MAGNETIZED MEDIA

A Phenomenology of Personal Technologies

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I.   Preface

In the fall of 2020, I decided to take a semester off of college. I was in the middle of an academic period that felt nearly devoid of meaning and value; my recollection of the work I produced and the literature I read that fall is practically nonexistent. I was unable to actively participate in a curriculum disseminated entirely through my laptop – I'd log on to Zoom, try to listen for a couple of minutes, and inevitably resort to browsing the web, texting a friend, checking ESPN or the New York Times. I knew that to undergo another semester of Zoom-tinted college would be a waste.

From ages ten to fifteen, I spent every summer as a trekker at Cottonwood Gulch Expeditions. The Gulch is an outdoor education nonprofit that leads expeditions of varying lengths for kids aged ten to eighteen. For me, it was a place that revealed the sublime. The pinnacle of my time at the Gulch came in 2015 when my group went from a week scaling peaks in the San Juan Rockies in Colorado to a night on the bluffs of Muley Point, Utah. The campsite sits on the top of a plateau, yards away from a 2,000-foot drop-off. Directly below sits the gooseneck canyons of the San Juan river; the horizon is dotted with the iconic buttes of Monument Valley. To this day, Muley Point looks the same as it has for untold generations. The only sign of human existence is the dirt road that gets you there. On a clear, moonless night, there's no need for a headlamp – the Milky Way is bright enough to play cards under.

Muley Point, July 2022.

During my semester away from school, as I idled away the days with little to occupy me other than video games and bike rides along the Huron River, I decided to return to the Gulch as a counselor. I'd get to reacquaint myself with the magic of the four corners, sleep under the stars, climb mountains – in essence, it was a chance to live a totally different kind of life for a couple of months. On top of that, I'd get to give back to an organization that was integral in my development as a person. That summer was full of uncertainty and tribulation – a coworker with whom I disagreed, a ten-year-old whose homesickness I struggled to assuage, thunderstorms and flooded campsites – but it was a summer every bit as magical as those of my youth. It also facilitated the insights that led me to this project.

I spent two and a half months in my role as a counselor/expedition leader/van driver at the Gulch – and life was very different. My phone usage decreased drastically. I still had it with me most of the time – to play music during van rides, in case I had to get in touch with

management or an angry parent – but I rarely used it for anything else. My computer usage practically disappeared, except for a couple of hours spent planning expeditions and emailing parents. I read fiction that summer (specifically, I read fiction for leisure) more than I had for a decade. I slept better than I normally would at home in Ann Arbor. My social interactions with coworkers felt more immersive and meaningful than similar interactions with my friends back home.

It wasn't only social interactions that felt more meaningful – my everyday experience began to follow suit. At any given moment, I felt more in tune with my surroundings – less easily distracted, and more easily engaged. I felt an expansion in my own capacity to shape my everyday experience. By this I mean that I had more control over where I placed my attention, and how I positioned myself to interact with others and the world. I was less susceptible to the affordances granted by my surroundings. It seemed as if my experience, bit by bit, became increasingly imbued with *intention*. These changes occurred gradually; there was no *eureka!* moment. Over time, I saw an intimate connection between the noticeable changes in my subjective experience and my relative distance from my devices. This is not to say that there weren't other factors at play, of course. That summer I spent more time outside, got more exercise and ate more regular meals. Still, I was sure that I'd stumbled upon a question worth exploring. I wanted to better understand the relationship between the ubiquitous technological tools that populate our world and the ways in which we experience that world. Hence, this project.

II. Introduction

Smartphones and personal computers have become ever-present fixtures in everyday life for great swaths of humanity. Reading, watching, researching, planning, communicating, sleeping, waking up – innumerable, essential facets of everyday activity can be mediated by these devices. They are involved in our relations to the world, to others, and to ourselves. In recent years, concerns around our contemporary technological situation have blossomed. Is Facebook killing democracy? Is Instagram destroying the mental health of an entire generation? Is TikTok allowing the CCP to spy on American citizens? Are smartphones addictive? These questions are united by an existential concern – what do ubiquitous forms of technology mean for the human condition?[1] These concerns feel especially pressing for those of us who have only fragmentary memories of a pre-iPhone world – and even more so for children today who learn to type as they learn to write. In the introduction, I will start by specifying the scope of this project and motivating the restrictions I make. I will then discuss the terminology I use going forward, and my methodological approach to this project. Finally, I will introduce my central argument and provide a roadmap for the project in its entirety. My central claim is that the contemporary state of human-technology relations inhibits the capacity to live well.

II.1 Scope

II.1.1 What technologies?

My thesis centers on the relations between humans and their personal digital technologies. This includes laptops, smartwatches, tablets, and smartphones – perhaps the paradigmatic example of this category. I have excluded desktop computers from the scope

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[1] Andrea Pace Giannotta, "Digital World, Lifeworld, and the Phenomenology of Corporeality." *Azimuth* 14 (2019): 109–20.

because they lack an important material affordance – they are not portable. The fact that I carry my phone in my pocket and my laptop in my backpack allows the (human-technology) relation more time and space to deepen and gain complexity. Put simply: the (human-desktop) relation is spatially restricted, and the (human-laptop) or (human-smartphone) relations are not.

I have also excluded the devices of others from the scope here – I am interested in the relation between a person and *their* devices, not iPhones at the Apple Store or a laptop rented from one's university. There are a few reasons for this. First; the (human-[other] smartphone) relation is more quantitatively restricted than the (human-[personal] smartphone) relation. We use our devices far more than those of others (a notable exception being those who are given a smartphone or laptop by their employer – even then, these devices can be personalized over time). This restriction makes the *other* relation more static than the *personal* relation – devices of others are used sporadically, normally for a specific purpose; for instance, using a friend's phone to make a call when yours runs out of battery. On the other hand, personal device-relations develop a certain transparency in use – the human awareness of the materiality of the device recedes, and it is used as an extension of the self. For instance, when speaking to someone on the phone, the awareness of the process (signals bouncing between satellites) and the medium (the phone) recedes. We speak as we would if the other person were across from us – the materiality of the object recedes from awareness. Postphenomenologists describe this as an embodiment relation.[2] This transparency develops as one's patterns of use with a device become intuitive habits over time: "When a user is habitual with digital media he or she can see what is in reach,

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[2]Robert Rosenberger and Peter-Paul Verbeek, "A Field Guide to Postphenomenology." *Postphenomenological Investigations: Essays on Human-Technology Relations*, 2015, 9–41.

and the spaces on the screen and the keypad do not stand out but are incorporated into the body schema".[3]

Another way of illustrating this point is to turn to the idiosyncrasies of our devices. For instance, my phone occasionally inverts the color gradient of the screen, unprompted. In short: the colors on the screen go wonky. I know this because it's happened enough that I know it's not that I accidentally pressed the wrong button. When it happens, I know exactly how to reverse it – after all, I've done it countless times. As we develop habits of use, we become familiar with these kinds of idiosyncrasies, and they alter the process of habit development – what phenomenologists call sedimentation.[4] I will say more on sedimentation in chapter one – but for now, the important point is this: as habits sediment over time, the actor's conscious awareness *of* carrying out the habit recedes. So, when my phone reverses the color gradient, I don't think about how to reverse it – I just do. The knowledge is 'in my hands.'[5] Habits mediated by (Human-[personal] device) relations are more sedimented than (human-[other] device) relations – and this makes them more difficult to pin down. The knowledge of this relation is in our hands, not our heads. Furthermore, people can become in some way emotionally attached to their personal effects. This is true for devices, water bottles, backpacks, wallets, and more. We often become attached to *our* things in a way that we do not to *other* things. Again, this complexifies the relation of interest.

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[3] Stacey Irwin, *Digital Media: Human–Technology Connection.Digital Media: Human–Technology Connection,* Rowman & Littlefield, 2016.

[4] Phrase coined by Maurice Merleau-Ponty, *Phenomenology of Perception.Phenomenology of Perception*, Motilal Banarsidass Publishe, 1996, 131.

[5] Ibid. 131.

II.1.2 Terminology

I will herein refer to personal devices as magnetized digital technologies (MDTs). 'Digital technologies' (DTs) are defined by Galit Wellner as technologies that operate in the digital sphere rather than the analog and require digital production processes.[6] The precise extension of this term is difficult to specify – for instance, it seems to include a digital clock, which is beyond the scope of my thesis. However, Wellner goes on to offer that "the output [of DTs] is nonphysical and informational."[7] This further criterion indicates the role of the screen as a conduit for informational output. The term is imperfect, but adequately evokes the idea of a device with a screen. The modification of 'magnetized' does a couple of things. First – it resonates with the phenomenological feeling, familiar to many of us, that our devices 'pull' us. So, why 'magnetized' as opposed to 'magnetic'? 'Magnetic' evokes the image of a magnet – something that attracts something else in virtue of the kind of thing it is. A magnet *necessarily* is attracted by ferrous metals. 'Magnetized', on the other hand, sheds light on the process of magnetization. The 'pull' of MDT-relations is one that evolves over time as habits of use become sedimented and technology develops.

II.2 Materiality

II.2.1 Locus of relation

One further question around scope remains: why have I chosen to discuss human-MDT relations, instead of solely (human-[personal] smartphone) relations or (human-[personal] laptop) relations? Why not just one class of devices? Such a classification is increasingly difficult to make – where is the boundary between an iPhone and an iPad? Both can be equipped with cell reception, both run on iOS software, and the iPad mini is closer in size to the largest iPhone than

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[6] Galit Wellner, *A Postphenomenological Inquiry of Cell Phones: Genealogies, Meanings, and Becoming.* 2.
[7] Ibid. 8.

to the largest iPad.[8] To draw non-arbitrary distinctions between smartphones, smartwatches, tablets, and laptops seems quite difficult – and, in my view, counterproductive. Consider the role of the material device itself in the (human-MDT) relation. I argue that (human-MDT) relations are becoming increasingly less materially defined. To make this argument, I'll start with an anecdote. My parents are both academics whose work lives heavily involve their laptops. I have a vivid memory from circa-2010 of my mom getting a new computer; it was a stressful process. She had to transfer the entire contents of her laptop – practically everything she needed to do her job – onto multiple physical hard drives. The process was long and unintuitive. Files had to be laboriously transferred over, with plenty of opportunities for missteps. Each backup took hours. This process looks drastically different today – most of the value stored in our devices is or can be stored in the 'cloud'. Materiality has not vanished here – the cloud needs massive data centers to operate – but it has become hidden from the user. One doesn't need to understand the mechanisms underlying this capacity to understand that our MDTs are becoming more of jacket covers than actual books. In the same vein, making a new smartphone 'your own' (downloading your apps, choosing a screensaver, etc.) is far less arduous now than it was ten years ago. The material constraints of the (human-MDT) relation are weakening, and the locus of the relation is migrating away from the device and towards the personal 'digital lifeworlds' that we each carve out. By 'digital lifeworlds', I mean the entire corpus of our relations to the world that is mediated by an MDT. The things I download, the messages I send, the accounts I create, the things I watch, and the backgrounds of my iPhone and my laptop – these are all features of my digital lifeworld.

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[8] Apple.com

II.2.2 Evolving Materiality

This is emblematic of an overarching trend in (human-MDT) relations: they are increasingly characterized by ease and intuitiveness. For instance, think of unlocking an iPhone. It used to require physical interaction – entering a passcode, or placing a thumb on the fingerprint sensor. Now, it requires only a glance at the facial recognition sensor in the camera. A friend of mine[9] who studies user experience (UX) designers described 'ease of use' as a central objective of the field. So, it stands to reason that MDTs are becoming materially more intuitive – unless the entire field of UX is failing to accomplish one of its central goals. This suggests that companies that build multiple kinds of MDTs like Apple strive to chip away at the material constraints of MDT-relations so that users can take advantage of the *material* affordances of different devices while preserving access to a unified, MDT-mediated digital lifeworld.

Let's use an example here: I am more likely to use my phone on a train than my laptop. I might be standing, the train might be crowded, and my phone is far less cumbersome. The *material* affordances of my phone make it easier to use in certain settings. The same is true of a laptop – if I need to write a paper, I would rather have access to a physical keyboard. Because of cloud storage and interconnected accounts logged into multiple devices, I can use my phone for a lot of the same things that I might use my computer for. I can access my Google Drive with all my written work, I can email a professor – I can even read the PDFs I store in Adobe Acrobat. In the opposite mode, I can place calls and send texts from my phone number on my computer. This would not have been the case ten years ago. The central affordances of MDTs – the different possible ways of relating to the world they afford – are increasingly *immaterial* in the sense that they are less and less restricted to the materiality of a certain device.

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[9] Mia Yancich, in conversation

This is not to say that MDT-relations are or will ever be entirely immaterial. The closest we could get would probably be some sort of neural implant, which regardless of its ethical status (objectionable, in my view) is still material – there's still an ontologically distinct physical object mediating the relation. Furthermore, the importance of the personal aspect of MDT-relations spares the material from insignificance. Even if we reach a point where the material grounding of our digital lifeworlds is completely obscured[10] – if, for instance, they were linked to our fingerprint or face and could be accessed instantly through any material device with the requisite technical capabilities – our relation would still in practice be materially constrained. We would still likely have *our* devices, in the same way that I choose to drink from *my* water bottle when I could just as easily drink from a fountain. We would still develop an attachment to those devices. I use my water bottle because of the stickers I've put on it, the dents I've caused, and the memories it figures into – the years have imbued it with meaning. To sum up; the material constraints on MDT-relations are weak enough to require consideration of more than one kind of device, but strong enough that it makes sense to focus on personal devices.

II.3 Methodology

II.3.1 Merits of Postphenomenology

Philosophical thought around technology takes many forms. Of the common schools of thought, my thesis is most closely allied with the postphenomenological approach – defined here by Peter-Paul Verbeek and Robert Rosenberger:

> First of all, [postphenomenological studies] all investigate technology in terms of the relations between human beings and technological artifacts, focusing on the various ways in which technologies help to shape relations between human beings and the world. They do not approach technologies as merely functional and instrumental objects, but as mediators of human experiences and practices. Second, they all combine philosophical analysis with empirical investigation. Rather than "applying" philosophical theories to

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[10] There would of course still be material grounding in data storage facilities, or something similar.

technologies, the postphenomenological approach takes actual technologies and technological developments as a starting point for philosophical analysis. Its philosophy of technology is in a sense a philosophy "from" technology… *Technologies, to be short, are not opposed to human existence; they are its very medium.*[11]

The last sentence provides insight into the ontological conception of technologies held by postphenomenologists. In short – technologies are not mere tools, nor are they understood as a unified category of objects reducible to some essential characteristics. Technologies are mediators and enablers of human interactions with the world. So, everything that we interact with in life (other than each other) is a technology – the clothes we wear, the pens we write with, the plates we eat from. This expansive approach to technologies allows postphenomenologists to avoid pitfalls of earlier philosophical approaches to technology that have been labeled as essentialist, romanticized, and deterministic. Heidegger's seminal essay "The Question Concerning Technology" is a frequent target of such critiques: "[Heidegger and his ilk] studied "Technology" as a broad, social, and cultural phenomenon, with a special focus on the ways in which technology alienates human beings from themselves and from the world they live in."[12] For the postphenomenologist, this approach simplifies diverse technologies into 'Technology', and fails to account for the fact that human life is always necessarily mediated by technologies. Postphenomenology aims to give a better understanding of how technologies mediate human experience and practices by focusing on specific human-technology relations and starting their investigation from these relations – whereas Heidegger's approach is top-down, postphenomenology's is bottom-up.

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[11]Rosenberger and Verbeek, "Field Guide," 9-13.
[12]Ibid, 10.

II.3.2 Non-neutrality

Like Heidegger, postphenomenology emphasizes the non-neutrality of technologies: "what humans are and what their world is receive their form by artifactual mediation. Mediation does not simply take place *between* a subject and an object, but rather *coshapes* subjectivity and objectivity"[13].... "A mediating technology enables certain possibilities for a user, while perhaps also foreclosing others, all of this relative to the particular user, the particular device, and the particular use-context."[14] A telescope shapes my subjectivity by mediating my relation to the world and my access to the objectivity of the moon. Let's use another example here. Think of Joe the conspiracy theorist in 1950, attempting to spread his beliefs. Joe stands in a town square, shouting about Roswell into a megaphone. A few people stand around and listen – a few of those are convinced. After hours of shouting in the hot sun, Joe earned himself half a dozen converts. Now, imagine Joe has the same objectives, but in 2023. He doesn't go to the town square. Instead, he replies to every tweet made by a class of public figures he deems likely to take the bait (or be followed by people who might) – maybe Elon Musk. After 100 tweets, Joe has gained 10,000 followers – and countless more Twitter accounts have engaged with his tweets. Joe's message has become exponentially amplified, and this is due to the mediating technology. A smartphone can reach a *lot* more people than a megaphone – so, while Joe's intent may be unchanged, his impact is not. It may even be that Joe would never have fallen into a conspiratorial mode had he not had an iPhone.

When criticisms are levied at the tech industry, defenses often hinge on an assumption of technological neutrality – expressed in language that deems technology a mirror. The thinking here is something like "social media isn't bad, it just reflects human nature – it's us that are bad,

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[13]Peter-Paul Verbeek, *What Things Do: Philosophical Reflections on Technology, Agency, and Design.*, 130.
[14]Robert Rosenberger, "Multistability and the Agency of Mundane Artifacts: From Speed Bumps to Subway Benches." 375.

and social media allows us to see that". My closest friend is a computer engineer who often puts things in these terms. This line of thought can look past the fact that technologies play a role in the emergence of new forms of behavior – showcasing personal information on a social media platform or rapidly disseminating hateful messages from an anonymous account. These new forms are not reducible to the technological mediator nor to the human actor; they emerge from the human-technology relation. Since these behaviors can be non-neutral – anonymous dissemination of hate speech, for instance – the technologies involved in the agency behind these behaviors must be as well. In February, I attended the first Conference on Technology and Social Cohesion[15] in San Francisco. The attendees were mostly non-profit employees, peacebuilders, and technologists. Colin Rule – a technologist who designs conflict mediation software – put non-neutrality in a different way: "Algorithms are opinions expressed in mathematics".

II.3.3 Departures from Postphenomenology

My thesis departs from the method of postphenomenology in a few ways. First – I conducted no empirical research of my own. This is not a necessary criterion for a postphenomenological project, but concrete case studies are often involved.[16] Unsurprisingly, these kinds of projects tend to focus on a specific human-technology relation in a specific context; laptops in a classroom or cell phones in cars. My focus is not restricted to a specific, contextually-defined relation; MDT-relations are of interest partially because they occur in a diverse array of contexts. Where postphenomenology sometimes goes to great length to describe

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[15] Conference on Technology and Social Cohesion: https://techandsocialcohesion.org/conference/
[16] See Aagaard, "Drawn to Distraction: A Qualitative Study of off-Task Use of Educational Technology." *Computers & Education* 87 (September 1, 2015): 90–97. Or
 Rosenberger, "Embodied Technology and the Dangers of Using the Phone While Driving." *Phenomenology and the Cognitive Sciences* 11, no. 1 (March 1, 2012): 79–94.

the specific shape of a particular relation[17], my focus is broader. MDT-relations resist this approach largely due to their dynamic, obfuscatory character.

Postphenomenology has been criticized along a number of lines; for instance, its refusal to clearly define what is meant by 'technology,'[18] and its inability to account for the existential impact of technology.[19] In the interest of time and space, I will not go too deeply into these criticisms (largely directed towards Don Ihde, perhaps the seminal figure in postphenomenology), except to acknowledge the weight of the existential critique. The motivation driving my thesis *is* existential in nature – and my argument attempts to make normative claims about the existential blowback of contemporary MDT-relations. Put simply – my thesis places an understanding of the existential implications of MDT-relations as a central objective. This is not an attack on postphenomenology; each method has its merits, and one might surpass and lag behind another across domains. Postphenomenology may lag behind other approaches in describing the existential implications of human-technology relations; I hope to avoid this pitfall.

A similar critique holds that postphenomenology is unable to account for the social aspect of human-technology relations. Robert Rosenberger, a leading postphenomenologist, puts it like this: "A postphenomenological account of an individual human-technology relation is incomplete—even in its own terms—without an understanding of how that technology has been shaped by larger communities of actors."[20] In my view, this critique is especially pressing in a discussion of MDTs; not only do MDT-relations often mediate social activity, but an

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[17] Don Ihde, *Technology and the Lifeworld: From Garden to Earth*. Indiana University Press, 1990.
[18] Martin Ritter, "Philosophical Potencies of Postphenomenology." 1511.
[19] Ibid, 1506.
[20] Rosenberger, "Multistability and the Agency of Mundane Artifacts: From Speed Bumps to Subway Benches." 389.

understanding of the structure of the relations themselves requires attention to the social context of the individuals involved.

II.4 MDT Agency

II.4.1 The Agency Problem

MDTs are regular and powerful mediators of everyday human experience and activity; they figure centrally into how we live. I describe this capacity as MDT agency. On technological agency more generally, Rosenberger writes:

> Various theories attempt to come to grips with what role—if any—should be ascribed to technologies themselves within accounts of the larger social collectives of people and objects within which those technologies are used. Does the agency of a technology somehow reduce to the choices and actions of its user? Or does a technology instead somehow shape a user's choices and actions? How should we conceive of the ways that a technology is at once both constructed by a collective of actors and at the same time maintains an influence on that collective? Let us refer to this issue as the "problem of technological agency".[21]

Rosenberger hones in on a central question here. It seems clear that MDT agency is significant enough to warrant attention; How exactly to understand that agency is less clear. Rosenberger and Verbeek further elucidate the metaphysical implications of a postphenomenological approach to technological agency:

> When postphenomenology claims that technologies play an actively mediating role in human- world relations, it does not claim that things can act just like humans do. Such a claim would actually reproduce the modernistic subject-object split, by attributing the characteristic of subjects to objects as well. The question is not: is agency not only a property of subjects but also of objects? Rather, the question is: what kind of roles do objects play in agency? Agency, then, is not an exclusively human property anymore: it takes shape in complicated interactions between human and nonhuman entities.[22]

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[21] Rosenberger, "Multistability and the Agency of Mundane Artifacts", 370.
[22] Rosenberger and Verbeek, "Field Guide," 20.

MDT agency is not reducible to the individual or the material device. I use 'agency' here to refer to MDT-relations, not MDTs themselves – I do not mean to suggest that objects are conscious actors, but rather to align with Rosenberger and Verbeek in seeing agency as constituted by more than just humans. In order to assess the breadth of MDT agency, we must first describe its constitution.

II.4.2 MDT Agency Constitution

I argue that MDT agency is constituted primarily by three components at three levels: technological habits at the individual level of the user, affordances at the material level of the device, and technological attitudes at the social level. Each of these components develops dialectically with the others. Technological habits sediment in a dialectic between the individual human, the material affordances of the device, and the technological attitudes of the individual's social context. Material affordances develop in a dialectic between the objectives of technologists (which are shaped by the individual technologists *and* the attitudes of their socioeconomic contexts) and the dynamic limits of technology and science. The formation of technological attitudes is more complex – but for now, suffice it to say that these attitudes emerge dialectically out of pre-existing social norms and values, individual habits, and material capabilities. MDT agency itself cannot be reduced to or explained by a single component; it emerges from all three. Any effort to address existential concerns around MDT-relations ought to attend to all three components. Finally, such an effort must understand that these components are both irreducible to one another, and also inextricable from one another. Let's turn to an example here.

Imagine Jane, a teenager who spends an inordinate amount of time on social media every day, at the expense of doing her homework. Let's imagine that Jane is aware in some sense that

she should spend less time on TikTok and Instagram – her parents certainly are. For Jane, MDT agency is quite formidable. Ironically, Jane might turn to the internet for ways to shrink the agency her MDT-relation seems to exert. She will likely find the wealth of public-facing content that describes technology as addictive,[23] something that hijacks our psychology and turns us into metaphorical rats seeking our next hit of cheese (dopamine, actually). Her parents might exhort her to cultivate self-discipline with unproductive pontification on generational weakness. She might blame her friends for being the kind of people who spend all their time on social media. Each of these three explanations – tech addiction, self-discipline, bad friends – seeks to reduce MDT agency to a neatly explainable phenomenon. 'Tech addiction' places all the emphasis on the material affordances of MDTs – and, as Aagaard argues, is underpinned by inconsistent understandings of humans and technologies.[24] 'Self-discipline' flips the script – it ignores the material and social contributions to the Jane-MDT relation, and relies on an overly simplistic conception of agency. 'Bad friends' ignores both the individual and the material. Jane's problem is not reducible to her own weakness of will, the apparently addictive design of social media apps, or her TikTok-obsessed social context; each of these components dialectically constitute one another.

II.5 Relational Character

In II.2.1-2, I argued that MDT-relations are increasingly easier to access as they become less materially defined, and more intuitive as technological developments allow for fewer and fewer steps between thought and technical action. MDT agency follows a similar trend – technologies improve and proliferate, habits sediment more deeply, and individuals and societies become more technologically oriented. The result is that the overarching character of

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[23] Refer to works cited in "Aagaard, "Beyond the Rhetoric of Tech Addiction: Why We Should Be Discussing Tech Habits Instead (and How)." *Phenomenology and the Cognitive Sciences* 20, no. 3 (July 1, 2021): 559–72."
[24] Ibid.

MDT-relations is dynamic; it bends towards increasing intuitiveness, familiarity, and obfuscation.

II.6 Roadmap

I argue that contemporary MDT-relations make it more difficult to live well, through inhibition of *experiential agency* – the capacity for an individual to cultivate certain ways of being in the world over others. I start my argument with an eye to MDT agency. The thinking here is that in order to address the existential concerns that underlie this project, I need to first understand how and to what extent MDT-relations mediate human experiences and practices. I then focus on how these relations interact with the desire intrinsic to humanity to live well. Throughout, I argue that the relational character of MDTs is becoming increasingly oriented towards easy, intuitive use; a process that obfuscates the materiality of MDT-relations.

Chapter one focuses on the primarily individual and social components of MDT agency. It starts with emergent phenomena of MDT-relations; the attachment individuals have to their phones, the contradictory social norms like phubbing[25] around MDTs, and the seeming ubiquity and inescapability of MDTs. I seek to describe the formation of individual technological habits and social technological attitudes. Chapter two approaches MDT agency from the side of the device – I examine the material affordances that constitute MDT agency, and the dialectical process that advances the development of these affordances. In chapter three, I discuss broader trends in the relational character of MDTs; how MDT-relations obfuscate materiality and orient us toward the world in certain ways. In chapter four, I argue that MDT-relations inhibit two

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[25] 'Phubbing' refers to the act of pulling out your phone while someone is speaking to you – it has been theorized by a number of postphenomenologists like Aagaard and Rosenberger, as well as scholars in other disciplines. I discuss it at greater length in 1.4.

constitutive aspects of living well: meaningful interpersonal relationships, and a certain

self-formative process I refer to as metabolization. [26]

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[26] Andreas Gailus, in conversation

Chapter 1 – Habits and Attitudes

1.1 Introduction

I aim to begin my disclosure of MDT agency by illustrating the human aspects of its constitution. I start by examining the feeling of necessity that often accompanies MDT-relations. The idea is that MDTs are frequently experienced as essential for everyday life. From here, I examine the phenomenology of individual MDT-relations as expressed in individual technological habits. I then examine the development of these habits and argue that the process occurs dialectically between individuals, devices, and social contexts. I then turn to focus on the social. The process here is similar – I start with the phenomenology of MDT necessity, explore the social constitution of that necessity as represented in technological attitudes, and examine the dialectical formation of the attitudes.

1.2 MDT Necessity

MDT-relations mediate a vast array of human experiences and practices in today's world. We are able to communicate with family, keep up with schoolwork, update our calendars, keep track of friends on social media, navigate, and relax – all with the use of a single technological artifact (the smartphone). Of course, the scope of MDT agency is dependent on the socio-economic context, as noted by Don Ihde: "Those of us who live in the *industrially developed parts of the Northern Hemisphere** live and move and have our beings in the midst of our technologies. We might even say that our existence is technologically textured."[27] The

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[27] Don Ihde, *Technology and the Lifeworld: From Garden to Earth,* Indiana University Press, 1990. *my emphasis.

'industrially developed parts of the Northern Hemisphere' does not equal 'today's world'. Still, digital technologies are increasingly widespread – smartphone penetration rates continue to grow, in developed and developing countries alike.[28]

The term 'technologically textured' – coined by Don Ihde and adopted by the postphenomenologist Stacey Irwin[29] – describes the ever-present influence of digital technologies in going about the world: "Being in the midst of our technology means continuously living with and experiencing technological entanglement in a way that changes us".[30] In order to proceed, I want to identify the ways in which this entanglement manifests phenomenologically. In the first chapter of his book, *Exposed: Desire and Disobedience in the Digital Age*, Bernard Harcourt discusses reservations that exist around MDT usage founded in concern about data collection or exposing intimate information online. Subsequently, he describes this feeling of necessity.

> And yet, even when we hesitate or are ambivalent, it seems there is simply no other way to get things done in our new digital age. No other way to reserve the hotel room or seat on the plane, to file the IRS form, to recall the library book, or to send money to our loved one in prison. No other way to do it but online. Even when we do not will it, so many of us hesitantly expose ourselves despite all our reservations and care.[31]

Harcourt here is eloquently describing a feeling common to those in sociocultural contexts like that of the American higher education system. I've had dozens of conversations with peers about our own MDT-relations. These conversations take various shapes; often they consist of complaints about the effects of MDTs on well-being. Perhaps the conversation is centered around how one's productivity suffers because of their phone, or how social media exacerbates insecurities. Regardless of the specific shape, these conversations always contain Harcourt's

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[28] "Global Smartphone Penetration 2016-2021."
[29] Stacey Irwin, *Digital Media: Human–Technology Connection,* (Lanham: Lexington Books, 2016.)
[30] Stacey Irwin, *Digital Media,* 7.
[31] Bernard E. Harcourt, "The Expository Society," In *Exposed: Desire and Disobedience in the Digital Age* (Cambridge: Harvard University Press, 2015), 13-14.

implicit assumption that there's no other way to live now. I could hate my computer, but I would have no idea how to navigate academic life without it. I might be frustrated by my phone's capacity to grab my attention and hold it, but how would I achieve social fulfillment without the connections it provides – the forms of activity it enables?

My conversations and Harcourt's passage each center around a common phenomenological manifestation of MDT agency – the *necessity* of MDTs in navigating contemporary life. This necessity (call it MDT-necessity) can emerge from material requirements, in the case of the computer scientist whose profession necessarily demands the use of a computer; or from immaterial (perhaps no less powerful, or only slightly so) nudges, in the case of the high schooler who begs their parents for a smartphone to avoid social ostracization. I do not mean to draw a dichotomy between materially-grounded MDT necessity and otherwise-grounded MDT necessity; doing so would require specifying at what point MDT necessity meets the criteria to be deemed 'materially-grounded'. More importantly, lack of easily specifiable material grounding does not make the necessity *a priori* any less real or consequential. MDT necessity provides a starting point for revealing the individual and social constitution of MDT agency more broadly.

1.3 The Individual: Technological Habits

1.3.1 Sedimentation

I argue that MDT-relations at the level of the individual are expressed as deeply sedimented technological habits. The concept of sedimentation in phenomenology dates back to Merleau-Ponty in *Phenomenology of Perception.* To introduce the concept, I'll borrow from his playbook and use my house as an example. It's the middle of the night, and I want to get some water from the kitchen. I come out the door and make a right, making sure to squint down at the

hallway rug as I do so – my cat Micah likes to lie there and swipe at passersby. As I reach the living room, I 'know' exactly where the two light switches for the dining room are, and that the light will only come on if they are both flipped down. I know that once I get to the kitchen, the streetlamp below will allow me to do what I need to; even in complete darkness, I could make it to the kitchen and back without too much issue. I know all of this information, and I know it so well – I've made the walk so many times – that it has sunk deep below my conscious awareness. When I actually undergo the process, I do so without any conscious guidance. I can do what I need to do here on autopilot; the knowledge is in my hands and in my legs. The habit of bedroom – kitchen – water – bedroom recedes from my conscious awareness through sedimentation. Sedimented habits cease to be things we *know how to* do, and become things we simply *can* do, irrespective of our conscious awareness of them.[32]

Sedimentation doesn't only apply to embodied movement; mental operations can sediment, too. I am a born and raised Boston Red Sox fan.When I hear something about the Yankees, some manner of disgust often follows. However, "this contracted knowledge is not an inert mass at the foundation of our consciousness."[33] For Merleau-Ponty, our natural attitudes[34] are constituted by a "double moment of sedimentation and spontaneity."[35] It is not as if sedimented habits, once sedimented, are irreversible determinants of experience. Instead, they are in dialogue with "the energy of our present consciousness."[36] Still, "the point is not to deny that we sometimes make conscious deliberations about what to do but to emphasize that most of

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[32] Merleau-Ponty, *Phenomenology of Perception,* 126-132.
[33] Merleau-Ponty, *Phenomenology of Perception*, 131.
[34] The natural attitude is a central concept in phenomenology; I take it to refer to the opaque mental infrastructure that structures everyday experience. It is continuously formed and tweaked by experience – and this process occurs pre-theoretically. It is opaque in the sense that it is difficult to reflect upon; conscious reflection on one's natural attitude is difficult, as it must first overcome its location within that attitude.
[35] Merleau-Ponty, *Phenomenology of Perception*, 132.
[36] Ibid.

our waking moments are spent in the pre-reflective mode of habit."[37] Sure, the thought of the Yankees doesn't *have* to be followed by disgust. I could stop and think of the twenty-five humans who make up the team – the fact that they have families who love them, that some of them probably give generously to charity, and that they brighten lives and inspire the youth of New York. In writing this, I now have – but that's the exception, not the rule. The taking up of a sedimented habit "is neither voluntary nor involuntary, but located between these two poles of agency."[38] Having sketched out sedimentation, I will turn back to MDT-relations.

Jesper Aagaard writes: "If one routinely uses the computer for specific purposes like accessing certain websites, more fine-grained habits develop. This is relevant in the context of impulsive technology use, where students describe being drawn to distraction: They often experience 'habitual distraction' in the form of a prereflective attraction towards frequently visited, but educationally irrelevant websites like Facebook. 'It's just F, A, and Enter,' as one student put it[39]". To me, this is an intuitively familiar picture. My MDTs have collected enough behavioral data[40] from me that navigating to certain websites requires nothing more than two keystrokes. In the same way that I can navigate through my house as if on autopilot, I can chain together command-T, T, and return, and I'll be on Twitter. When I'm actually walking through my house – or when I absentmindedly navigate to Twitter – my conscious attention is elsewhere. The knowledge is in my fingers, and the action takes place below the surface of my attention. The behavior isn't inexplicable at all – it's a deeply sedimented technological habit at work. Aagaard's article argues that we should replace discussions of tech addiction with a discussion of tech habits. The phenomenological conception of habit sedimentation allows Aagaard to explain

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[37] Aagaard, "Tech Addiction," 566.
[38] Aagaard, "Media Multitasking," 6.
[39] Aagaard, "Tech Addiction," 568.
[40] I speak more about this in Chapter 2.

that "it… seems true that our intuitive and skillful use of digital devices sometimes makes us do things that we do not *intend* to do,"[41] while avoiding the inconsistencies he identifies in explanations that rely on technological addiction.

Often when I sit down to work, I spend the first fifteen minutes – sometimes more – on Twitter or Instagram. I don't plan to, and I'm fully aware that this is an unproductive habit. So, which seems more likely here? that I have a subconscious motivation to check Twitter that *always* happens to rear its head whenever I sit at my computer (irrespective of the time of day, physical location, or state of mind, all of which vary tremendously)? Or that it's simply a habit that I formed years ago – and one that requires quite practically *no* conscious effort? This doesn't mean that the habit doesn't stem from some desire or motivation at some point. When I first made social media accounts, it was thrilling to open them up. Now, it's far less so. Ten minutes on Twitter normally worsens my mood, in the way that picking at my cuticles irritates my skin. Yet, I do both – not out of some opaque motivation, but because it's simply something that I do. I can reflect on these habits when they aren't taking place – when they are, reflection is far more difficult. I am not implying that these habits are of a kind; merely that they are both deeply sedimented, to the point that present as something that happens 'to' me rather than an action I consciously choose.

1.3.2 Constitutive dialectic

If we accept that MDT-relations often yield unintentional actions on the behalf of the user, it seems easy to suggest that the material affordances of the device are to blame – hence, the pervasiveness of tech addiction rhetoric. Yet, MDT agency is not a constant; some are more vulnerable to the pull of their devices than others, whether in virtue of their psychology or social context or something else. So, material affordances are not the only forces at play – as Aagaard

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[41] Aagaard, "Tech Addiction," 568.

puts it, "nothing in the laptop determines that it be used for distractive purposes, [yet] students

are habitually inclined to do so. Succumbing to this temptation is frustratingly easy since it

occurs independently of conscious decision-making, and students describe how they sometimes

close their laptops to resist this magnetically attractive affordance".[42] This passage is ripe with

key insights. First, Aagaard notes that technological habits are not *determined* by the devices that

mediate them. I do not *always* open Twitter when I sit down to do my homework. When I do, it

is not solely because of the device. I am in some way able to resist this habit – however, such

resistance is sporadic precisely because of the habit's unconscious nature.

So, how exactly do technological habits become sedimented? Desire and fascination are

often initial catalysts. Harcourt sees MDT-relations as leading us to expose ourselves in a

fundamentally new way. We share practically everything about ourselves in the digital world,

making ourselves able to be observed and profiled by advertising companies, tech corporations,

governments – anyone with the resources to pore through the treasure trove of data we share.

Importantly for Harcourt, we can be aware of this exhibitionism – we go through with it anyway,

because we *want* to.

> And it does so with our full participation. There is no conspiracy here, nothing untoward.
> Most often we expose ourselves for the simplest desires, the pleasures of curiosity, a
> quick distraction-those trifling gratifications, that seductive click the iPhone "shutter"
> makes, the sensual swoosh of a sent email. That, and the convenience and apparent
> costlessness with which we can shop online, renew a subscription, deposit a check via our
> mobile phone, carry a library on our e-reader. For those of us who hesitate at first, the
> allure and efficiency of costless storage on Dropbox, of gratis transfers of megabytes of
> data on WeTransfer.com, of free calendaring have made exposure practically irresistible.[43]

In this passage, Harcourt focuses specifically on the material affordances of MDTs that are in

some way desirable. More than just that, MDT-relations mediate our access to all kinds of

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[42] Aagaard, "Tech Addiction," 568.
[43] Harcourt, "The Expository Society," 15-16.

objects of desire; the desire for friendship, romance, sexual satisfaction. These desires need not be digitally borne for them to be transformed through MDT-relations, and magnified or distorted by the accompanying material affordances.The possibilities opened up by MDTs are inherently exciting. A simple buzz in my pocket could mean a text from an old friend or an entertaining video from a content creator. In the space between perceiving the buzz – whether it is real or imagined – and checking my phone, the possibilities are limited only by my imagination. This irresistibility justifies my exposure – it makes me complicit in obfuscating the fact that I am exhibiting all sorts of intimate information to entities I don't even know exist. There is a distinctly temporal element to this process – after all, habits can only become sedimented over time.

Similarly, the desire that develops MDT agency is not constant. When smartphones first arrived, they brought with them a radical redefinition of what it means to be online. They concatenated access to a vast array of desires – the desire to keep in touch with friends, to watch funny videos online, to stay informed on the latest political developments – and the newness of this access made it all the more seductive. MDT-relations dramatically alter our access to objects of desire – and when individuals first acquire MDTs, this alteration can be irresistible. Over time, the alteration ceases to be something new; it becomes incorporated into the natural attitude.

When I first got an iPhone, I was staggered by the endless new possible forms of activity – new ways of relating to the world. Like a kid who discovers ice cream or a jazz enthusiast discovering Miles Davis, I couldn't help but explore. As I did so, I began to learn the digital landscape before me. I made accounts here and not there. I visited these websites and not those. I became familiar with how the device could figure into my life – and gradually, my attitude towards the iPhone evolved from childlike curiosity to everyday familiarity. The excitement of

new possibilities kickstarts the process of sedimentation; as that excitement fades, and habits become sedimented, excitement and wonder are replaced with mundane dependency and familiarity. The relation is no less consequential – it may even be more so, as it recedes into the background of my awareness and becomes harder to reflect on. What might this process look like beyond the level of the individual?

1.4 The Social: Technological Attitudes

I use 'technological attitudes' to denote the ways in which societies are mediated and shaped by MDTs (and the economic context from which they emerge). Herein, I use 'technological attitudes' for the social level and 'technological habits' for the individual level. I will start with an example. To be a member of the academic community at the University of Michigan, you have to create a Google account. In 2012, UofM agreed to move its email services to Gmail; now, Google and its suite of software applications (Docs, Sheets, Calendar) are part of the connective tissue underlying the everyday functioning of the University.[44] Google's role in mediating education is not restricted to higher education – in 2017, "68% of school districts nationwide revealed that they use Google Classroom and/or G Suite for Education frequently."[45] Google mediates a vast amount of educational activity today. Our technological attitude sees MDTs as vital components of important societal functions. This attitude has political and economic dimensions, too: it accepts that a massive multinational conglomerate facilitates the way society learns.

This acceptance needn't come with an ideological endorsement; it can also be seen as a sedimentation of MDT-necessity into societal consciousness. The process is not dissimilar to the process I've sketched out for technological habits – when a new MDT arises (or MDTs are

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[44] Haley Goldberg, "[No Title]." *The Michigan Daily,* October 2011.
[45] Bouchrika, "How Google Conquered the Classroom: The Googlification of Schools Worldwide."

equipped with a new material affordance), society is captivated. The first iPhone demonstration is a cultural watermark – as individuals become acquainted with a new technological reality, the societies they make up do the same. As time goes on, technological attitudes lose their tinge of wonder. Where having a smartphone might have once been a novelty, it is now expected in many social contexts. In the social consciousness, MDTs go from the object of nascent fascination to a permanent fixture in the business of living.

1.4.1 Constitutive dialectic

Technological attitudes form in the interplay between technological habits, pre-existing social norms, and material affordances. Certain parts of this process are intuitively easy to grasp; if lots of individuals form deeply sedimented technological habits, societal organizations will likely reflect the aggregation of those habits in one way or another. Technological habits alone do not produce technological attitudes, just as the habit of smoking cigarettes does not determine social norms around when it is and isn't appropriate to smoke; those form when smoking habits run up against health effects, corporate interests, political priorities, etc. The economic dimension is crucial here; MDTs have created entirely new ways to generate revenue, many of which center on the monetization of human attention. Social media companies are the central examples of this monetization. They create products – apps like Instagram and Twitter – for public consumption. These products, by and large, are free to use.[46] So, instead of selling something people pay for, social media companies find another way to generate revenue: "With most businesses, the user of the product or service is the source of the revenue. But there is another kind of business—the so-called attention economy business, typically an ad-based business—where the user of the product or service is not directly the source of the revenue.

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[46] Twitter's recent move towards a subscription-based model is a notable departure from this – and has been accompanied by a precipitous drop in usage and market value. Of course, this isn't necessarily a causal relationship.

Instead, the user's attention is the product, and this product in turn is sold to advertisers or other buyers."[47] The business model of social media companies has become known as the *engagement-based business model*; the broader economic context that grounds it is called the *attention economy.*

Of course, advertising is not a new business; newspapers, radio, and TV all exist in the context of the attention economy. Still, MDT-mediated advertising can be fundamentally different from earlier forms – at the very least, MDTs have raised it to new heights: "the most valuable and influential form of attention-economy businesses are social media companies."[48] This is largely due to material affordances and will be discussed at greater length in chapter two. The central takeaway here is that MDTs have revealed an *extremely* economically viable way to monetize attention – look no further than the incredible growth of the tech industry (specifically digital advertising) in recent years. Corporate interests are powerful actors in the shaping of attitudes towards their products. The Marlboro Man, Steve Jobs' turtleneck, and even the fervent conversation around artificial intelligence precipitated in no small part by the emergence of ChatGPT all demonstrate how intertwined social attitudes can be with economic interests.

Technological attitudes are not solely passive reflections of habits, affordances, and economic forces – they are active shapers. To illustrate this, consider phubbing. Phubbing (phone-snubbing) refers to the act of ignoring one's real, in-person conversational counterpart in favor of one's phone. It is widespread and leads to a number of troubling consequences like lower perceived communication quality,[49] lower relationship satisfaction,[50] and lower feelings of warmth from parents.[51] I have plenty of experiences with phubbing – like the students Aagaard

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[47] Bhargava and Velasquez, "Ethics of the Attention Economy: The Problem of Social Media Addiction," *Business Ethics Quarterly: The Journal of the Society for Business Ethics* 31, no. 3 (July 2021): 321.

[48] Ibid.

[49] (Chotpitayasunondh and Douglas 2018) as cited in Aagaard, "Digital Akrasia: A Qualitative Study of Phubbing."

[50] (McDaniel and Coyne 2016a; Roberts and David 2016) as cited in ibid.

[51] (Stockdale et al. 2018) as cited in ibid.

interviews in his article, I find it jarring and rude while having done it myself. There is a tension here – practically everyone agrees that phubbing is morally wrong, and yet it remains widespread. There is a gap between a widely-held social norm (phubbing is bad), and the actions of those who profess their belief in that norm. With reference to Aristotle, Aagaard refers to this tension as digital *akrasia*: incontinence, or weakness of will. Aagaard conceives of phubbing as another example of a sedimented technological habit. There is more to the formation of that habit than repetition; it is also mediated by technological attitudes. Allow me to expand with a personal anecdote.

During my junior year, I lived in a house with eight close friends. We'd often sit around the house in the evenings – talking about sports, politics, or whether a grizzly bear could beat a gorilla in a fight to the death. This was often an entirely natural, organic social context; I had close personal relationships with most of my roommates, and I felt comfortable around all of them. And yet, a peculiar thing happened with inevitable regularity during these group conversations. Someone would start saying something to the guy next to them – I remember times on both sides of this interaction – and be 'phubbed'. Often, at one point or another during the course of conversation, everyone in the room would be on their phone. I remember the thought processes I had when I was the last one to begin scrolling.

I'd look up, and realize that the social fabric facilitating conversation had fractured. In seconds, the experience of a vibrant common room shifted to the compartmentalized private experience of a cubicle. Inevitably, I'd follow suit – sometimes this was a conscious choice, but more often than not it was a *protective* bodily reaction to the jarring fragmentation that had just occurred. Before the absurdity sunk in, I'd be sucked into the digital lifeworld of my phone. This could go on for… ten minutes? Twenty? I truly have no idea. I would eventually look around –

and sometimes, I would feel the weight of what had just happened. I had sat there, within feet of my closest friends – and yet, we'd all been phenomenologically discrete. Not only that – nobody realized it for who knows how long! This is an experience I've had more times than I care to count – and there really is something *deeply* unsettling about the realization that strikes when you look up. It is a confrontation with absurdity, in its most visceral form.

Phubbing cannot be solely attributed to sedimented habits, although they are certainly involved. Phubbing needs to be understood not simply in terms of the action (or set of actions) to which it refers; but also the technological attitudes that underlie those actions. For clarity, let's distinguish between *local* and *global* phubbing. Local phubbing corresponds to the definition given earlier – literally, snubbing someone with your phone. *Global* phubbing refers solely to a feature of experience; namely, the shared knowledge of narrow phubbing. Where local pubbing is the individual technological habit, global phubbing is the technological attitude that subsequently develops. It is a subtle awareness that can undergird in-person interactions, particularly among young people. It's as if, in any casual social interaction with someone below a certain age, there's an ever-present subconscious insecurity: "at any moment, this person might end this conversation. I could tell a joke, look up, and see them buried in their phone. Hey! I wonder if the Red Sox won today…" and out comes the phone. The fabric of in-person conversation is rendered unstable, and precarious. The two reinforce each other and become co-constitutive, such that local phubbing can emerge out of global phubbing rather than the other way around.

When I use my iPhone now, I am rarely awestruck or fascinated. The smartphone once inspired wonder – it allowed us to fulfill emergent desires, and preexisting desires in emergent modes. Now, MDT-relations are far more mundane. We have adjusted to the new technological

reality they enable. There's nothing exciting about the face of a distant friend on the screen –
we've all seen it before. The once-emergent access to desire is commonplace; it's a feature of our
natural attitudes. The chronological movement from fascination to banality of MDT-relations is a
fundamental element of my characterization of habit sedimentation. When one is first exploring
the digital lifeworld, they are laying the foundation for technological habits. By the time their
fascination abates, they have developed deeply sedimented technological habits. Their
fascination – in dialogue with the material affordances of MDTs that grant the device a treasure
trove of behavioral insight – yields a relation that can ultimately be mundane *and* incredibly
influential in their everyday experience and action. Even if one is less susceptible to the desires
mediated by MDTs, they are likely surrounded by technological attitudes colored by
MDT-necessity. We have gradually adjusted to a new phenomenological reality – one in which
MDTs are ubiquitous and versatile.

Chapter 2 – Material Affordances

2.1 Introduction

It is now time to turn to the devices themselves. In this chapter, I explore the material affordances of MDTs, and the technological capacities that enable those affordances. I start with a discussion of the versatility of MDTs, and how that versatility affects MDT-relations more broadly – I see it as a critical component in enhancing MDT agency. I then argue that the dynamic character of MDT-relations can be understood with a discussion of how MDTs collect and make sense of information from users. I refer to this cluster of capacities as 'MDT perception'. After exploring the material underpinnings of these capacities, I argue that the material affordances of MDTs evolve in a dialectic between technological limits and economic objectives. I conclude the chapter by arguing that in order to fully grasp MDT agency, we must understand the active and intentional role MDTs play in mediating our relations to the world. My objective is to complete my disclosure of MDT agency as a tripartite phenomenon.

2.2 Versatility and Multistability

We have said that postphenomenology approaches technologies as non-neutral; the concept of multistability is central in postphenomenological attempts to understand how "technology [is] both something we design and use for our own purposes, and also something that influences, restricts, leads, inclines, or controls us".[52] We can use an MDT to make a call or look something up – in doing so, we also open ourselves to a host of affordances that might nudge us this way or that. The idea here is that any technology can serve multiple functions and be meaningful in different ways, and this variability is contingent on the technology's materiality

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[52] Rosenberger and Verbeek, "Field Guide," 25.

as well as the context of its use. Rosenberger says that multistability "highlights two points: (1) multiple relations to a technology are always possible, and (2) this potential is at the same time limited by the technology's materiality, i.e., the particularities of its physical composition."[53] Rosenberger goes on to say that individual human-technology relations are called 'stabilities' or 'variations': so, the (I–smartphone) relation when Facetiming a friend is one stability, and the (I-smartphone) relation when scrolling through Instagram is another. The 'dominant stability' of a technology is generally the "usage for which it was designed and manufactured."[54] So, while a pen might serve as a chew toy or a projectile weapon, its dominant stability is as a writing instrument.

A crucial component of MDT-necessity is the feeling that MDTs have (at least) a non-trivial role to play across a diversity of forms of life. By forms of life, I am simply referring to different categories of everyday activity. So, when I host friends for a dinner party, I'm engaging in a social form of life. When I write a paper for a class, I'm engaging in an academic form. When I apply to a job, the form is professional or aspirational. Multistability provides a conceptual framework to understand the phenomenological versatility of MDT-relations. At the same time, multistability alone cannot fully explain the material affordances that shape that versatility. Consider the smartphone. It is not immediately clear that the primary use of a smartphone is the same as the primary use of a landline, which is to make calls. In fact, I would imagine that some smartphone users – particularly of a younger age – see the capacity of the smartphone to make telephone calls as a secondary use. Any attempt to locate a dominant stability for MDTs is likely to come up short, simply because these devices are too varied in their uses. This is not to say that MDTs are perfectly multistable; I cannot use my smartphone to chop

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[53] Rosenberger, "Mundane Artifacts," 377.
[54] Ibid, 378.

down a tree or build a house. The broad possible uses are at least somewhat materially constrained – but not to the point that we can locate a dominant stability. More importantly, the multistability of an MDT is importantly different from the multistability of other technologies in that the material affordances of MDTs are such that MDT-relations can easily slip between stabilities. Consider the hammer; it is multistable in that it can be used for hammering, murdering, prying out nails, etc. The hammer's multistability is contingent on its materiality – but mostly on the agency of its user. The user is playing the central role in determining the dominant stability at the time. Now, let's think of a laptop. The user might attempt to set the dominant stability of, say, writing a paper – only for that stability to subtly shift. That shift need not be primarily driven by the user. I might open Google Chrome to search for a source, and then be drawn into some other stability by an embedded link or a calendar notification.

To drive the point home, let's consider two parallel scenarios that might arise when meeting with colleagues or attending a class. In scenario A, you are taking notes on your laptop – in scenario B, on pen and paper. Your mind wanders – your boss is droning on, or the discussion is uninteresting, or you're simply not in the mood to be attentive. You begin some other form of activity to pass the time. In scenario A, you open up your email – in scenario B, you begin to doodle. At face value, these forms of activity are similar; at least in the sense that they are both distracting you from the task at hand – namely, being an attentive colleague. Both could lead you to miss some important information or draw your colleague's attention to your lack of interest. The difference is located in the mediation of the avoidance activity, and the material affordances of the mediating technology.

Doodling is an inherently self-contained activity. It does not instantly open the doodler to new forms of interaction – it does not really offer anything *new.* It is an entirely auto-determining

form of activity. When I start doodling, I am not confronted with other avoidance activities – I can doodle for as long as I want, but it will not actively guide me towards chatting with a friend or going down some digital rabbit hole about contemporary politics. The pen I doodle with *could* be used for something other than writing – but it probably won't unless I happen to decide to start chewing on it or hurl it across the room.

Email, on the other hand, opens up existing external social relations – and offers the promise of new ones. There is often something new when I open my email. It may be spam or a superfluous reminder; nevertheless, in that brief moment before my inbox loads, I can't help but wonder what might be waiting to be explored. And of course, my email is but one function of the digital multitool that is my laptop. I start by opening my email, and before I know it I've browsed through half a dozen digital newsletters, responded to a couple of texts, and tinkered with my calendar. I access my email through the same web browser that I access the broader internet through – the same web browser that I have deeply sedimented habits of engagement with. When I navigate to my account, I do so with at least some awareness of the other stabilities my relation could slide into. The narrow form of email itself is inherently more engaging than doodling because of the adjacent stabilities, and the excitement it elicits; *and* it is accessed on an artifact that broadens the scope of these possibilities and creates new ones. The versatility of MDT-relations is enabled by the material affordances of MDTs. It isn't just that users discover different ways of relating to MDTs; rather, MDTs are designed to be incorporated into more and more forms of activity. As technological capacities expand, MDTs become more and more 'useful', in the sense that the range of practices they can mediate grows.

2.3 MDT Perception

'MDT perception' refers to the broad array of material capacities that allow MDTs to gather and make sense of information from us. Here I argue that the capacities denoted by MDT perception serve to explain certain phenomenological aspects of MDT-relations; namely their active versatility and the increasing intuitiveness that characterizes these relations. I will start by discussing the functional processes that underlie MDT perception. The smartphone and smartwatch are the best MDTs to highlight in discussing MDT perception, simply because they go practically everywhere with the user. If we distinguish between smartphones and laptops, we see that smartphone perception is more interesting. Many of us are loathe to go anywhere without our smartphones, which creates more stabilities within which the device can collect information. Simply put: smartphone-specific habits, attitudes, and affordances make them the most ubiquitous MDT form in everyday life. Furthermore, smartphones are perceptually better equipped than laptops – demonstrated by the variety of accurate sensors an iPhone contains (barometer, accelerometer, etc.) lacking in, say, a Macbook Pro. Various modalities work in tandem to make sense of the data. For instance, my phone – through my tactile interactions with the screen – records information about my behavior on Instagram. In doing so, the phone is 'perceiving' my actions through an external sensor (the screen) and making sense of these actions by translating them into numbers and incorporating them into algorithms. MDTs organize the massive quantities of data they collect into 'digital identities'. John Cheney-Lippold defines new algorithmic identity as "an identity formation that works through mathematical algorithms to infer categories of identity on otherwise anonymous beings."[55] This kind of identity is formed through the user's internet usage. The picture is this:

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[55] John Cheney-Lippold, "A New Algorithmic Identity: Soft Biopolitics and the Modulation of Control," *Theory, Culture & Society* 28, no. 6 (November 1, 2011): 165.

> You open up a new computer and fire up a web browser. You go to washingtonpost.com, visit a couple of blogs on WordPress and Tumblr, and go on the business social networking site linkedin.com…At this point you decide it might be best to go to work so you close your computer, get dressed, and go outside. While you may proceed with your day as if nothing has happened, something has changed about who you are online. You have been identified. Your IP address has been logged; you have a cookie file installed on your computer. And somewhere, in a database far, far away, you very well may have a gender, class, and race.[56]

The process described here is MDT perception in action – the device (here it is a desktop computer, but it could just as well be a laptop or smartphone) collects information from user behavior and uses that information to infer identity categories. One's algorithmic identity follows them as they navigate the digital lifeworld, observing and making sense of their behavior to recursively self-improve. Algorithmic identities might begin as rough sketches; they do not stay that way.

The capacity of MDTs to create and develop algorithmic identities helps to clarify the increasingly intuitive character of MDT-relations. When I first got a smartphone, it was a foreign object. Now when I pick up my smartphone – regardless of the original purpose of the use, if there happens to be one – it doesn't feel like I am using a tool to achieve a purpose. The interaction as experienced is often essentially pre-theoretical, in that it requires little to no conscious consideration of the implications of use. In other words – when I visit a website or scroll through social media, the fact that I am actively exposing myself to algorithmic identity creation doesn't factor into my experience. I do not stop to consider the fact that everything I do on my phone is being tracked, recorded, and quantified. In an immediate sense, I am a benefactor of this process – I become less aware of the medium of my relation, and more focused on what I am doing in my digital lifeworld. When technological habits sediment, they do so not only

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[56] Ibid.

through repetition on behalf of the individual; this process is quickened as the device comes to 'know' the user through their digital behavior.

2.3.1 Global connections

The ease with which information can be shared is a key material difference between MDT and human perception. Think broadly of the constraints on sharing information gathered perceptually between humans. Human perception is never entirely objective – the way you and I experience the same perceptual stimuli is relative to the perceiver. So, from the first moment of perception, subjectivity creeps in. Furthermore, if I want to share information gleaned from perceptual experience, I am limited by further constraints – things like my command of language, my subjective mood, or my memory. Even if we ignore these constraints, I am temporally limited – I can't instantly share gobs of perceptual data with another person. It takes time for me to articulate my thoughts, or to write them down. It takes more time for those I am communicating with to receive information from me and make sense of that information.

Information gathered by MDT perception is free from these constraints. MDTs are in constant communication with one another – and the amount of time it takes for information to make its way from my smartphone to my computer, for instance, is negligible. We can think of a benign example like sending a text message. I can type and send an iMessage from my phone, and by the time I open the messages app on my computer, the message I sent moments ago appears on the computer. In milliseconds, my phone has received input from the screen, translated that input into a message, sent that message to its recipient, *and* communicated with my other devices to keep them up to speed. This demonstrates that MDT perception does not occur solely within one subjective agent, in the manner that human perception does. Instead, it is

like my devices – my phone, or my computer – are nodes in an interconnected network of digital perceivers.

The connections between MDTs are realized in a multitude of ways. For instance, the perceptual capacities of my phone and my computer are linked by the fact that I am logged into the same accounts on each device. Even without a full understanding of the mechanical workings that underpin these connections, their existence is made clear in the use of these devices. Imagine I frequently visit ESPN.com on my computer. When I open my web browser on my phone – which is already logged into the same account as my laptop browser – and type the letter e into the search box, I'll receive a suggestion to visit ESPN.com. When I add an event to my calendar on my laptop, it instantly appears in GCal on my phone. Just a few days ago when traveling, I logged into my Delta account to access the internet on my phone. When I opened my computer a few hours later on the plane, it was already connected to the Delta Wi-Fi network. The fundamental point I am trying to make here is that information collected by one device can be immediately broadcasted to others through various channels.

We can shed more light both on this interconnectedness and on algorithmic identities with a discussion of digital third-party tracking. Third-party trackers are companies that collect data from users that can be monetized through targeted behavioral advertising.[57] They access user data through 'first-party' applications that are coded in such a way as to allow trackers access to the information they collect. So, when I use Instagram to post an image, like a video, or message a friend, I am not just giving information to Meta – I am also unwittingly exposing myself to an ecosystem of third parties whose chief purpose is to determine how they can best use the digital footprints I leave to maximize their profit. This business model sheds light on what happens to

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[57] Binns et al., "Third Party Tracking in the Mobile Ecosystem." In *Proceedings of the 10th ACM Conference on Web Science*, 23–31. WebSci '18. New York, NY, USA: Association for Computing Machinery, 2018.

my information after it has been collected through MDT perception. The basic picture is this: MDT perception creates vast amounts of information on users – in other words, on consumers. This yields financial promise – the better you know your consumers, the more efficient and targeted your advertising will become. Third-party tracking has enabled a vast expansion in the advertising industry: In the U.S. the online advertising industry earns about 60 billion dollars per year.[58] A look at the literature will allow for a better understanding of the mechanisms behind third-party tracking and the state of the third-party ecosystem. Additionally, it will shed further light on the status of algorithmic identities.

In "Third Party Tracking in the Mobile Ecosystem", Binns et. al present "an empirical study of the prevalence of third-party trackers on 959,000 apps from the US and UK Google Play stores."[59] Among other things, the authors found that 90.4 percent of apps surveyed included at least one third-party tracker. Furthermore, the prevalence of third-party trackers varied along app categories – news and gaming apps had more third-party trackers than productivity apps, for instance. The functional techniques that underpin third-party tracking are varied, and third-party trackers behave differently in the mobile and web domains. Binn et. al have this to say about the interconnectedness of third-party trackers: "such networks link activity across multiple apps to a single user, and also link to their activities on other devices or mediums like the web. This enables the construction of detailed profiles about individuals."[60] The interconnected nature of MDTs drives MDT-relations further from their material grounding as immaterial digital lifeworlds are shaped by user activity across discrete material devices. The present discussion of the digital advertising industry provides a natural segue into the dialectical development of MDT

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[58] Binns et al.," 1.
[59] Ibid.
[60] Ibid.

material affordances. The central question for this section is: how can we best understand the material *and* the immaterial infrastructure that gives rise to MDT perception?

2.4 Constitutive Dialectic

I argue that a dialectic between economic incentives – partially expressed in technological attitudes – and technological capacities drives the development of MDT material affordances. Many of the most relevant affordances are expressed in algorithms. For instance, 'adaptive algorithms' are a crucial design feature embedded in social media platforms. Here is an explanation of how these algorithms work:

> [Adaptive algorithms] adjust the content they feed each particular user such that each user will remain engaged with the platform for ever longer periods of time (Lanier, 2018; Rader & Gray, 2015). The algorithms do this by monitoring the amount of time particular kinds of content keep the particular user engaged with the platform, and they use that data to continuously adjust the content so that the particular user remains engaged with the platform for ever-lengthening periods of time (Lee, Hosanagar, & Nair, 2018)... The more one uses the platform, the more data the platform's algorithm has about what keeps that particular user engaged, and the more the algorithm feeds that particular user precisely the content that will keep them engaged even longer, and so the more addictive the platform becomes for that particular individual (Chessen, 2018; Schou & Farkas, 2016).[61]

This passage is packed with crucial insights. Firstly – it reveals an important dimension of MDT perception that I have yet to discuss; temporality. I have outlined a few of the ways in which MDTs collect information from users; this passage sheds light on how that information can be temporally quantified. It's not just that TikTok's algorithm can see which videos I like and comment on – it can also see how long I spend watching a video. It can *sense* if I rewatch, if I scroll past it immediately, or if I watch for a couple of seconds before moving on to the next clip. It can pick out trends in my behavior – for instance, I might tend to spend more time viewing dog videos than cat videos. Perhaps I tend to instantly scroll past politically conservative content and

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[61]Bhargava and Velasquez, "Ethics of the Attention Economy: The Problem of Social Media Addiction," 333.

rewatch videos from left-leaning creators. In a sense, adaptive algorithms are unequaled experts in user behavior online – they know exactly what we look at, and for exactly how long. It can then leverage that information to make recommendations that will keep me engaged. This process is iterated and reiterated, over and over. The temporal dimension of MDT perception will ultimately help further explain how MDT agency is so formidable – it adds yet another way in which MDTs can make minute adjustments to its affordances.

From a higher altitude, this passage sheds light on how MDT perception is among the primary enablers of the engagement-based business model – and the cyclical nature of that model. By collecting detailed quantitative data from users, adaptive algorithms allow social media platforms to 'smooth out' their own relational character – and they allow this smoothing to be tailored to individual specificities. By this, I simply mean that adaptive algorithms function to allow Instagram for individual X and Instagram for individual Y to evolve differently. What appeals to X might repulse Y, and adaptive algorithms allow these platforms to fine-tune themselves for specific individuals and their preferences. These algorithms are able to quantify and analyze the behavior of users to an extent that dwarfs users' own capacity to reflect on their own behavior. If you ask me how long I've spent on my phone today, what apps I used, what appealed to me, and what repulsed me – the best I could do is offer a few scattered observations. I think I liked a post from FC Barcelona on Instagram, for instance. I probably scrolled for an hour – or two? Who really knows? Not me. My phone, however, contains the requisite data to answer these questions – and someone with the proper access and technical skillset could find the answers. More importantly, Instagram's algorithm collected and used those answers to fine-tune my user experience in real time. Clearly, MDT perception is at the center of this process. Without the capacity to collect information – and near-unrestricted access to exercise

that capacity – the engagement-based business model would be rendered toothless. A massive industry would go up in smoke. So, the material affordances that partially constitute MDT agency are not driven solely by the technological limits of the time – these devices are designed with an eye to profit generation, often at the expense of other concerns.

2.5 Active Sedimentation: MDT Intentionality

I argue that MDTs themselves are *active shapers* of MDT-relations. Verbeek explains this active shaping in terms of technological intentionality. In his article "Ambient Intelligence and Persuasive Technology", Verbeek discusses how the convergence of information technology and cognitive science gives rise to new forms of technology that are ambient and persuasive. Ambient intelligence – I'll use AmbInt for short – refers to technology like that found in thermostats that adjust themselves automatically, or watches that can read the user's heart rate and offer them insight on their cardiovascular health. These kinds of technologies, "when the interaction with users is explicitly designed on the basis of insights from the behavioral sciences" have an expanded influence on our behavior – and have the capacity to be far more persuasive than other forms of technology.[62] It is worth mentioning that 'ambient intelligence' and 'persuasive technology' should not be understood as mutually exclusive categories. Persuasive technologies can be ambiently intelligent – like the smartphone. I will first explore Verbeek's definition of persuasive technology, then turn to the characteristics of ambient intelligence.

According to Verbeek, technology becomes persuasive when these features of ambient intelligence are leveraged to influence human behavior – to 'persuade' humans to act in certain ways. He writes:

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[62] Verbeek, "Ambient Intelligence and Persuasive Technology: The Blurring Boundaries Between Human and Technology." *Nanoethics* 3, no. 3 (December 2009): 231-33.

Not only is the form of the message now used to influence human behaviour, but also the characteristics of the receiver. By combining an understanding of how influencing behaviour works with the specific possibilities provided by information and communication technology, new leeway has arisen for the design and application of technologies that encroach greatly on our everyday activities and choice processes, and even on our ethical decision making.[63]

This passage is ripe with crucial insights into why MDT agency seems powerful – and why digital advertising is of particular interest. In the paragraphs immediately before the passage above, Verbeek notes that the art of persuasion has been a constant throughout human history, from rhetoricians in Ancient Greece to advertising firms in the 20th century. Persuasion that occurs through technologies like MDTs, however, is importantly different from these earlier forms, because MDTs are able to more accurately "perceive" the characteristics of the receiver – and this knowledge allows for better persuasion. This is an intuitive picture – the better sense a persuasive agent has of its target, the more persuasive that agent is likely to be. Picture a truculent child at daycare. The child's teacher might be totally unable to persuade the child to follow simple instructions – but the child's parent, knowing that the promise of ice cream will immediately compel the child to do what they're told, will be a far more effective persuader. If we think now about the features of ambient intelligence, it allows us to better conceptualize the persuasive potential of MDTs. These technologies have the capacity to perceive, anticipate, and respond to the environments in which they are embedded. The importance of persuasive technologies is more pressing when contextualized by the features of ambient intelligence that persuasive technologies often exhibit.

Verbeek outlines five features[64] – borrowed from Emile Aarts and Stefano Marzano – that characterize the interaction between human and ambient intelligence. Briefly, they are:

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[63] Verbeek, "Ambient Intelligence," 233.
[64] Verbeek, "Ambient Intelligence and Persuasive Technology," 231-33.

1. Embedding: AmbInt is embedded in an environment, and communication between human and technology happens in a natural way. Recall the earlier quote from Irwin, regarding how smartphones are 'taken in' to the body by their user. The experience of using a smartphone feels natural – and communication with it can happen naturally, like through speech when using a voice aid like Siri.

2. Awareness: AmbInt technologies are aware of – and able to respond to stimuli in – their environments. A smartphone will notify its user when it gets too hot or too cold. Voice aids are able to "sense" and make sense of vocal communication from their user.

3. Personalization: AmbInt technologies "can draw up or retrieve a person's profile and set up interaction with technology that is tailor-made to suit the person in question". Voice aides like Siri are able to recognize individual voices – in other words, my phone is able to distinguish my voice from my sister's and will only respond to mine when it hears the words "Hey Siri". This is not a flawless technology – it gets it wrong sometimes – but in my experience, it's pretty damn good.

4. Adjustability: This feature can be seen as an extension of AmbInt's awareness of its environment. Beyond mere recognition, AmbInt technologies are responsive – as in the examples above, or when features like AirDrop demonstrate that smartphones are 'aware' of other smartphones in the vicinity.

5. Anticipation: AmbInt tech is able to anticipate developments in its environment. Music providers like Spotify are able to anticipate what new music listeners will like in order to make better recommendations.

Verbeek argues that new forms of technology force us to recognize them as active and intentional, whereas we normally conceive of technology as a category of inanimate and mute things: "after all, these technologies take decisions, respond to their environments and interfere with our behavior intensively."[65] Verbeek locates technological intentionality in the capacity of technologies to direct or control the actions and experience of users. He describes this as material intentionality[66] – what I have been calling the material affordances that constitute MDT agency.

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[65] Verbeek, "Ambient Intelligence and Persuasive Technology," 234-35.
[66] Verbeek, "Ambient Intelligence and Persuasive Technology," 235.

MDTs are materially agential – and not in the way that a speed bump is agential. In a loose sense, a speed bump can be seen to have *some* degree of agency because it causes people to behave differently. However, whatever agency we might ascribe to a speed bump is static. Unless a human acts upon it (by adding concrete to make it larger, or sanding it down) the role it plays in mediating human experiences and practices will not change in virtue of its own materiality. This is not to say that it will always affect human behavior in a uniform manner; some people will slow down, and others might speed up to have a bit of fun. The role of the speed bump in the human-speed bump relation is inert. On the other hand, MDT agency is dynamic from all sides of the relation; individual habits change, technological attitudes change, and the material affordances of MDTs change. Of course, the iPhone 14 has different affordances than the iPhone 4; additionally, the affordances of today's iPhone 14 can be subtly different from yesterday's.

I will conclude this section with a concrete example of MDT agency at work to crystallize the concept. I sit down to start an assignment. I open my laptop and open Google Chrome. Already, my relation has been shaped by the technological attitudes of my social context. I am a student at Michigan – I use Google Chrome instead of Safari or Firefox because my email and all of my academic work is linked to my Google account. I was born in 2000, so I've grown up with a fair amount of my social activity mediated by MDTs. My mind wanders – all of a sudden, I find myself scrolling through Twitter. I don't recall consciously choosing to open Twitter – but my technological habits can yield action without conscious awareness. All I have to do is press T and return, and there I am. As soon as I start scrolling, my behavior is subtly influenced by the material affordances of the platform. I see certain tweets and not others because Twitter's adaptive algorithm shows me content that is likely to generate engagement. This might be a fulfilling encounter if I learn something interesting or see something funny. It

might end up being harmful – perhaps I am deceived by a piece of misinformation, or exposed to some psychological trigger. It might just be another mundane moment of everyday activity. No matter what, this particular interaction with the world is mediated by material affordances, technological habits, and technological attitudes. Interactions like this one make up a sizable fraction of everyday experience for many; as a result, they orient users towards the world in opaque ways.

Chapter 3 – Obfuscation and Orientation

3. 2 Technological Orientation

I have sketched out the distributed formation of MDT agency between habits, attitudes, and affordances by starting from the phenomenology of the relations. The specific phenomenological contours of MDT-relations – versatility, necessity, ease – can be seen as phenomenological manifestations of a broader technological orientation. I argue that MDT-relations orient us – as individuals and as societies – toward the world in a particular way. Even those among us who resist the downsides inherent in MDT-relations are technologically oriented. What do these relations orient us towards? The process occurs through MDT-relations, but what is the result? My objective here is to demonstrate that MDT-relations are intimately connected to the structure of everyday experience, including in moments where MDTs themselves might be absent.

3.2.1 Orientation in phenomenology

Orientation is a key concept in phenomenology – one that is closely related to intentionality: "phenomenology makes orientation central in the very argument that consciousness is always directed toward objects and hence is always worldly, situated, and embodied".[67] The idea is that consciousness itself is always intentional – it is directed toward something. One is never merely conscious, but always conscious *of.* Orientation takes the same idea and applies it to natural attitudes – natural attitudes are always oriented in particular ways. Thus, one's experience of the world is always shaped by the orientation of their natural attitude.

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[67] Sarah Ahmed, "Orientations: Toward a Queer Phenomenology," *GLQ: A Journal of Lesbian and Gay Studies* 12, no. 4 (2006): 543.

Postphenomenology has a similar concept – field composition. Rosenberger and Verbeek

conceive of field composition (along with sedimentation) as "variables that, like the notion of

transparency, could characterize a user's technologically mediated field of awareness."[68] They

give the following example:

> The experience of watching a movie in a theater is an even more encompassing example
> of a human-technology relation that is typically highly characterized by field
> composition. As the theater darkens, as the movie begins, and as the viewer becomes
> engrossed in the story, the viewer's awareness overall becomes almost entirely composed
> by the film's content. It seems insufficient to say that the surrounding theater, and the seat
> below, and the distance between the viewer and the screen all take on a degree of
> transparency. It is instead more appropriate to say that the movie content stands positively
> forward, its visual and audio content colonizing the user's field of awareness. Put
> differently, through the technological mediation of the movie theater, the viewer and the
> world are co-shaped such that (at least in the most engrossing moments) the movie
> content itself composes the entirety of the world as experienced. That is, the
> movie-watching experience is a human-technology relation highly characterized by field
> composition.[69]

Conceptually, field composition is used to describe specific human-technology relations – not

exactly my project. However, if we combine this concept with orientation, we see that the field

composition of specific relations can yield a more continuous orientation of users – I call this the

terraforming of the natural attitude.

3.2.2 Evidence for technological orientation

What are some broader examples of our technological orientation? I have argued that this

orientation can manifest in physical technological habits and in social technological attitudes.

Let's use romantic relationships as a way to clarify. MDTs have made it such that individuals are

in some way permanently available to their partners. By this I mean that I can send my partner a

text and be reasonably confident that she will see it relatively quickly. Even if we are spatially

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[68] Rosenberger and Verbeek, "Field Guide," 38.
[69] Rosenberger and Verbeek, "Field Guide," 24.

separate, we are semi-permanently digitally present to one another. If I have a concern, a random thought, an unexpected longing, I am able to reveal that to her immediately. Obviously, there are exceptions – she might be in class, or on a hike without cell reception – but by and large, a text sent in today's world will shortly become a text read. This omnipresent digital connection makes it so that obligations in romantic relationships take on a new form. Romantic relationships have always come with obligations – for instance, it seems uncontroversial to posit that (*ceteris paribus)* ignoring things your partner says is the wrong thing to do. However, where those obligations were once subject to all sorts of constraints – for instance, I can't ignore my partner if we're not in the same place – MDTs have weakened the force of those constraints. Spatial separation no longer relieves the obligation of being an attentive partner to the same degree.

I do not aim to make any specifically normative claim here about what MDTs have done to romance. My perspective here is rather limited by the fact that I have only ever been in MDT-mediated relationships. This mediation is often a wonderful thing, like during extended periods of time apart. At the same time, the permanent awareness of your availability to someone else can cause challenges to arise. If I don't respond to a message or a call from my partner because I was busy or tired or whatever else, my partner might become frustrated or I might begin to feel guilty. After all, it isn't as if I would ignore her if we were face to face! The point here is not to demonstrate sound reasoning; it is simply to demonstrate how MDT-relations subtly orient our approaches to core aspects of living.

Let's use another example. Imagine Jeff, a high schooler interested in philosophy. Jeff's high school library doesn't have much in the way of philosophical works, and books are pricey – so, he uses ChatGPT to summarize philosophical ideas that he finds interesting. Jeff really likes ancient philosophy – he devours paragraph-length summaries on Aristotle, Plato, Socrates,

Stoicism, all the rest. Then, Jeff gets to college. In his first ancient philosophy class, he is assigned Aristotle's *Nicomachean Ethics.* At this point, Jeff has never read philosophy that wasn't neatly packaged as the written outline of a cookie-cutter five-paragraph essay. When he opens *NE,* he is perplexed by the opacity of Aristotle's writing. He can't make heads or tails of it – he thinks, 'Why the hell is this guy going on about incontinence for so long?' Jeff has been oriented towards receiving information passively and easily; no matter who you are, I don't think anyone would characterize their first time reading Aristotle as a straightforward, passive process. This orientation towards certain ways of receiving information over others is key to my central argument and will be discussed at greater length in chapter four.

3.2.2 Orientational relativity

I do not mean to imply that we are all necessarily oriented by MDTs in a uniform way – that would only be compatible with a strong form of technological determinism that runs antithetical to my project and postphenomenology more broadly. MDT orientation is relative to the human in question. Those of us who grew up around smartphones seem likely to be more technologically oriented than our grandparents, for instance. Nevertheless, I do hold that for the most part, we are all subject to some degree of MDT-driven orientation. The inevitability of this orientation is grounded in the material aspects of MDT-necessity – the fact that it can actually be the case, for certain practices, that the successful carrying out of that practice requires an MDT-relation. We can hammer the point home by examining the detritus of attempts to actively resist the pull of contemporary MDT-relations. For instance, Apple devices record the time spent on their devices and offer users the option of limiting screen time for certain apps. Aagaard writes about another instantiation:

> This is evidenced in the influx of so-called Zenware programs such as StayFocusd, SelfControl, Antisocial, Freedom, and Chrome Nanny, which block specific websites or

even break your Internet connection (Pang, 2013). In fact, acclaimed author Zadie Smith (2012) explicitly thanks Freedom and SelfControl for "creating the time" in which to write in the acknowledgments of her novel NW (p. 295). Relational strategies developed in our spare time intertwine with our professional use of the same technologies.[70]

Zenware programs and screen time nudges are attempts to resist the agency of MDT-relations *from within* a natural attitude that is already pre-theoretically oriented by these relations. I might be frustrated by how easily I become distracted when working on my computer – but I cannot just stop using it (at the very least, I *feel* as if I can't stop using it). When I download a Zenware program, I end up outsourcing my attempts to mitigate this frustration back to the very object of frustration. In the same vein, I always put my phone in my backpack when I study because I know that if it's out of sight, it's (relatively) out of mind. If I were not already technologically oriented, I wouldn't feel the need to do this, just as I don't feel the need to put my wallet or keys away when I want to focus on something else. Natural attitudes and their orientations are necessarily opaque; very few of us (if any) can accurately describe the precise shape of the private, subjective filters that color everyday experience. MDT orientations result in the obfuscation of the materiality that governs MDT-relations, and blur the boundaries that structure our everyday experience and practices.

3.3 Obfuscation

3.3.1 Hiding: Material Obfuscation

The development of MDT-relations over time is accompanied by an increasing obfuscation of materiality – not only of devices themselves but also of the activities they mediate. Think of the process of getting a book from the Hatcher Graduate Library. What are your options? You can physically go to the library, ask for the location at the desk, and navigate through the endless stacks of books. Or, you can search for your book in the library system and

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[70] Aagaard, "Drawn to Distraction," 95.

have it brought to the lobby for pickup. The second option requires a lot less from you – it just takes a few clicks. From your perspective, you've just made a tedious process easy. Of course, you haven't actually cut down on any effort expended from a god's-eye perspective; you have just outsourced the labor of finding the book and bringing it down to the lobby. I am not making any sort of normative claim about this particular example – I use it only to show how MDT-relations can quite easily cause users to lose sight of the material dimensions of MDT-mediated activity. There are dozens of other examples here – perhaps Instacart is a perfect one. Instacart allows you to outsource grocery shopping to a gig worker. You 'shop' on the app, place an order, and groceries are on your stoop a short while later. This is still a process rooted in material labor; it just isn't yours. Once again, there may be nothing intrinsically wrong with this process – but it can muck up my awareness of how things actually work in the world. If someone is raised with parents who always shop with Instacart, they might grow up thinking that groceries fall from the sky or are delivered through some public utility. Let's examine some less innocuous consequences of this obfuscation.

The MDT-mediated harms of misinformation and political polarization are well-documented. Institutions like the European Union[71] have commissioned reports on how MDTs and adjacent technologies can (and have) undermine democracies by dramatically augmenting the creation and proliferation of misinformation. This need not require an ideologically malevolent actor – if an algorithm promotes content based on how much engagement it generates, and that happens to be innocuous misinformation from a poorly informed source, so be it. Social media platforms attempt to mitigate these harms with content moderation strategies, but even the best content moderation algorithm cannot be perfect – think

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[71] Lewandowsky et al., "Technology and Democracy: Understanding the Influence of Online Technologies on Political Behaviour and Decision-Making."

of what it would require, in the case of hate speech. Someone would have to find a universally

agreed-upon set of criteria to define content as hate speech – an impossible task, it would seem –

and find a way to represent those criteria in algorithmic form. Beyond amplifying pure

misinformation, MDT-relations can also promote political polarization; they can fracture the

epistemic common ground of society by tailoring individual human-MDT relations to the

inclinations of the user. After all, people will use their devices more if they like what they see,

and people like seeing their beliefs confirmed by others. Imagine I am a staunch supporter of

leftist politics and I get my news on Twitter. Chances are, I will probably engage with the leftist

content I see. As my behavior is tracked and analyzed by Twitter's algorithmic infrastructure, I

will be shown more of what I historically engage with the most. This probably includes leftist

content – it might also mean that I see content from the opposite end of the political spectrum.

Anger is a powerful driver of action; perhaps whenever I see a tweet from Donald Trump, I

cannot help but reply with derision. To the algorithm, engagement is engagement – whether it's

driven by solidarity, resentment, frustration, or something else entirely. The result is that my

political thought is colored by the fact that I only ever see things that I either already agree with

or things that piss me off. This is not conducive to productive political engagement – it is

conducive to tribalism.

At the conference I mentioned previously, I heard anecdote after anecdote about how

political activity mediated by MDTs constructs barriers to conflict resolution. The material

architecture of the internet is such that anyone can lob horrible insults at others with no prospect

of recourse. In seconds, I could set up a Twitter account with a fake name and insulate myself

entirely from the consequences of my words. This is a particular stability that hides any potential

consequences of my actions entirely from me. Instead of engaging with viewpoints that differ

from my own, I begin to dismiss anything I take issue with out of hand. This is unsurprising If I am only ever shown things that lead me to anger.

Contemporary MDT-relations also obfuscate the functional processes and physical materials that enable these devices. Most of us have a tentative grasp on how MDTs actually work – why would we need to? The endless ways in which they mediate experience and practices make it so that there is little reason to understand what is *physically* going on. We might know at some level that the raw materials in our iPhones may very well have been sourced unethically[72] – but this knowledge itself is obfuscated by deeply sedimented MDT-relations. It might be easier to reflect on this knowledge if MDT-relations did not feel so necessary for everyday activity; if there was some alternative that could do the same thing without needing cobalt mined by children; if these relations were not so deeply sedimented into our bodies and minds.

In his tool analysis, Heidegger discusses the moment of breakdown. A man is hammering away, enveloped in the pre-theoretical everyday, the hammer taken-in to his body (a transparent embodiment relation, to postphenomenologists) and ready-to-hand. Then, it breaks; the man is thrown from his pre-theoretical absorption and is compelled to consider the hammer as an object for the first time. The breakdown phenomenon constitutes a valuable opportunity for the man – he is able to stop and reconsider his environment in a new light. The breakdown facilitates a momentary escape from the everyday by fracturing the natural attitude. Aagaard mentions how closing the lid of one's laptop weakens the magnetism of the device. This is an allusion to the breakdown phenomenon.[73] Closing one's laptop, or powering off one's phone, objectifies the device – it strips away the phenomenological to reveal the ontological. These devices really are

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[72] Kelly, "Apple and Google Named in US Lawsuit over Congolese Child Cobalt Mining Deaths." *The Guardian*. December 16, 2019.
[73] Aagaard, "Drawn to Distraction," 95.

just hunks of metal, glass, and circuitry; this ontological reality is something that is powerfully obscured when we use these devices. Yet, the interconnected nature of contemporary MDTs inhibits the power of the breakdown. If my phone dies as I am sending a message, I can plug it in and it'll be revived in seconds. I can fill the brief time away by sending the same message to the same person from my laptop. I *could* take the opportunity to stop, examine the hunk of glass and metal, and ponder how it's changed the way I live. I could pick up my guitar and sing, or crack open the novel on my bedside table. My natural attitude is not entirely fixed – I am not a passive automaton, mindlessly following the contours of my sedimented habits. Still, everything about MDT-relations – the material affordances at play, the social attitudes around me, my desires and curiosities – all orient me to keep on doing what I do.

One might object to my argument here by positing that MDT-relations actually facilitate new forms of the breakdown phenomenon. MDT-relations can mediate access to a vast wealth of information, some of which will force me to stop and reconsider assumptions that support my natural attitude. If I am born and raised in dogmatic opposition to something, MDTs might be the only source of information available to me that resists that opposition. I would respond in agreement! MDTs certainly *can* facilitate breakdown; however, if many of their stabilities are optimized to keep me scrolling, they are not incentivized to show me something that might cause me to put the phone down and ponder unexamined assumptions.

MDT-relations even blur distinctions between MDTs themselves. One can now use their computer as a phone and their phone as a computer. MDT-relations become less of the form (human—technology—world) and move towards (human–technology/world). There are efforts from within the tech industry to speed up this process: Elon Musk is reportedly interested in

developing an 'everything app'.[74] Two days ago, the New York Times published an article describing imminent changes to Google's search strategy: "The new search engine would offer users a far more personalized experience than the company's current service, attempting to anticipate users' needs."[75] Whatever these developments specifically entail, they seem likely to come with the consolidation of varied MDT relational stabilities into a more unified – and therefore, more opaque – relation with a precisely personalized digital lifeworld.

3.3.2 Blurring: Experiential Obfuscation

Imagine yourself on a roundabout at a playground. As you spin, your line of sight continually shifts. If you spin quickly enough, your vision starts to blur – you lose the ability to fully focus on what you see. MDT-relations blur the distinctions between forms of everyday activity as they mediate rapid and seamless transitions between those forms. The endless possibilities opened by MDTs – and the fluid reorientations they enable – have the effect of inhibiting immersion in a single form of activity. Think of two ways of writing a paper – on a typewriter, and on a personal computer. The typewriter is, in the Heideggerian sense, ready-to-hand *for* an explicit purpose – printing text on a sheet of paper. The possibilities it affords its user are limited by its form. Word processing software like Google Docs has purportedly the same function – albeit with more expansive possibilities (adjusting text size and font, for instance). However, it is accessed through a piece of digital technology that is ready-to-hand for nearly limitless purposes. I can write a few lines, respond to a text, browse the web, write a few more lines, and so on. My agency is not the only thing at play here – notifications pop up. The absence of limits between forms of activity blurs those forms into one another, and makes it far more difficult for the user to be *absorbed* in just one.

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[74] Kay, "Elon Musk Has Reportedly Merged Twitter with X Corp. Here's Everything We Know About His Ideas for an 'Everything App.'" *Business Insider*, April 11, 2023.
[75] Grant, "Google Devising Radical Search Changes to Beat Back A.I. Rivals." *The New York Times*. April 16, 2023.

There are normative implications here – the first of which is relatively straightforward. If one accepts that MDT-relations play some role in mediating human experience and activity – and that sometimes, this mediation has bad consequences – it follows that a better understanding of those relations is something to strive for. As the agency of relations becomes more opaque – whether due to technological advancement, the sedimentation of habits, the crystallization of social attitudes – that understanding becomes more difficult to reach. Its grounding in the analog world becomes harder and harder to track.

3.4 Harms

I will close this chapter with a look at MDT-relations and well-being. I am operating on the common-sense assumption that things like cognitive functioning and physical and mental health are conducive to well-being – and that reduction of these capacities is not. The results from a 2021 study in *Frontiers in Psychiatry* paint a stark picture. The study cited below is a broad review of scientific literature on smartphone use.

> Results: Comorbidity with depression, anxiety, OCD, ADHD and alcohol use disorder. Excessive smartphone use is associated with difficulties in cognitive-emotion regulation, impulsivity, impaired cognitive function, addiction to social networking, shyness and low self-esteem. Medical problems include sleep problems, reduced physical fitness, unhealthy eating habits, pain and migraines, reduced cognitive control and changes in the brain's gray matter volume.[76]

Before we take a closer look, I need to make a couple of qualifications regarding the evidence and its role in my argument. As Aagaard argues, I think it best to resist the temptation to discuss MDTs in the language of addiction. In fact, the study concludes with a qualification of its own: "The major limitations in studies of excessive smartphone use and Internet addiction are

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[76] Yehuda Wacks and Aviv Weinstein, "Excessive Smartphone Use Is Associated With Health Problems in Adolescents and Young Adults." *Frontiers in Psychiatry / Frontiers Research Foundation* 12 (May 28, 2021): 1.

that they are mainly cross-sectional studies without baseline measures and rely on associations between structural and functional changes in the brain and subjective measures and no proof of a causal role in the development of the adolescent or adult brain."[77] Suffice it to say the jury is still out. Regardless, one needn't speak about MDT addiction to see what the evidence indicates. There is a clear correlation between excessive MDT use and adverse effects on well-being across dimensions. Many of these are subjective dimensions – some are not: Wacks and Weinberg refer to studies that found, using diffusion MRI, correlations between heavy smartphone use and the following (and more):

- Impairment in cognitive control during emotional processing.[78]

- Reduced functional connectivity in regions related to cognitive control of reward stimuli.[79]

- Reduced Gray Matter Volume.[80]

- Lower activity in the right anterior cingulate cortex (ACC).[81]

I lack the conceptual toolkit to closely examine these studies critically. However, it seems *highly* improbable that every single correlation between excessive smartphone use and harm to individual well-being found by the 100 studies cited in this article is incidental. Furthermore, the connection between smartphone use and harm to well-being maps extremely well onto my own experience and the experience of my generational contemporaries.[82] The question of social well-being is likely to be more contentious – so again, I'll paint with broad strokes. Here are some assumptions I am operating on.

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[77] Ibid, 4.
[78] Chun JW et. al; cited in Wacks and Weinstein, "Excessive Smartphone Use,", 6-7.
[79] Chun JW et. al; cited in Wacks and Weinstein, "Excessive Smartphone Use,", 6-7. These are in fact two separate studies.
[80] Lee D et. al; cited in Wacks and Weinstein, "Excessive Smartphone Use,", 6-7.
[81] Horvath et. al; cited in Wacks and Weinstein, "Excessive Smartphone Use,", 6-7.
[82] Aagaard, "Drawn to Distraction."

1: *Ceteris paribus*, a society in which there is a shared epistemic landscape is more likely to function well. By this I mean that when confronted with problems that face society at large, it's easier to find solutions if most people generally agree on certain things – for instance, the validity of election results.[83] 2: A democratic society is more likely to be conducive to the well-being of its members than an autocratic one. 3: The needless amplification of misinformation is a bad thing. I think these assumptions are fairly justified without too much elaboration.

Once again, there is strong evidence to indicate disturbing effects on societal health effected by MDTs. Before I proceed; the point here is not to ascribe blame (nor is it to exonerate – there is certainly blame to be attributed to actors in this story), but merely to state broadly and plainly that societies suffer because of MDTs. Awareness of this suffering exists in the public consciousness and has for some time. In 2018, the Wall Street Journal reported on internal Facebook research indicating that "64% of all extremist group joins are due to our recommendation tools."[84] In other words; the material affordances created by Facebook's algorithmic infrastructure were directly related to the spread of extremism. In the same year, the Oxford Internet Institute presented research on how Russia used computational propaganda – defined as "the use of automation, algorithms, and big-data analytics to manipulate public life" – against the United States. They concluded that computational propaganda originated in Russia and "leveraged social media to manufacture and spread junk news, manipulate public opinion, and subvert democratic processes."[85] What's more, they posited a causal link between the

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[83] This is not to suggest that we should revert to some form of state-controlled media, or that society only works with complete epistemic homogeneity; only that a political system in which there is fundamental disagreement regarding things like the validity of election results will find it difficult to function well.

[84] Horwitz and Seetharaman, "Facebook Knows It Encourages Division. Top Executives Nixed Solutions." WSJ Online, May 26, 2020.

[85] Howard, Philip N., John Kelly, and Camille François. "The IRA, Social Media and Political Polarization in the United States, 2012-2018."

architecture of social media platforms and the effectiveness of propaganda: "The affordances of social media platforms make them powerful infrastructures for spreading computational propaganda…. Social media are particularly effective at directly reaching large numbers of people, while simultaneously microtargeting individuals with personalized messages."[86] In other words – social media platforms grant access to an enormous audience; on top of that, the material infrastructure that allows for highly personalized (read: lucrative) advertising means that these platforms can "segment audiences and target messages in a quick, cheap and largely unregulated way…Social media have gone from being the natural infrastructure for sharing collective grievances and coordinating civic engagement to being a computational tool for social control, manipulated by canny political consultants, and available to politicians in democracies and dictatorships alike."[87]

There are clear and present harms caused by contemporary MDT-relations. As societies become more strongly technologically oriented, and as the character of MDT-relations continues to blur the boundaries between us and MDTs, we ought to turn an eye towards improving our technological situation. In chapter four, I argue that MDT-relations inhibit living well. The societal harms I have discussed here do not figure directly into my argument, but they are certainly intimately related.

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[86] Ibid.

[87] Howard, Philip N., John Kelly, and Camille François. "The IRA, Social Media and Political Polarization in the United States, 2012-2018."

Chapter 4 – MDTs and Living Well

4.1 Introduction

My central argument in this thesis is that MDT-relations in their contemporary state inhibit the capacity to live well. I do not argue that this inhibition is an essential fact of technology; I *do* argue that it is a reality of the contemporary state of these relations, a reality that has empirical grounding. I start this chapter with a discussion of living well, in which I identify two aspects that are constitutive of a good life. I argue that these aspects are underpinned by certain practices that one can cultivate – and that MDT-relations interfere with this cultivation. What is fundamentally being inhibited I call 'experiential agency' – the individual capacity to adjust one's orientation to the world.

It is beyond the scope of this thesis to sketch out the criteria necessary for living well. The appropriate definition of the concept itself is not agreed upon; it might mean fulfillment, contentment, freedom from concern, happiness, or some kind of success – or something else entirely. To a certain degree, living well is inherently relative; what it means to live well for one person will not always suffice for another. Different people find meaning in different pursuits. There is inevitably some degree of luck involved, too: few would dispute that living well is made more difficult if you happen to be born without access to fulfilling basic needs. Still, there are aspects of living that seem likely to be constitutive of the good life, no matter the individual in question. I will focus on two of these that I see as dependent on a degree of experiential agency that is inhibited by contemporary MDT-relations. These are 1: fulfilling interpersonal relationships, and 2: a certain approach to self-formation with respect to the relativity of living well. I will expand on what exactly I mean here in the sections that follow. I do not posit that

these two aspects are necessary or sufficient conditions for living well. I am sure there are

exceptions in both directions – people who live well without meeting the criteria I sketch out,

and people who *do* meet those criteria and still would not describe their life as a good one.

Instead, I aim to argue in the manner of Aristotle with appeals to the greater part of humanity –

in short, these aspects when properly fulfilled make living well *more* attainable for *most* people,

regardless of their precise formulation of 'living well'.

4.2 Attentiveness

In the academy and in ordinary language, attention is frequently conceived of as a purely

cognitive faculty: "Mainstream theories in philosophy of mind… describe attention as a modality

that filters or focuses consciousness."[88] Another way to frame this approach to attention is

through the metaphor of the spotlight: "In our everyday experience, we tend to think of attention

as a kind of spotlight – that is, as a flash of light illuminating particular things around us."[89] If

attention is a spotlight, subject to the direction of the perceiver, there is clearly a role for ethics.

However, the spotlight metaphor seems plainly wrong. Attention isn't always consciously

directed – it can be pulled, held, and absorbed. When a bird flies overhead, I don't *choose* to

follow its path. I may not even realize what I'm doing until it moves out of sight. Wayne Wu, in

order to resolve this quandary argues that attention can also be a sub-perceptual, unconscious

process.[90] When cast in this particular manner, ethics seems to have little place in a discussion of

attention.

Fredriksson and Panizza (I'll call them F and P) in "Ethical Attention and the Self in Iris

Murdoch and Maurice Merleau-Ponty", and D'Angelo in "The Phenomenology of Embodied

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[88] Antony Fredriksson and Silvia Panizza, "Ethical Attention and the Self in Iris Murdoch and Maurice Merleau-Ponty," *Journal of the British Society for Phenomenology* 53, no. 1 (January 2, 2022): 24–39. In the cited quote, 'mainstream theories' refers to Wayne Wu's "selection for action" theory of attention.
[89] Diego D'Angelo, "The Phenomenology of Embodied Attention." *Phenomenology and the Cognitive Sciences* 19, no. 5 (December 1, 2020): 961–78.
[90] Wu, "Attention as Selection for Action," *Attention: Philosophical and Psychological Essays* 97 (2011)

Attention" each offer alternative, phenomenological approaches. F and P center their argument on the ethical dimension of attention and the role of the self. D'Angelo argues that "perceptual attentional experiences are necessarily embodied."[91] Despite differences in approach and scope, the two theories end up fitting together neatly, in that they acknowledge the centrality of the bodily self – albeit in different ways – in a discussion of attention. For my project, F and P's approach seems more relevant. I will first briefly sketch out their argument.

F and P conceive of attention in broad terms: "Both Murdoch and Merleau-Ponty take attention to be a foundational modality of consciousness through which the subject is able to engage with the world, and through which the world is disclosed to the subject; this both consists in and enables an ethical engagement."[92] D'Angelo thinks of attention in a similar fashion: for him, attention is a layered phenomenon, the most basic of which is "creative… Because it institutes meanings and rules for our behavior."[93] F and P argue that difficulties in offering an ethical account of attention center around different conceptions of the self, and the role it plays. They see two main difficulties at play: Firstly, "If attention requires the suppression of the self in order to deliver a more truthful perception or understanding, who is attending? And how are we to understand the attentive self?"[94] F and P argue that clear, active attention involves a kind of selflessness. In other words, active attention – the kind discussed in the spotlight metaphor – can be ethical because it requires that the self be placed in the backseat. They use the example of someone listening to a friend recounting a difficult experience. The listener might be stressed about their schoolwork, or thinking about an email they just received – but they sideline these self-directed concerns for the sake of being a good friend.

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[91] D'Angelo, "Embodied Attention," 962.
[92] Fredriksson and Panizza, "Ethical Attention," 25.
[93] D'Angelo, "A Phenomenology of Creative Attention," *Phänomenologische Forschungen*, no. 2 (2018): 99–116.
[94] Fredriksson and Panizza, "Ethical Attention," 25.

Now, the second difficulty: "If attention is, as Murdoch and Merleau-Ponty seem to suggest, a modality in which the subject perceives not only unselfishly, but also sometimes passively and un-intentionally, how should we then understand agency in attention, and what implications does this have for the possibility of accounting for the ethical value of attention?"[95] Here we reach the important part. F and P formulate the concept of attentiveness as an "an attitude of receptivity" – as a virtue, in the Aristotelian sense, that requires cultivation through repeated acts of attention. So, while passive and active attention might be intentional and temporally discrete, attentiveness itself is part of the self. F and P posit that "while on the ordinary and scientific understanding acts of attention do not have a clear moral element, if they are the product, as Murdoch suggests they are, of a morally evaluable consciousness, we should in fact consider them, too, in a moral light."[96] The capacity of attentiveness as something that can be developed brings forth important insights. In a loose way, we can conceive of attentiveness as a sort of *practice* – if you get in the habit of paying attention, you'll get closer to being attentive.

4.2.1 MDTs and attentiveness

Recall two important things about attentiveness. 1: It requires a degree of selflessness. In order to be attentive – to a friend in need, or simply to a conversational counterpart – one's own self-concern must be sidelined. F and P refer to this as unselfing: "In unselfing, the self either disappears or drops into the background for attention to reveal the world[97]". This is not to say that attentiveness requires some sort of ascetic detachment from the self – the claim is more restrained and more straightforwardly intuitive. I might have a paper due tomorrow – but if a friend comes to me distraught and in need of advice, I'll have to put my stress aside.

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[95] Fredriksson and Panizza, "Ethical Attention," 27.
[96] Ibid, 37.
[97] Ibid, 27.

2: attentiveness is a capacity, developed through the repeated and habitual practice of paying attention. The claim here is that attentiveness is developed through practice. So, while it may seem difficult to speak in terms of agency for individual happenings of attention, we can speak of agency in terms of the "attitude that makes the act of attention possible."[98] Imagine that you are *terrible* at remembering people's names when you meet them. For some reason, they go in one ear and out the other. Each time it happens, you think to yourself – "ahh, I did it again. Oh well, something caught my attention – not my fault!" One day, you decide to do something differently. You attach a sticky note to your bedroom door that reads "Remember names, you idiot!" You see it every morning, and every night – and slowly, you improve. You start to actively listen when you meet people – you practice 'unselfing'. You have some measure of agency over your attentiveness – and thus, some degree of responsibility.

MDTs inhibit unselfing. Recall the article[99] that surveyed detrimental effects on well-being correlated with excessive smartphone use – depression, anxiety, narcissistic tendencies, and excessive reassurance seeking. Again, without positing a definitive causal relationship, it seems justified to assume *some* non-accidental relation here – especially when the studies echo lived experience for so many of my generation. We've all had periods of mental struggle – and while this is not *prima facie* blameworthy in any sense, it does seem to me that struggles with mental health make it more difficult to focus attention on the world. In a very broad sense: it's difficult to be selfless when your own well-being is in the dumps. I find it wholly unsurprising that these correlations exist. Platforms like Instagram facilitate a dramatic widening of self-exposure in reach and accessibility. In other words – more people can see things about me than if I didn't have an Instagram, and they can see them whenever they want. I can go

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[98] Fredriksson and Panizza, "Ethical Attention," 36.
[99] Wacks and Weinstein, "Excessive Smartphone Use."

on my phone and look at pictures of myself whenever I want – I can google my name to see what comes up. Despite my best intentions, I've caught myself thinking "Did anyone say anything about me on Twitter this week? How many people liked my last post? Hm, I don't love the way my hair looks here." This doesn't mean that we're all doomed to a permanent state of hyper-self-consciousness – but it certainly lends itself in that direction. Beyond inhibitions to directing attention away from the self, MDTs make the actual *practice* of paying attention more difficult, even in face-to-face interactions. Phubbing is an excellent example of this.

4.3 Metabolization

I said at the beginning of this chapter that living well is always relative to the individual in question and their subjectivity. Within that relativity, I argue that there is a constitutive process of self-formation with respect to how individual subjectivity and the abstract idea of living well intersect. In other words, you and I might have an entirely different set of necessary and sufficient conditions we need to meet to live well – but we both have to undergo a process to determine what those conditions are and how to meet them. This process is one that requires what I call metabolization. The rough idea is this: in navigating life, we are all inevitably confronted with certain questions. How to live well is such a question – call it Q prime, or simply Q'. To find answers requires that we deeply engage with *some* portion of what we encounter in the world. I use 'metabolization' here in opposition to 'consumption'. There are a few distinctions to draw here. First; I take consumption to invoke nothing more than passive reception of a resource. The consumptive mode might be actively seeking something – but once what was sought is found, the process is over. Metabolization implies some activity, on behalf of the metabolizer, to absorb that resource into themself. Consumption is quick and mindless; metabolization is slow and engaging. One demands answers; the other seeks to understand.

Obviously, this is not a perfect metaphor – it's not as if we try to metabolize the food we eat, for instance. Perhaps an example will clarify things.

Imagine Donna, a young woman trying to figure out how to live well. She thinks of two potential strategies. She decides that she will either 1. devour every tidbit of information she can find on the good life until she finds a satisfactory answer, or 2. Intentionally engage with and reflect on the things that bring her real fulfillment in life, consider the self-directed insights that reflection might yield, and how she can go about life in a more fulfilling way. I argue that the second strategy is a better one, for a couple of reasons. First – strategy 1 is complicated by the sheer quantity of accessible information in the world. Donna will never be able to locate and consume every single nugget of good-life insight out there. More importantly, if her focus is on seeking out and consuming, she is likely to lose sight of the primacy of her own subjectivity in the process. By this I mean that strategy 1 approaches Q' as if it could be answered strictly by enough data – when in reality, no amount of information can replace the process of metabolization that makes that information meaningful in pursuit of an answer to Q'. I think of strategy 1 as hinging on a consumptive approach to the world, and strategy 2 as hinging on the metabolization – the 'making one's own' – of the world. If Donna chooses strategy 1, she runs the risk of decentering herself in the process of trying to answer Q' – but Q' is only meaningful from a subjective, individual perspective! It is a question that is fundamentally relative to whoever asks it, and how they ask it.

A couple of clarifications are needed here. When I say 'information', I am conceiving of the term very loosely. I am using 'information' here to denote the sum total of our worldly experience. This includes what we read, what we see, how we act, where we go, and how we relate to others – in essence, the 'information' in question here is the content of all our

experiences. I also do not mean to suggest that strategy 1 is straightforwardly futile, or that

answering Q' requires nothing more than sitting around and reflecting. On the contrary,

answering Q' *does* require insight from the contents of experience. The crucial distinction

between the two strategies is the manner in which they incorporate those insights – strategy 1

attempts to consume them quickly and move on, whereas strategy 2 allows them to expand and

develop through metabolization. The information here is endless – the sum content of one's

experience is too broad for it all to be metabolized in a meaningful way. We all have to pick and

choose, in a way – to place our focus on certain things over others. Once we've reached that

point, the metabolization begins.

4.3.1 MDTs and metabolization

The consumptive attitude expressed in strategy 1 is one that can be cultivated by

MDT-relations. MDT-relations inhibit self-formative metabolization by 1. privileging an

impatient and passive attitude towards experiential information and 2. creating decisional

burden. I will discuss this first. Verbeek outlines Ihde's thought on decisional burden here:

> Ihde points to still another important change in our culture wrought by technological
> development: technologies create a "decisional burden" because of the many new choices
> they make possible. Having children, for instance, is no longer something that simply
> befalls us but has become a conscious decision. For those who are eager to have children
> but are unable to conceive, there are a steadily increasing number of options available.
> Prenatal diagnosis opens the possibility of terminating pregnancies of unwanted types of
> fetuses, and so forth. All of these technological developments create ever more moments,
> as well as kinds, of choice. And we no longer have the freedom to shirk them: "The one
> choice I do not have is the choice not to make a choice/ Ihde says, with a nod to Sartre
> (1990, 181).[100]

MDT-relations dramatically broaden the user's awareness of Q' – of potential formulations, and

of answers. There is nothing inherently wrong with this expansion; however, MDT-relations

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[100] Peter-Paul Verbeek, "Don Ihde: The Technological Lifeworld" in *American Philosophy of Technology: the Empirical Turn,* ed. Hans Achterhuis (Bloomington: Indiana University Press, 2001), 137.

expands the user's awareness while impoverishing their capacity to metabolize the contents of that awareness. Here's an example: on social media, users are inundated with 'information nuggets' that appear related to Q'. For instance, a scroll through Instagram will likely contain a number of pictures of yachts, luxury hotels, and beautiful people consumed by 'wanderlust'. The accompanying captions often advertise these images as representations of the good life, with catchy advice on how you can get there. On Twitter, one comes across all manners of get-rich-quick schemes, catchy aphorisms about masculinity, and the like. The entire phenomenon of influencer culture hinges on individuals selling a lifestyle – whether real or carefully cultivated – neatly represented in our digital lifeworlds. And yet – all of these information nuggets are quick and easy. You glance at them and move on. Social media platforms are designed to keep you moving on to the next thing.

Recall our friend Jeff, the budding Aristotelian. He too had been oriented toward the passive consumption of information. His approach to learning philosophy – mediated by ChatGPT – removed any need for him to stew on what he read. It was presented to him in neat, straightforward terms, nicely packaged for immediate consumption. When he tried to understand the real thing – an understanding that can probably only be reached through an active approach – he was undermined by his technological orientation. Anyone who is similarly oriented – as a great many of us are – will find similar difficulties in trying to answer Q'. Their awareness of Q-related information might be expanded, but their capacity to derive any meaning from that awareness is reduced. Our lifeworlds, digital or otherwise, are richer with information than they ever have been – this does not necessarily come with a corresponding expansion in our ability to make sense of those lifeworlds. Before we can even dive deeper into the things we place our

focus on, we have to make choices about that placement. When active, MDT-relations absorb our attention – when inactive, they scatter it.

MDT-relations habituate an expectation of answers always following questions. This is antithetical to metabolization, which places understanding above answering. You can't remember if Eisenhower or Truman came first? Google it. Unsure if you turned the thermostat down before leaving home? There's an app for that. How does quantum physics work? Ask ChatGPT. The problems creep in when adequate answers – like to Q' – are fundamentally difficult. They cannot be answered quickly, if ever. They *can* be better understood – but through metabolization, not consumption.

4.3 Experiential Agency

Attentiveness is a constitutive practice of developing meaningful relationships. Metabolization is a constitutive practice of self-formation. Together, these are constitutive elements of living well – at least for most of us, most of the time. These are practices that can be cultivated over time; this results in an expansion of *experiential agency*. In other words – the attentive individual (as opposed to the inattentive) has more agency over their orientation to the world. They are better able to shape how they experience. The individual well-practiced in metabolizing the world is similarly privileged; they are able to engage with the content of their experience in a way that Jeff the Aristotelian cannot.

By and large, contemporary MDT-relations restrict the development of experiential agency. There is clearly a limit here – nobody has *total* control over their natural attitude, their orientation toward the world, or the movement of their attention. This is a matter of degree; and I think it stands to reason that the more homogeneously technological that orientation becomes, the more difficult it becomes to exert any measure of agency against that. The character of

MDT-relations becomes sedimented into users and societies; habits and attitudes and affordances build each other up and alter the business of living. These relations are so ubiquitous that they inevitably impinge on experiential agency *outside* of the relations themselves.

Conclusion

This thesis starts from existential concerns about what it means to live well, and how technologies might get in the way. At the same time, I believe the concerns I outline in this thesis are not predetermined by any essential trait of humanity or technology. In the first two chapters, I set out to describe the core features of MDT agency, while also exploring the formative processes that make contemporary MDT-relations what they are. In chapters three and four, I shifted my focus in a more speculative direction; I argued that MDT-relations can orient us in subtle ways that inhibit our capacity to live well.

I want to briefly allude to large language models (LLMs), the latest development in technology that has captured the contemporary technological zeitgeist. I have referred to ChatGPT a few times throughout this project – if I were starting a thesis now, it might be focused exclusively on large language models. If there is anything to be learned from the history of MDTs and the artificial intelligence industry, our collective fascination with LLMs seems unlikely to last. Yet, these technologies are becoming increasingly integrated with the MDT stabilities that we already rely on every day. Google plans on equipping search with new AI-enabled capacities next month. Snapchat has already integrated an AI-powered chatbot into their app – an app that mediates the social activity of adolescents across the globe. Whether or not LLMs are the first step towards 'human-level artificial intelligence,' as many industry figures would have us believe, they are undoubtedly soon to become part of the architecture of our digital lifeworlds. This technology will further the natural progression of MDT-relational

character towards ease, intuitiveness, and obfuscation. The material infrastructure that allows LLMs to function may have devastating effects on the environment – but as it is with the silicone in smartphones, these material costs are hidden from the everyday experience of those who use these models.

Take the spread of misinformation. What will our epistemic landscape look like in five years, I can coax a large language model into drafting a well-written statement that is entirely false about nearly anything I please – and can do so over and over again, at a speed that dwarfs the output of a team of human writers? Will it be beneficial for humanity if we continue to outsource the carrying out of private and public life to technologies? Is it beneficial to humanity if pre-existing biases are reinforced and given a false tint of objectivity by artificial intelligence? I mention LLMs specifically because of their relational character and their capacity for obfuscation. When considered in this way, these technologies are not some Prometheus moment; they are a movement along a trajectory that reaches back to the first personal computers – perhaps further.

MDT-relations can and do enhance living in beautiful ways. MDTs can facilitate access to new music and distant friends, new information, new ways of getting an education, easier access to emergency services, better time management – the list goes on. I truly do not believe that the harms engendered by MDT-relations are reducible to any essentialist notions about technology, human nature, societies, or anything else – nor do I think that the tech industry is populated solely by malevolent actors looking to turn a profit by worsening lives. I *do* believe that we ought to strive to improve MDT-relations – and I think we urgently need to do so. The intrinsic promises of MDTs need not be accompanied by declines in mental, physical, and societal well-being.

I am not able to offer concrete prescriptive recommendations to better the state of MDT-relations here – but I will attempt to sketch out a potential trajectory. MDT agency is distributed across people, devices, and societies; attempts to improve MDT-relations ought to be similarly distributed. Regulation of the tech industry is a natural starting point, given the concentration of influence in the hands of very few, incredibly wealthy technologists. Figures like Mark Zuckerberg, no matter how well-intentioned they *might* be, can meaningfully alter the everyday experience of billions of people nearly at will. I think there is something fundamentally wrong with this degree of concentration of this sort of power. In a perfect world, I would hope for the banning of engagement-based algorithms in favor of alternatives that are demonstrably less harmful to democracy.

To improve technological habits and attitudes, there ought to be concerted societal efforts to develop a better collective understanding of the technologies we rely on for everyday life – not just in academia, but throughout our education system and in public-facing media. Students in school ought to learn about social media not solely through their experience and that of their peers – they ought to learn about adaptive algorithms and the attention economy in schools so they have at least some understanding of what actually goes on when you scroll through Instagram. It seems to me that MDT-relations have become increasingly central to the ways many of us live – and that this process has not come with a correlative understanding of the precise nature of that centrality. I hope that I have made any amount of headway in this respect.

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