approach might give a less- or non-physics-centric account (just as a conceptual analysis of causation might proceed in any number of fashions). In any case, it's clear that Dowe's account is still an account that is properly speaking metaphysical, in providing a more general account of causation than any associated with the sciences, in particular.

My own bent is for naturalist metaphysics; and I am drawn to this approach both because I am suspicious of conceptual analysis and because I am drawn to naturalism. My goal here is not, however, to legislate between these approaches. Moreover, I don't mean to deny that the two approaches might profitably overlap. What I aim rather to do is twofold.

First, I want simply to make explicit (as I hope to have just done) that there are different conceptions of how metaphysical investigation might proceed, which are more or less sensitive to empirical considerations. Metaphysicians have not, I think, been sufficiently aware of the options here. For example, while philosophers recognize that Dowe's account contrasts with a conceptual analysis approach, his account tends to be classified as a "physicalist reduction", which classification, while accurate, misses the broader point that Dowe's account implements a conception of metaphysics as naturalist metaphysics (which needn't be either physicalist or reductionist).

Second, in what follows I want to provide two case studies illustrating two ways in which a naturalist metaphysics approach can have bearing on contemporary metaphysical debate. The first illustrates, by considering the question of how to formulate physicalism, how attention to certain scientific theses can suggest metaphysical resources needed to formulate a given

metaphysical position in a plausible and contentful way. The second illustrates, by considering the question of whether scientific properties are essentially dependent on their actual governing laws, how a naturalist approach to a metaphysical question can provide grounds for favoring one answer over another.

The broader moral of these case studies is that doing naturalist metaphysics is likely to require more attention to empirical goings-on than is usual in contemporary metaphysics, especially when scientific facts and theses bear upon the feature of reality under investigation, as they so often do. Here it's useful to recall that not so long ago, metaphysics and science were unified under the rubric 'natural philosophy'. Given the methodological worries associated with the conceptual analysis approach, it's worth considering the advantages of a partial reunion.

### **Case study 1: Formulating physicalism and emergentism**

Physicalism is the thesis, endorsed by many philosophers, according to which all broadly scientific entities (more specifically: all particulars, properties, states, processes, etc. studied in any of the sciences, from physics through psychology and the social sciences) are nothing over and above physical entities (particulars, properties, etc.). Emergentism, currently less popular but arguably physicalism's best rival, is the view that while all scientific entities are dependent upon physical entities, some (e.g., qualitative mental states such as 'seeing blue') are nonetheless over and above, or 'emergent from', these physical entities. (Note that the emergence at issue here is supposed to be of a stronger variety than that at issue in, e.g., chaotic or complex systems, which are sometimes said to have features that are 'emergent', in being unpredictable, but where the emergent features are uncontroversially physically acceptable.)

Formulating these positions more precisely requires getting clear on the physical/non-physical and the nothing/something over and above distinctions. What is wanted are accounts of these distinctions on which physicalism and emergentism each turn out to be doctrines that are neither trivially true, trivially false, nor question-begging; and that contrast with each other in an appropriate and illuminating way, as they traditionally have been taken to do.

Worries about whether these doctrines can be viably formulated have focused on the physical/non-physical distinction. But on a plausible understanding this distinction is not especially problematic. Both physicalists and emergentists agree that physical entities are either those studied (approximately accurately) by contemporary fundamental physics, or are entities relevantly similar to these, in respect, most importantly, of not being fundamentally mental: both parties reject panpsychism, the thesis that mentality is had or bestowed by entities at extremely simple levels of organization. On this characterization, the physical/nonphysical distinction is sufficiently clear to allow debate to proceed over the real issue dividing physicalists from emergentists: whether there are any entities over and above the entities that all parties agree are physical.

In my view, the real worry concerning whether physicalism and emergentism can be viably formulated has rather to do with the nothing/something over and above distinction. I won't go through all the ways philosophers have tried to get at this distinction, and the inadequacy of these attempts for purposes of formulating the theses at issue. I'll just consider one particularly plausible and common suggestion, show how it fails, and then show how it can be fixed up, by appeal to a scientific concept not usually considered in philosophical contexts.

For convenience, let's focus on over and aboveness as attaching to scientific properties, and on the cases of primary interest in the physicalism debates: cases of what I call "same subject necessitation", where a physical or physically acceptable property of a subject brings about an

apparently distinct property of the subject, as a matter of lawful necessity (that is, in accord with the operative laws of nature). A stock case-and the most important case-is where a brain property, instanced in a subject, necessitates a mental property in that subject; and for convenience I'll focus on this case in what follows.

According to the plausible suggestion I have in mind, what it is for a mental property M to be over and above its necessitating brain property P is for M to bestow a causal power that P doesn't bestow. That is, in virtue of having M, the subject S can cause effects that S can't cause simply in virtue of having P. There is surely something plausible about taking over and aboveness to involve new causal powers; and indeed, emergentists have often characterized emergent properties in roughly these terms.

However, the suggestion faces the following difficulty. On the not uncommon "nomological sufficiency" account of when it is that a property bestows a causal power, this is a matter of the property's being lawfully sufficient, in the circumstances henceforth assumed), for the effect e (and where the circumstances alone aren't lawfully sufficient for e). So, consider the emergentist claim that an emergent mental property M bestows a causal power to produce a certain effect e, that its necessitating brain property P doesn't bestow. Since the brain property P lawfully necessitates the mental property M (since this is a case of same-subject necessitation), P is lawfully sufficient for M. And M is lawfully sufficient for the effect e, by assumption. But then, by the transitivity of lawful sufficiency, so will P be lawfully sufficient for the effect e. That means, on the present account of causal power bestowal, that P bestows the causal power to produce e, contrary to the assumption that M bestows a new causal power to produce this effect. And in fact, on the given assumptions a same-subject necessitated property will never bestow a causal power that its necessitating property doesn't bestow, and so can never be emergent; hence emergentism turns out to be trivially false for the most important class of cases at issue in the hysicalism/emergentism debate.

There are various moves one can make here, including rejecting the nomological sufficiency account of causal power bestowal. But supposing one wants to retain this weak, but useful account of bestowal, a naturalist attention to scientific detail can provide an alternative response.

The response proceeds by noting that, according to our best science, the causal powers of properties are grounded in particular fundamental forces, or interactions. The causal power bestowed by the property being negatively charged, to attract a positively charged particle, is grounded in the electro-magnetic force; the causal power bestowed by certain quantum color properties, of being able to bond with other atomic nuclei in a stable configuration, is grounded in the strong nuclear force; the causal power of being able to sit on a chair without falling through it is grounded (at least) in the gravitational and the electromagnetic forces; and so on, and so on. In virtue of grounding the causal powers bestowed by properties, fundamental forces explain, organize and unify vast ranges of natural phenomena.

The above facts and theses are ones that a naturalist metaphysician can take into account in their theorizing. Of course, philosophical work needs to be done to ensure that the operative notions-of fundamental forces/interactions, and of the "grounding" relation holding between fundamental forces and causal powers-make sense, from a metaphysical point of view. But assuming all goes well on these fronts, these notions can provide the resources needed to fix up the new causal powers account, as follows.

As per the truisms above, it apparently makes sense to speak of the causal powers of a property relative to a particular set of fundamental forces/interactions. So, we can speak of the causal powers a property has relative to the set of fundamental physical forces—the only forces that physicalists think exist. What I propose, then, is that we see the emergentist as claiming that emergent properties bestow at least one causal power that is not grounded only in physical forces—that is, in other words, partially grounded in some non-physical force (i.e., a force operative only under conditions of a high level of complexity—for example, those associated with mentality). This allows the emergentist to grant that, taking all fundamental forces into account, the brain property P bestows every causal power the mental property M bestows, while still maintaining that M is emergent, in virtue of bestowing a causal power that is "new" relative to those causal powers of P grounded only in fundamental physical forces.

Elsewhere I have argued that this sort of "force-relative" account of over and aboveness is capable of serving as a basis for viable formulations of physicalism and emergentism; and I have also argued that fundamental forces/interactions can be appropriately understood as collections of interacting fields (which understanding in turn suggests a particular account of the grounding relation, holding between fundamental forces and causal powers). Here it's worth noting that in spite of the fact that our best-confirmed scientific theories are field theories, associated with distinct fundamental interactions, there are no fully-developed metaphysical accounts of either fundamental interactions or fields. This may be, in part, because our main handle on forces and fields is primarily through the sciences; and hence the contours of the associated concepts are less likely to be amenable to the tools of conceptual analysis, at least as usually practiced. In my view, this is further indication of the usefulness of naturalist metaphysics: since it takes the facts and theses of our actual practices as a starting point, it is perfectly suited to investigate into the primarily theoretical concepts of the sort at work in contemporary physics; and it is also less likely to neglect these extremely important features of reality.

## **Case study 2: The nature of scientific properties**

I next want to consider the dispute over whether it is essential to scientific properties that they be governed by the causal laws that actually govern them (or laws relatively similar to these). This dispute is closely related to that over whether the laws of nature are necessary or contingent, since these laws for the most part express causal interactions among properties (instanced in substantial particulars, events, or what-have-you). One can be extreme in either direction here, with some philosophers (e.g., Sydney Shoemaker) saying that (with certain exceptions) all its actual governing laws are essential to a scientific property, and some (like Lewis and David Armstrong) saying that (with certain exceptions) none of them are. And of course there are intermediate positions. In what follows, I'll canvass some considerations indicating that a naturalist approach supports something much closer to the "essentialist" or "necessitarian" position on the spectrum than to (what I'll call) the "extreme contingency" view.

Philosophers endorsing the extreme contingency view tend to cite the conceivability of scenarios in which the same properties are governed by completely different laws (as does Alan Sidelle) or else appeal to philosophical principles, such as Hume's principle that there are no metaphysically necessary connections between distinct existences (that is, connections holding in all possible worlds, of the sort that the essentialist believes to exist between properties), as entailing the view. So, for example, Lewis and Armstrong each appeal to Hume's principle along the way to motivating a 'principle of recombination' that is to guide deliberations about what is or

is not possible: roughly, the idea is that (with few exceptions) anything can exist, or not exist, with anything else. So Lewis says

Another use of my principle is to settle-or as opponents might say, to beg-the question of whether laws of nature are strictly necessary. They are not; or at least laws that constrain what can coexist in different positions are not. Episodes of bread-eating are possible because actual; as are episodes of starvation. Juxtapose duplicates of the two, on the grounds that anything can follow anything; here is a possible world to violate the law that bread nourishes. So likewise against the necessity of more serious candidates for fundamental laws of nature [...]. (On the Plurality of Worlds, p. 91)

I'll shortly argue that these motivations are suspect from the perspective of naturalist metaphysics. But first, it's worth noting that the usual philosophical arguments for the essentialist view (or views closer to that end of the spectrum) do conform to a naturalist approach. One argument for the essentialist view proceeds by citing the fact that our main reason for positing properties, in both ordinary experience and in science, is to track similarities and differences in the causal potentialities and actualities of substantial particulars: for a substantial particular to have a given property is just for the particular to be able to engage (in appropriate circumstances) in certain causal interactions rather than others. In other words, properties (of the sort characterizing natural phenomena, at any rate) appear to be defined by reference to fairly specific causal laws. A related epistemological motivation for essentialism proceeds by noting that if the identity of a property depends on something entirely distinct from its governing causal laws (as the extreme contingency view assumes), then we will not be able to know things we take ourselves to know; for example, whether something has a particular property or not, or whether two substantial particulars resemble in virtue of sharing a property. Since we do take ourselves to know these things, the argument goes, we should reject the extreme contingency view and allow that the nature of scientific properties depends, to some significant extent, on the causal laws that actually govern them

These arguments reflect a naturalist methodology, according to which one's metaphysical account should be sensitive to the facts and theses of actual experience bearing upon the feature under investigation. Moreover, since what is at issue here is the nature of scientific properties, naturalist metaphysicians will want also to consider what scientists and science have to say, explicitly or implicitly, about the matter. Those few scientists who have addressed the question seem to favor something in essentialism's ballpark, as does Bohm:  
<![endif]>

[C]ausal laws are not like externally imposed legal restrictions that, so to speak, merely limit the course of events to certain prescribed paths [...] rather, they are inherent and essential aspects of these things [...] Likewise, the general mathematical laws of motion satisfied by bodies moving through empty space (or under any other conditions) are essential properties of such bodies, without which they could not even be bodies as we have known them. Examples of this kind could be multiplied without limit. They all serve to show that the causal laws satisfied by a thing [...] are inextricably bound up with the basic properties of the thing which helps to define what it is. (Causality and Chance, p. 14)

Bohm's view is supported by the interesting, and in my view crucial, fact that we never experience (or posit) properties as apparently persisting through changes in the causal powers. On the contrary: whenever a substantial particular S comes to have different causal powers at  $t_2$  than it did at a previous time  $t_1$  (when in the same circumstances), we uniformly assume, both in ordinary and in scientific contexts, that S came to have one or more different properties at  $t_2$  than it had at  $t_1$ , not that the properties S had at  $t_1$  came to be governed by different laws at  $t_2$ . This fact is one of the things that any account of the nature of scientific properties should accommodate, and it is straightforwardly explained by something in the ballpark of the essentialist view.

Extreme contingency theorists may claim that their view also explains this fact, since they suppose, as a rule, that the laws governing scientific properties remain the same within a world. One may wonder what right they have to suppose this; but let's put that issue aside here. In any case, since their further claim that scientific properties could be governed by completely different laws at different worlds is not obviously supported by ordinary experience or science, a naturalist metaphysician will want some reason for believing it, as an appropriate triangulation on the range of our practiced beliefs about scientific properties. So let us now return to the reasons usually given in support of the extreme contingency view, and assess these from the point of view of a naturalist metaphysics.

First, what of support for the view stemming from our being able to conceive of worlds where properties (such as having negative charge) are governed by completely different laws (such as those actually governing having gravitational mass  $m$ )? As previously indicated, the naturalist metaphysician will not be much persuaded by the mere fact of conceivability alone, as a guide to possibility. They will want some evidence, again grounded in relevant actual facts and theses, that such imagined scenarios are genuinely possible. To the extent that those appealing to conceivability considerations do cite such actual facts and theses, however (and they usually don't), these don't support the extreme contingency view. For example, in discussing intuitions" that scientific properties could be governed by different laws, Armstrong cites the fact that scientists consider a range of possibilities when constructing hypotheses concerning what laws actually govern a scientific property. While a naturalist metaphysician will appreciate Armstrong's attempt to find support for his view in scientific practice, the attempt doesn't succeed; for while scientists do consider multiple such hypotheses (and putting aside the worry that these hypotheses represent merely epistemic, as opposed to genuine, possibilities), the range of these is not broad enough to support the extreme contingency view. When scientists were fishing about for the laws governing having negative charge, for example, they presumably did not consider the hypothesis that the laws were just like those actually governing having gravitational mass  $m$ .

Second, consider the philosophical principles usually cited for the extreme contingency view: Hume's principle that there are no metaphysically necessary connections between distinct existences, and the modal principle of recombination that Hume's principle inspires. It's worth recalling that Hume's reasons for endorsing his principle derived from his acceptance of a limited set of acceptable forms of reasoning, which did not include inference to the best explanation (so that one is barred from so inferring to the existence of metaphysically necessary connections), and where the allowable forms (so Hume argued) fail to warrant belief in such connections.



Contemporary scientists do not accept Hume's epistemological constraints, however; in particular, inference to the best explanation is an acceptable method of scientific justification and explanation, if any method is. (Indeed, contemporary advocates of Hume's principle don't accept Hume's constraints, either, but seem mainly to accept his principle as an interesting constraint on their theorizing.) Moreover, it appears that scientists do infer to the existence of metaphysically necessary connections between distinct existences, though presumably they wouldn't put it that way. For example, contemporary expositions of particle physics and field theory are rife with talk of "essentially determined" force laws and "compulsory" existences. Why not take these claims at face value? In any case, the usual motivation for the extreme contingency claim rests on a principle based in denying what is arguably the primary tool of scientific methodology; hence a naturalist metaphysician has at least *prima facie* reason to reject this principle.

What about the principle of recombination that more directly motivates the extreme contingency view? Again, keeping in mind that what is at issue here is the nature of scientific entities, a naturalist metaphysician will want their modal reasoning about such entities to accommodate the facts about how scientists reason about the possibilities for such entities. On this score, it seems likely that scientists would respond with an incredulous stare to Lewis's claim that, for example, "[I]f there could be a talking head contiguous to the rest of a living human body, but there couldn't be a talking head separate from the rest of a human body, that [...] would be a failure of plentitude. (I mean that plentitude requires that there could be a separate thing exactly like a talking head contiguous to a human body)" (On the Plurality of Worlds, p. 88); and similarly for Lewis's claim that plentitude requires that (with few exceptions) any fundamental physical property might or might not be paired, as a matter of law, with any other. Of course, philosophers often say things that surprise scientists. Beyond the incredulous stare, however, it seems likely that scientists will reasonably deny that there are these sorts of gaps in the space of possibilities, such that the principle of recombination is required in order to fill them. It is, at the least, extremely unclear how to reconcile the principle of recombination with scientific practice, insofar as it is evident that scientists do not modally reason in accordance with this principle. Hence a naturalist metaphysician also has *prima facie* reason to reject this principle, and the extreme contingency view it entails.

Of course--and this is why I say only that a naturalist metaphysician has *prima facie* reason to reject the above principles--an account in line with naturalist methodology need not deem all the relevant facts and theses in the "data set" correct. As previously noted, it is only required that such an account accommodate these facts and theses, which is compatible with rejecting them, while explaining them away. However, two points. First, other things being equal, philosophical accounts of a given feature of reality that do not require extremely revisionary understandings of wide ranges of actual practice (that, in particular, have bearing upon this feature) are to be preferred to those that do require this. Second and relatedly, the more revisionary the account, the heavier the burdens incurred when it comes to (a) motivating the revisionary account and (b) explaining away the facts and theses that the account deems misguided or incorrect. The above principles are revisionary in the extreme, insofar as they are at odds with pervasive facts concerning scientific methodology and modal reasoning; but so far as I can see, advocates of the extreme contingency view neither satisfactorily motivate the principles, nor satisfactorily explain away the pervasive facts the principles undermine.

Finally, extreme contingency theorists might attempt to support their view on grounds that scientific properties have an intrinsic aspect or identity, that enables properties to be the same, in spite of being governed by completely different laws. Both Armstrong and Lewis accept that properties have intrinsic (Armstrong also says: primitive) identities. But what facts or theses support thinking this?

One answer, due to Armstrong, is posed in the form of a question: "[W]hy need properties have essential features at all? Perhaps their identity is primitive. To uphold this view is to reject the Principle of the Identity of Indiscernibles with respect to properties. Properties can be different, in the same way that, many of us would maintain, ordinary particulars can just be different although having all their features in common [ . . . ] properties can be their own essence" (What is a Law of Nature? , p. 160). More to the present point, to allow that properties can have primitive identities (that are intrinsic in being independent of the relations-in-particular, causal relations-properties enter into) is also to reject the Distinctness of Discernibles: properties can be the same, in spite of being governed by completely different laws, in the same way (we might see Armstrong as suggesting) that ordinary substantial particulars can be the same, in spite of having none of their properties in common.

However, if the argument for properties' having primitive identities is supposed to turn on an analogy to substantial particulars' having primitive identities, then the argument will fail. First note that there is a case, in line with a naturalist metaphysics approach, for thinking that some substantial particulars, at least, have primitive identities. For in the case of some substantial particulars, there is something to explain—namely, our common experience of these particulars persisting through relatively extreme changes in their properties (as when a single human moves from infancy to adulthood, for example)—for which the posit of a primitive identity is the best, or in any case a reasonable explanation.

But—and here we return to the aforementioned crucial fact about properties—we do not have experience of properties apparently persisting through extreme changes in their governing laws; nor do the relevant facts and theses of actual practice provide any ground for thinking this is genuinely possible. So there is no motivation here, as there arguably might be in the case of substantial particulars and their properties, for thinking that properties have an identity completely independent of their governing laws. There is nothing to explain, such that the thesis that properties have primitive identities would be the best, or in any case a reasonable, explanation of it. So the analogy fails, and the extreme contingency view remains unsupported, by naturalist metaphysics lights.

Of course, it might be that there is some other justification for this view, besides those considered here, that would make sense by these lights; and moreover I don't claim that my necessarily brief argumentation here is decisive. But it is, I think, suggestive. As usually motivated, the extreme contingency view appears not to appropriately line up with the relevant areas of our experience. By way of contrast, the view that does triangulate well both with ordinary experience and scientific practice is something in the vicinity of the essentialist view.

This concludes my mini-manifesto in support of naturalist metaphysics. It may be that philosophers have continued to operate with a conception of metaphysics as conceptual analysis,

in spite of its evident methodological difficulties, because they thought the alternative was to give up doing philosophy and start doing empirical science. Here I hope to have convinced you that a greater sensitivity to empirical considerations is compatible with the metaphysical goal of providing distinctly general accounts of interesting features of reality. Naturalist metaphysics provides a position intermediate between the sciences (and more generally, the diverse areas of actual experience) and "armchair" metaphysics, where science and philosophy can exert an *appropriate* mutual influence on each other.