Phenomenology and the Philosophy of Technology

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4. The Activist Potential of Postmodern Phenomenology of Technology

Robert Rosenberger

Introduction

People working in the phenomenological tradition of philosophy have sometimes disagreed about the potential for these ideas to contribute to activist projects. I have met some who maintain that phenomenology is a kind of science of human experience, something that reveals essences and perhaps even fundamental understandings of being itself. Under this view, it is sometimes held that if phenomenological ideas are taken up within wider activist work applied to specific practical problems, then that work, as such, is no longer a form of phenomenology. I have also encountered some who hold the opposite view; phenomenology is necessarily an engaged, critical, and even activist philosophical perspective. Under this second view, it is sometimes held that movements such as 'critical phenomenology', while laudable, are also redundant.[1] How should we navigate these disagreements, especially those of us convinced that these ideas are crucial, or at least potentially useful, for making the world safer, healthier, more sustainable, and more just? And how do these disagreements reverberate through contemporary work in the phenomenology of technology?

In particular, I would like to explore the implications of these disagreements for the 'postphenomenological' perspective. Work in

1 For more on critical phenomenology, see Weiss, Salamon, & Murphy (2020); and also the journal *Puncta*: https://journals.oregondigital.org/index.php/pjcp/index

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postphenomenology brings anti-essentialist and anti-foundationalist commitments of American pragmatism, as well as other postmodern ideas, to the development of a distinctive phenomenological account of human-technology relations. Building on the work of the grandfather figure of this school of thought, Don Ihde, postphenomenology offers a kind of toolkit for exploring the uses, design, and implications of technology (e.g., Ihde, 2009; Verbeek, 2011; Rosenberger & Verbeek, 2015; Wellner, 2015; Irwin, 2016; Rosenberger, 2017a; Van Den Eede et al., 2017; Aagaard et al., 2018; Hasse, 2020; de Boer, 2020; Fried & Rosenberger, 2021; Kudina, 2023; Rosenberger, 2024).[2] Despite the practical orientation of postphenomenology, there are tensions within this international and interdisciplinary collective of researchers about whether and exactly how these ideas should be taken up as a part of politically activist projects.

After reviewing some of the basics of postphenomenology, as well as some of its internal tensions and external critiques, I outline three avenues within this perspective that show potential for direct applications to activist political criticism: (1) the politics of co-constitution; (2) multistability and the politics of our devices; and (3) the political biases that can become embedded within our technologically-mediated perceptual habituation.

1. Postphenomenology and Political Criticism

Postphenomenology, as a school of thought that continues to grow and change, can perhaps be defined in terms of a number of ideas and commitments that overlap in a family-resemblance-style patchwork. While the work of postphenomenologists differs greatly from one practitioner to the next, one main philosophical idea that appears

2 What makes postphenomenology an example of postmodernism? I have in mind Ihde's explicit integration of anti-essentialist and anti-foundationalist commitments into phenomenology, which he pulls from Foucault, Dewey, Hickman, and especially Rorty, among others. By 1993, he's referring to this perspective as 'postphenomenology', and casting it as a postmodern one. He writes, 'What all the postmodern captures is the sense of transition, of a proliferating pluralism, and—for the nostalgic—a "loss of centers" or "foundations" [...] I have previously called this style of phenomenology I have practiced a "nonfoundational" phenomenology. [Ihde, 1986] Postphenomenology is just another way of characterizing it as a different form, but owing to its ancestry' (Ihde, 1993, p. 1).

across many of these works is a commitment to a kind of situatedness, non-foundationalism, and a practical orientation. That is, rather than arguing for context-free essentialisms, postphenomenology specializes in the deep description of human relationships with technology in all their patterns and diversity, and in relation to people's concrete projects and problems. As Ihde put it back in the 1980s, 'what the philosopher is doing, if you will, is not doing foundational philosophy, but is doing a kind of critical reflection upon what has happened to our 'episteme', our perception of the time' (Ihde 1986, p. 25). In many ways, the various ideas of the postphenomenological framework (e.g., Ihde's four human-technology relations, the notion of multistability, the work on co-constitution and technological mediation theory, etc.) are useful for drawing out and articulating the concreteness and variability of human relationships with technology. Often, these investigations are approached in terms of the technologically 'mediated' character of human-technology relations in which humans and their world are co-constituted through technological mediation (e.g., Verbeek, 2011; de Boer, 2020; Kudina, 2023). Sometimes this situatedness is addressed and defended directly (e.g., Rosenberger, 2017b). However, most often, postphenomenological research is simply conducted in a manner consistent with these commitments, building from the starting point of human-technology relations, and continuing through interdisciplinary investigation.

If postphenomenology is thus strongly positioned to provide useful insights into the concrete situatedness of our relationships with technologies, then what does this mean for its potential for contributing to activist political critique? If by 'politics' we refer generally to structures of power people have over and in relation to one another (including everything from issues of governance, to patterns of racism and prejudice, to questions of rights and justice), and if by 'activism' we refer to engagement with real-world problems, then how can and should postphenomenology be politically activist?

These issues are unsettled. Ihde himself has often appeared hesitant to take up postphenomenological insights in explicit criticism of technological trends. While his corpus is peppered with case-specific critical comments here and there, Ihde has been at times dismissive of the critical work of others, often rejecting it as totalizing, or essentializing,

or overgeneralizing, or as something that fails to recognize technology's multistability. For example, as Albert Borgmann summarizes, 'in his later work, Ihde rounded out his pioneering distinctions into a pluralist and essentially affirmative view of technology, an outlook he festooned with deflationary attacks on unified theories and nostalgic laments' (2005).[3]

This rings in tune with some of the criticisms of postphenomenology that have begun to accumulate. For example, one influential line of critique takes issue with the pragmatism and anti-essentialism of postphenomenology. (For a few of the best of these, see: Rao et al., 2015; Smith, 2015; Zwier, Blok, & Lemmens, 2016; Ritter, 2021; Scharff, 2022.)[4] Oftentimes these critiques are levelled in terms of issues of intelligibility or completeness. That is, it has sometimes been alleged that in eschewing essentialist metaphysics, postphenomenology is missing out on something important. In my view, these critiques take

3 In tune with this, Ihde has recently written that, 'all technologies are "multistable", not restricted to single uses. If this is the case, it does not take much to see that dealings with technologies pose problems for both prediction and ethics' (2022, p. 121).

4 Sometimes these criticisms are levelled against postphenomenology as an exemplar of the 'empirical turn', a conception of the field of philosophy of technology in which the investigation of concrete problems and devices should serve as the jumping off points for philosophical investigation, as opposed to starting with large-scale generalizations or foundational claims (see, e.g., Achterhuis, 2001; Kroes & Meijers, 2001). Frankly, I never cared much for the empirical turn as a terminology, and I care even less about the critiques of it. As a practicing postphenomenologist of my generation, I've simply inherited this fraught conception of the field. On the one hand, I do very much identify with the common concerns identified across the work of the 'empirical turn' generation as Hans Achterhuis has identified them, i.e., Donna Haraway, Langdon Winner, Hubert Dreyfus, Albert Borgmann, Don Ihde's postphenomenology, and Andrew Feenberg's critical constructivism. On the other, I was never convinced they had all so strongly 'turned away' from their predecessors as both the proponents and the detractors of the empirical turn claim. Still, there is important philosophy to do on exactly these issues. For example, there are important questions raised in these discussions over the proper role in the philosophy of technology for transcendental argumentation and conditions of possibility. While I may not care much for the empirical turn qua characterization of the field (either as one to ascribe to, or one to rebel against), I do very much care about the non-foundationalism, anti-essentialism, and epistemological situatedness of postphenomenology. And where these pragmatic anti-essentialist and situated commitments of postphenomenology led Ihde himself to a hesitation toward ethical and political pronouncements regarding technology, I instead believe these same commitments should lead us exactly toward them. For further discussion, see footnote 11, below.

on a special bite in the occasional times they attempt to show that postphenomenology is limited specifically in terms of contributing to political critique. For example, as Jochem Zwier and colleagues suggest, 'postphenomenological analyses of technologies generally concern how technologies understood as human-technology relations help constitute a world. Yet our present ecological situation indicates something that resists incorporation in our meaningful worlds' (2016, p. 331). Does postphenomenology's anti-essentialism place limits on its potential for contributing to political work, or, in this case the politics of global climate catastrophe? (We can note that there has been at least some work done by postphenomenologists on issues of climate change, e.g., Goeminne, 2011; Botin, 2019; Fried, 2023).

For their part, many who consider themselves to be doing postphenomenology do *not* conceive of this perspective as a theory of everything, whatever that might mean. That is, two things can be simultaneously true: (1) this perspective, with its specialization in the deep description of human-technology relations, can make useful contributions to many far-reaching projects, and (2) postphenomenology by itself cannot provide any kind of comprehensive account of humanity and the world (again, whatever that even means). In particular, postphenomenology does not purport to be a political or ethical or social theory. (For example, postphenomenology does not include within itself, say, an account of democracy, or rights, or capitalism.) Nevertheless, this perspective can make valuable, and perhaps distinctive, contributions to this kind of work.

A number of postphenomenologists participate in explicitly politically-engaged projects (e.g., Goeminne, 2011; Warfield, 2017; Wittkower, 2017; Rosenberger, 2017a; Botin, 2019; Botin, de Boer, & Børsen, 2020; Verbeek, 2020; Romele, 2021; Baş, 2022; Fried, 2023; Romele, 2024; Rosenberger, 2024). One major way that this kind of work has been accomplished is through the strategic combination of postphenomenological insights with other social and political frameworks, such as actor-network theory and other science and technology studies accounts (e.g., Verbeek, 2011; Rosenberger, 2014; Rosenberger, 2017a; Arzroomchilar, 2022), Bourdieusian social theory (Romele, 2021; 2024), Arendtian political theory (Baş, 2022), and Feenbergian Critical Constructivism (e.g., Rosenberger, 2017a; Botin, de Boer, & Børsen, 2020; Keymolen,

2021).[5] In these cases, the distinction between this perspective's internal developers and at least some of its external critics may be somewhat arbitrary, really just a matter of style. Those within postphenomenology who are developing links with other perspectives are implicitly or explicitly engaging in the critique of the limits of this perspective, but in a non-dismissive manner. In any case, in these various lines of work it is understood that postphenomenology has something useful—and perhaps even crucial—to offer to activist political projects.

For my own part, I am strongly convinced that postphenomenology has the potential to make significant contributions to activist political critique. My view is that, in fact, the pragmatism of postphenomenology obligates those working within this perspective to be engaged in practical political and ethical action. I see this as a yet unmet challenge for postphenomenology, one that stems from its own bottommost philosophical commitments. While not already a political or ethical theory, and while—like any perspective—it is already always implicated in politics and ethics, the postphenomenological toolkit can be put toward the identification of patterns of discrimination, the revealing of harms, the articulation of more egalitarian practices, and the criticism of injustice.

In what follows, I review three specific places within the postphenomenological framework that are proving to be especially fruitful for the development of politically activist lines of study.

2. The Politics of Co-Constitution

Donna Haraway writes, 'Beings do not preexist their relatings […] There are no pre-constituted subjects and objects, no single sources, unitary actors, or final ends' (2003, p. 6). Karen Barad similarly follows with the claim that, 'relata do not preexist relations; rather relata-within-phenomena emerge through specific intra-actions' (2003, p. 815). These statements reflect a posthumanist sentiment within many important lines of feminist work, including feminist new materialism, which conceives of humans and the world and their technologies in terms of an ontology

5 See especially the 2020, 24 (1&2) special issue of the journal *Techné* on the topic of the intersection between Feenberg's critical constructivism and postphenomenology.

of relations.[6] Postphenomenology has always been a fellow traveller in terms of these commitments. For example, Peter-Paul Verbeek, the leading light in following out the implications of these ideas for the philosophy of technology, writes, 'human-world relationships should not be seen as relations between preexisting subjects who perceive and act upon a preexisting world of objects' (2011, p. 15). To explore the ways that posthuman commitments to a relational ontology play out within postphenomenology, and to consider their implications for political activism, we should turn to the notion of technological mediation.

The notion of mediation is a central idea within work on postphenomenology. Technologies are understood to be more than merely one of the things that a person might encounter in the world, one of the things they might perceive and interpret, one of the things they might act upon in some way. Technologies are instead mediators that come between this person and those things of the world, mediating their relationship and transforming the encounter, changing how a person may perceive, and interpret, and act. Crucially, this technological mediation is understood not only to change what a user can do, but to reshape the entire technological situation.[7] As Bas de Boer explains,

6 We can distinguish this kind of feminist posthumanism (with which postphenomenology shares a relational ontology) with the posthumanism of transhumanists that push a utopian view that technological developments will solve our problems. The latter often comes under criticism by postphenomenologists (e.g., Ihde, 2008).

7 It can be noted that postphenomenologists often have it both ways in their use of language to describe co-constitution and human-technology relations. That is, sometimes entities are discussed as if they are pre-constituted, for example when technologies are described to come 'in between' the user and the world as if all three are pre-existing as such. For example, this is the case when, following Ihde, postphenomenologists use a kind of 'I – technology – world' formula to describe human-technology relations. Even the term 'human-technology relations' implies that there are pre-existing humans and technologies to relate to one another. Of course, postphenomenologists insist at the same time that all of these entities are continuously co-constituting one another, and that none of these entities are what they are in separation from the others. Commenters disagree about how much of a problem this may be. In my view, on the one hand we should remain on guard for moments where this kind of slippage or sloppiness in terminology can lead to confusion or inaccuracy. And yet also on the other hand we can remain generous and recognize that a language of 'in between-ness' and I-technology-world formulations are offered as provisional, as a way to describe things in normal language while at the same time still understanding all parts to be co-constituted. The question of how best to approach these issues of co-constitution is a cutting-edge area of investigation, with, for example, innovative formations of the

'reality comes into being in the relations between human beings and technologies. A central idea within postphenomenology is that technologies mediate the relationship between humans and the world, thereby co-constituting specific experiences and understandings of reality' (2020, p. 22). It is through technological mediation that users of technologies become who they are. And it is through technological mediation that the world encountered by those users becomes what it is. Postphenomenologists have developed these insights into a kind of mediation theory (combining them with work from feminist new materialism, actor-network theory, and other related perspectives), and have applied these ideas to everything from education, design, laboratory instrumentation, and pioneering work in technological ethics (e.g., Verbeek, 2011; Hauser et al., 2018; Hasse, 2020; de Boer, 2020; Lewis, 2021; Wakkary, 2021; de Boer & Kudina, 2022; Kudina, 2023; Rosenberger, 2024).

Verbeek has influentially argued that our moral situation is substantially informed by technological mediation. He writes that 'there is a complex interplay between humans and technologies within which neither technological development nor humans has autonomy. Human beings are products of technology, just like technology is a product of human beings' (Verbeek, 2011, p. 115). Technological mediation thus informs everything from what it means for us to be moral actors, to who maintains moral authority (e.g., nurses and doctors within hospitals), to what options are available in our moral decision-making, as well as to what decisions must be made in the first place. Take, for example, the potential for machine learning algorithms to be used in making medical diagnoses. Bas de Boer and Olya Kudina explore the possible ways that these technologies could reshape the moral decision-making landscape. They write that, 'Through the presence of ML [machine learning], medical professionals, patients, and the relationships between them are co-constituted in new ways', and these new co-constitutions have considerable moral implications (de Boer & Kudina, 2021, p. 250). The use of machine learning predictive algorithms has the potential to reshape the nature of medical objectivity and judgement. This could bring about substantial changes to multiple aspects of medical decision making,

I-technology-world formula under development that stress the co-constitution of its parts through various arching arrows (e.g., Hauser et al., 2018; Kudina, 2023).

including what data are important to diagnoses (with a potential bias toward what can be fed into the algorithm), what diagnostic challenges physicians face (such as navigating the opacity of machine learning processes), and what medical 'responsibility' even means as duties are delegated to these devices.

This line of thinking on the co-constitution of technological mediation can be refined into a useful toolkit for the analysis of our political situation. Verbeek has been leading this push, arguing that, 'The postphenomenological approach can expand this neo-Deweyian interpretation of politics as issue formation: from the perspective of human-world relations, both the formation of publics and the rise of issues are in fact technologically mediated processes [...] technologies help to shape the issues around which publics can form themselves: they reveal how technologies are involved in representations of the world, and therefore in the concerns that people have' (2020, p. 151). Just as we've seen in work on the technological mediation of ethics, our politics can be usefully reconceived in terms of how it is co-constituted by our devices. Technological mediation contributes to the co-shaping of political decision-making into what it is, what the decision points are, how we as political decision-makers are variously situated, what options are available, and how authority is secured.

One example can be seen in my own line of critique of the use of frog dissection in grade-school education. (For the most recent iteration of these criticisms, which leans heavily on technological mediation theory, see: Rosenberger, forthcoming.) The practice of having children dissect frog corpses as a part of the public-school biology curriculum is commonplace in countries such as Canada and the United States. Because this raises both ethical (in terms of animal treatment) and ecological (in terms of specimen sourcing) concerns, many have raised objections. These objections include the push for 'student choice' laws in which states require schools to allow students to engage in an alternative assignment if they choose.

I argue that the practice of corpse dissection should be understood as a form of technological mediation within the classroom. (I like to refer to the practice as 'corpse dissection', rather than frog dissection, to emphasize the artefactual elements of this educational situation. Students in the classroom do not merely encounter 'real' frogs. They

encounter already captured, already transported, already killed, already pre-prepared corpses-for-dissection.) *The technology of the frog corpse itself is the key mediating technology in this story.* It is the frog corpse itself—the frog body preserved with formaldehyde and prepared for use as an educational activity—that sets up the surrounding circumstances, including the details of the digital alternatives (which tend to mimic that non-digital corpse), as well as the activist push for student choice laws. The existence of this technology, as well as its status as commonplace, deeply co-constitute both the political context and the political actors of this situation.

Frog corpse dissection is established in these parts of the world as a kind of educational ideal. This is the status quo. Other options, such as computer simulations, are thus constituted as mere 'alternatives'. These computer simulations are thus setup to attempt to reproduce the experience of frog dissection (e.g., with a digital scalpel and dead-looking frog onscreen). And students in this scenario are thus plunged into the situation of choosing between either complicity or taking up action as a conscientious objector. The debate over these issues is constituted by the mediating technology of frog corpse dissection as one between the (allegedly) best education for our children on the one hand, and a concern for ethics and the environment on the other. I suggest that the notion of technological mediation is useful in this case for drawing out all these dynamics and subjecting them to critical reflection. There is the potential here for contribution to this specific political debate, one with ecological, ethical, educational, and policy implications, as well as implications for computer simulation design. My argument is that this entire co-constituted dynamic—including the assumed status of corpse dissection as an educational ideal, as well as the corresponding assumption that simulated alternatives are obligated to mimic corpse dissection—must be overturned.

3. The Politics of Technological Multistability

Another central idea within the postphenomenological framework is the notion of multistability. Ihde first developed this notion to articulate the multiplicity possible for human visual perception (1977). He has since expanded this idea to help articulate the variability of

human-technology relations (e.g., Ihde, 1986; 1990; 2009). The term 'multistability' has come to refer to the always multiple—though not unlimited—ways that a given technology can mediate a user's relationship with the world. Multistability thus points to the various dimensions across which the same technology may transform a user's experience differently in different circumstances. A given device may be differently meaningful to different users, may fit differently into various contexts, may advance differently along different lines of development, or may be put to different purposes. At the same time, the notion of multistability additionally refers to the limitations of a given technology in mediating user experience; while a technology may be put to multiple uses, it is also the case that its specificity restrains it from merely being used for any purpose. For example, a pen can be used for writing, and this was likely the purpose for which the pen in your hand was designed and manufactured and purchased. But that same pen could also be used for stabbing another person (like they do all the time in movies).[8] Or the tube of the pen could be used to perform an emergency tracheotomy (although there appears to be some disagreement over its actual suitability for this contingency).[9] And yet the pen cannot be used to do simply anything, or come to mean simply anything. Under this terminology, human-technology relations are limited to particular 'stabilities' (or 'variations').

Contemporary work in postphenomenology has significantly expanded the conceptual and methodological framework around the notion of multistability (e.g., Rosenberger, 2014; Whyte, 2015; Aagaard, 2018; Wiltse, 2020; Keymolen, 2021; de Boer, 2023; Rosenberger, 2023). Many of these new ideas have the effect of emphasizing the situated details of human-technology relations. For example, Heather Wiltse explores the ways that multistable technologies themselves can at times adjust and adapt to the user, becoming different objects in the process,

8 O. Rutigliano (2021, November 18). Ten murders-by-pen in movies. *CrimeReads*, https://crimereads.com/ten-murders-by-pen-in-movies/

9 A. M. Seaman (2016, April 28). Forget about saving a life by plunging a pen through the neck. *Reuters*, https://www.reuters.com/article/us-health-breathing-pen/forget-about-saving-a-life-by-plunging-a-pen-through-the-neck-idUSKCN0XP32Q; Editorial Staff (2016, July 24). Tracheotomy: Does TV get it right?. *American Lung Association*, https://www.lung.org/blog/tracheotomy-does-tv-get-right

amounting to a kind of 'multi-instability' (e.g., 2020). Under Wiltse's account, digital technologies are case-in-point examples of technologies that may exhibit this kind of multi-instability, such as voice-interactive systems that adjust to a user's particular vocalizations, or predictive algorithms that learn a user's preferences.

In addition, several lines of work investigate what goes into the establishment of a human-technology relation in terms of one stability rather than another.

On one side, this includes specificities emerging from the position of the user. I have described a user as bringing a particular 'relational strategy' to their encounter with technology, i.e., a bodily and interpretive approach toward a particular stability of a technology (e.g., Rosenberger, 2014; 2023). For example, a person brings a particular set of understandings and bodily comportments to use a pen for writing compared to, say, wielding it as a stabbing weapon. A user's individual history of experience can become sedimented in perceptual habituation. After a lifetime of using the pen for writing, each new pen you see will simply be encountered immediately in terms of its pen-as-writing-implement stability.

On the other side, several postphenomenologists explore how best to conceive of the way that the specificities of the world—including both the design of the device itself as well as its larger context—afford particular possibilities for action and thus incline particular stabilities for human-technology relations (e.g., Aagaard, 2018; de Boer, 2023; Rosenberger, 2023; Romele, 2024; Mykhailov & Liberati, forthcoming). As Cathrine Hasse puts it, 'A multistable technology is a structure that follows different stable trajectories that lead to variations in the artefact as it is embedded in what is termed 'life worlds' in post-phenomenology 'collective activities' in cultural-historical theory' (2013, p. 87). Bas de Boer explains that a central reason that a technology affords one particular stability rather than another is precisely because of the context of 'normativity' within which that human-technology relation takes place (2023). As he puts it, 'the form of life within which technologies are immersed influences the affordances a technology is perceived to offer' (de Boer, 2023, p. 2275). In addition to an individual user's approach to the pen, this device is set within a context of culture within which the pen-as-writing-implement stability dominates; pens are mass produced

and sold for this purpose.

I have come to use the term 'dominant stability' to refer to the one that has become the most prevalent—the main stability that tends to be taken up by users, the one that has become established within a network of other related things.

There are clear political dimensions to technological multistability. The dominance of one stability over alternatives is politically non-neutral. As Lars Botin writes, 'the ethical and political dimensions of technology are multiple and multistable, and we need to take this multiplicity and multistability seriously in order to be able to foresee and engage in the political debate and discussion of sustainable futures' (2019, p. 160). One place where issues of technological multistability intersect with politics is in terms of what could be called the 'closure' and 'opening' of stabilities (e.g., Rosenberger, 2017a; 2023). Alterations will at times be made to devices with the effect of specifically closing off a particular stability, or, contrariwise, keeping a stability accessible. Politics are present in cases in which stabilities are contested; a stability may come to dominate despite objections, or it may come to dominate in ways that advantage one group over another. Such enforcements of the dominant stabilities of technologies can function as a part of larger political agendas, potentially reinforcing the usages preferred by the already powerful, and doing so at the expense of the already marginalized. If someone were to take up the alternative usage in such a case, then it could constitute an act of political resistance.

For example, one domain where these ideas have proven useful is the analysis of the politics of the objects of public spaces, where different groups with varying levels of privilege and power use space in different ways. Studies include investigations into the politics of the multistability of bicycle lanes (Appleton, 2021), skateboarding (Giamarino et al., 2023), fire hydrants (Rosenberger, 2017c), and issues of disability (Mitchell, 2021). (Of course, here is a place where we see the importance of the connections that some postphenomenological researchers are making to theoretical and investigative frameworks that extend out beyond individual human-technology relations and out into larger social and political structures, such as actor-networks, the Bourdieusian habitus, Coeckelberghian narratives, Akrichian scripts, etc.—e.g., Verbeek, 2011; Rosenberger, 2017a; Coeckelbergh, 2017; Romele, 2024.)

The notion of dominant strategies is intended to highlight some of these political dynamics. There is a necessary relativity to the term; what is dominant for one community may not be the same for another. Thinking about dominant stabilities should prompt political questions, such as: dominant for whom? And: dominant over whom?

In my own work, I have investigated the political ramifications of multistability in terms of the problem of homelessness (e.g., Rosenberger, 2017a; Rosenberger, 2023). My way into this topic is the design of public spaces, and what is sometimes called 'hostile design' or 'hostile architecture'. That is, I have been analyzing how the objects of public spaces are sometimes redesigned in ways that are hostile to those living unhoused. This has included investigation into the multistability of a wide variety of objects and spaces. And more, it has included the study of how the stabilities of objects and spaces that are taken up by those who are living unhoused are often closed off through design. For example, benches that could be used as a place to sleep are sometimes closed off such that they can only be used as a place to sit (e.g., through the addition of things like armrests or seat dividers). Garbage cans that could be used as a place to find discarded food or recyclables are sometimes closed off such that they can only be used to deposit trash. Any number of public spaces that could be used as sleeping or living areas (e.g., parks, sidewalks, underpasses, plazas, alleyways, etc.) are sometimes closed off from these usages through any number of means (e.g., obstructions, surveillance systems, loud sound devices, water sprinklers, etc.). I have worked to criticize these discriminatory design strategies which I claim function as a small part of a larger anti-homeless agenda (which includes anti-homeless laws, among other things) that is focused on pushing the unhoused out of shared public spaces above all else.

4. The Politics of Perceptual Habituation

One further area where postphenomenology may be able to make distinctive contributions is on questions of the political embeddedness of technologically-mediated perception itself. As users become accustomed to their devices and spaces, how do associated politics become incorporated into a person's habits of perception? As a user develops everyday relationships with the technologies they often use in their everyday life, how might this everydayness itself become

implicated in the larger political agendas of others?

My suggestion is that one way to help draw out and critically analyze this potential site for politics is through the strategic combination of insights from postphenomenology and perspectives that specialize in issues of political epistemology. Some examples include critical and feminist phenomenology, epistemologies of ignorance, work on technological imaginaries and narratives, epistemic injustice, and critical constructivism, among others. However, my preferred point of connection is work coming out of feminist philosophy of science on standpoint theory and situated knowledges.[10]

The tradition of feminist standpoint theory emphasizes the way that knowledge is not free-floating and abstract; it is something generated and possessed by actual human beings. This means that to understand knowledge, we must recognize people as knowers (e.g., Smith, 1987; Haraway, 1988; Collins, 1990; Harding, 1991; Hartsock, 1998; Harding, 2003). Knowledge is thus something held by individuals, individuals with their own histories of experience and who encounter the world through their own limited perspectives. This introduces an inherent politics to epistemology, one that follows from the situatedness of knowers and the groups to which they belong, and the power differentials between those groups. Or, as Haraway notes, 'All knowledge is a condensed node in an agonistic power field' (1988, p. 577).

My own go-to figure in this philosophical tradition is Sandra Harding, who brings these ideas to the philosophy of science. Harding conceives of the inherent epistemological limitations of individuals, as well as their associated groups, in terms of bias. As she puts it, 'the assertion is that human activity, or "material life", not only structures but sets limits on human understanding: what we do shapes and constrains what we can know' (Harding, 1991, p. 120). There is a political dimension to these biases because, while any group will always have them, those in powerful groups will be particularly ill

10 And it should be recognized that while there is a lot of work to do to follow out these connections between postphenomenology and feminist epistemology, these resonances have always been present; Ihde has noted these points of contact throughout his corpus (see, e.g., 1993, ch. 9; 1998, ch. 11, for early examples), and these resonances continue through the contemporary connections between postphenomenology and feminist new materialism made in the work of Hasse, Verbeek, and others.

equipped to recognize those biases that support their own position of power. Meanwhile, those in marginalized societal positions will have a special vantage point on the biases of the powerful because those biases contribute to their marginalization. According to Harding, these biases can be routed out only by taking onboard others into the knowledge-making process and taking seriously the everyday lives of those with less power and influence. That is, it is only through combining perspectives that biases can be exposed and eliminated. And she argues that even science itself is not immune to these effects. Harding writes that, 'In a hierarchically organized society, objectivity cannot be defined as requiring (or even desiring) value neutrality' (1991, p. 134).

The postphenomenological philosophical perspective works in accord with these commitments to embodied, situated, and mediated subjects.[11]

11 It is this commitment to situatedness that many critics of postphenomenology specifically, and critics of the empirical turn more generally, appear to me to fail to appreciate. It is not merely, as some caricaturize, that postphenomenology only focuses on specific devices; it is that postphenomenology recognizes that all knowledge claims are levelled from situated standpoints. This includes not only people in their daily lives and scientists in their labs, but also philosophers of technology. This is one major reason that postphenomenologists are often uncomfortable with essentialisms, overgeneralizations, totalizing claims, and stories about Technology with a capital T, etc. Such claims appear to be reinstating the 'god trick' criticized by Haraway. This also helps to explain postphenomenology's affinity for perspectives that remain consistent with themes of situated knowledge, such as critical constructivism, standpoint theory, new materialism, and actor-network theory.

So, for example, despite the rhetoric sometimes espoused by Ihde and Verbeek, postphenomenological investigations *can and perhaps should* at times include transcendental argumentation that seeks out conditions of possibility. (For an in depth discussion on these issues, including multiple critiques of postphenomenology, as well as several defences consistent with my formulation here, see *Foundations of Science*, 2022, volume 27, issues 1–4). At the same time, those transcendental postphenomenological investigations cannot result in fixed essences or the discovery of some ontological dimension if that implies a non-situated perspective; the results must be limited to spheres of investigation, and remain contextual and situated.

An example here is work on climate catastrophe. We all share the same planet, and human technological development is changing the environment in dangerous ways. However, this should not imply that everyone on the planet faces the same dangers in the same ways, and neither does it imply that these ecological dangers must somehow be the result of some essential and identical way that the world is revealed to all of us today. These are urgent political problems, and the philosophy

My suggestion is that important contributions to political criticism based in the philosophy of technology can be made by following out connections between postphenomenology and feminist epistemology. We can work to describe with greater precision how the particularities of technologically-mediated experience are shaped by a user's situated perspective on the world. In particular, we can bring together a standpoint conception of epistemological situatedness with work in postphenomenology on the field of awareness. That is, we can explore how human epistemological limitations inform our technologically-mediated experience, and how those experiences become set within sedimented contexts of pre-perceptual expectation. (For more on these themes, see: Rosenberger, 2017a, chapter 5; Rosenberger, 2021; Wellner, forthcoming.)

These explorations have the potential to connect as well to related work in feminist phenomenology and queer studies. For example, Sara Ahmed writes that what the 'flow of perception tells is the partiality of absence as well as presence: what we do not see (say, the back or side of the object) is hidden from view and can only be intended. We single out this object only by pushing other objects to the edges or "fringes" of vision' (2010, p. 239). This is to say that there is a politics to what we fail to notice. And there is potential for postphenomenology to make distinctive contributions to political criticism regarding our technologically-mediated perception.

An example is the various relationships people have with public-space surveillance equipment. For many, surveillance technologies like security cameras are simply a part of the normally largely unnoticed background of the built environment, objects that perch within the edges or fringes of vision, as Ahmed says.[12] However, we can imagine some people with particular jobs or interests that maintain a different experiential relationship to these things, people for whom security

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of technology can be a contributor to the understanding of these dangers, to the criticism of the large-scale institutions responsible, as well as to the creation of solutions. There is a distinctive role to play for postmodern perspectives, including postphenomenology among others, that recognize the differences in the embodied standpoints of the different people and groups and populations of the planet.

12 Of course there is a whole field of surveillance studies dedicated to the study of these issues. For more on the phenomenology of security cameras in particular, see, e.g., Friesen et al. (2009); Rosenberger (2020).

cameras often stand forward as important or noticeable. Perhaps someone who designs, or sells, or installs these kinds of devices will be more inclined to take notice of them. Or perhaps a privacy advocate will be more inclined to take note of the security apparatus around them.

Relevant here, it is also possible that differences in privilege and power will lead to different levels of awareness of surveillance systems. For example, if you are a poor or unhoused person who is targeted by some of the laws of a public space (laws against things like loitering, panhandling, or sleeping in public), then you may be more aware of the security cameras used by those in authority to help in their efforts to enforce those laws. Or, for example, if you are someone against whom facial recognition systems tend to discriminate, then you may learn to be more aware of the surveillance machinery that runs those systems. In this way, the act of not noticing surveillance systems is related to one's status as part of the groups that are not targeted by the systems of harassment that can accompany being the subject of surveillance. The 'unnoticed' and transparent 'backgrounded' status that surveillance cameras maintain for many people is thus the result of, among other things, a kind of political privilege, and one built into learned perceptual habituation.

5. Towards a Politically Activist Postphenomenology

There is room to take advantage of postphenomenology's distinctive insights into human-technology relations for contribution to political critique. As an engaged philosophical perspective focused on the concreteness of human experiences and technological designs, as one with a track record of original contributions to technological ethics, and as one associated with pragmatist philosophy and feminist epistemology, I suggest that it is an imperative for postphenomenology to strive toward making contributions to activist political discourse. And we can see that some work in this perspective has been underway on fraught political topics such as satellite imaging, discriminatory design, unsustainable practices, traffic policy, bicycle lane policy, and anti-homeless designs in public-spaces (e.g., Goeminne, 2011; Rosenberger, 2017a; Wittkower, 2017; Botin, 2019; Fried, 2023; Appleton, 2021; Rosenberger, 2024).

But there are headwinds. Work on the application of postphenomenological insights to larger political critique is done despite several things, including a conspicuous lack of political engagement in the history of this perspective, criticisms from others about an alleged lack of suitability of these ideas for political work, as well as Ihde's own misgivings. In my own experience at least, I have not found any of these to present insurmountable obstacles to doing postphenomenologically-informed activist work.

Above, I have articulated three places in the postphenomenological framework that I believe are showing strong potential for application to political work: the co-constitution of technology mediation; the dynamics of technological multistability; and the sedimentation of our technologically-mediated habits of perception. What can be noted about these ideas is that they are all central features of the postphenomenological framework. This implies that much of the postphenomenological framework of concepts has the potential for application to activist political critique.

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