

Disability, Technology, Time: The Technological Unconscious as an Unsafe Ground for Bodily Activity

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Introduction

In this paper I'm going to talk about very basic kinds of technology, and how these contribute to the enaction of disability. I will first sketch some commonplaces concerning the body and technology, before outlining my own position on these: that the body has a fundamental relationality, of which technology, broadly construed, comprises one aspect. Then I'll outline something called *inter-mundane technology* (a low level artefactuality that supports activity while falling outside awareness, so that its contribution goes unacknowledged and the activity appears natural); and the *technological unconscious* (a corpus of habituated expectations about how the world is). Finally, I'll discuss how norms materialised in inter-mundane technologies lead to one way disability gets enacted, which is erosion of bodily confidence in the world.

1. Objective Embodiment and Instrumental Technology

I'll initially sketch models of the body and of technology to which I'm opposed. Since we're all probably familiar with this account of embodiment, I'll deal with it quickly to spend more time on technology. This model of the body is—unsurprisingly—one that takes this as a mere object: something like a brute biological fact. Here, the body possesses clear boundaries, and can be described exhaustively and accurately from a scientific standpoint. As self-identical and adequate to itself, it requires nothing more to be what it is. It is the realisation of its genetic blueprint, itself produced by natural forces. Any subsequent modification does not change its essence. It is separate from subjectivity or personhood. Its past and present effectively coincide: its biological causal

history defines what it is, once and for all. Finally, it is a neutral substratum. Whatever is thought about, or indeed as, a body, its biological basis is unaffected. Put otherwise, from this perspective, *relations, temporality, and normativity, are inessential to the body*.

This fundamentally misconceives some aspects that are characteristic of organisms as such, never mind complex organisms, or those that engage in tool use. Accordingly, I propose an account based in a more phenomenological model of a living body that is a locus of pragmatic action: an ‘organ’ of movement and connection, both within, and opening onto, the world.¹ This is grounded in the primacy of movement, which is, in simple terms, transition towards or away from something to which the body attributes positive or negative value. The three aspects that an objective model of embodiment considers inessential—relationality, temporality and normativity—are instead fundamental and constitutive dimensions of living bodies. Relationality means that, as active, a body is continually drawn outside itself and into relations with other things. A living body does not terminate at the dermal boundary: it exists through relations with its milieu. This also involves temporality: as always acting beyond itself, a body is primordially orientated towards the future. Every situation the body enters into is simultaneously “its own range of possible appearances and actions”.² A living body is never definitively here or now. It is always outside and ahead of itself: “never wholly within one specifiable locus [and is] always already on the way to somewhere else”.³ As for normativity, living beings do not apprehend the world as bare objects, but as situations laced with meaning according to value or potential for embodied activity. A perceiver does not simply see a chair with a particular set of determinable properties, but as within or beyond reach, as comfortable looking, as available for this or that activity. This is not judgement made about prior perceptual experience, but is basic to

¹ Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. Donald Landes (London: Routledge, 2012).

² Aud Sissel Hoel and Annamaria Carusi, “Thinking Technology with Merleau-Ponty,” in *Postphenomenological Investigations: Essays on Human-Technology Relations*, ed. Robert Rosenberger and Peter-Paul Verbeek, *Postphenomenology and the Philosophy of Technology* (London: Lexington Books, 2015), 78.

³ John McCumber, “Why Is Time Different from Space?” in *Beyond the Analytic-Continental Divide: Pluralist Philosophy in the Twenty-First Century*, ed. Jeffrey A. Bell, Andrew Cutrofello, and Paul M. Livingston (London: Routledge, 2016), 201.

perceptual experience.⁴ In sum, a living body is always disposed towards some activity in the world, through which activity it produces itself.

For human animals, a preeminent aspect of this relationality involves technology.⁵ Technologies, however, are more usually understood as external tools. I'll quickly outline this *instrumentalist* understanding, and several ontological presuppositions that flow from its oppositions between natural and artificial, human and nonhuman.⁶ I'll call instrumentalism's basic premise the *principle of externality*. This means that technologies are fully exterior to the human. They are mere means, awaiting use towards human ends; ends that are formulated autonomously, separately and in advance of tool use.⁷ Technologies are epistemically and morally neutral, or at the very least, "subservient to values established in other... spheres".⁸ Second is the *principle of essentialism*. If technology is external and neutral, whatever it permits merely augments or reflects preexisting and essential capacities or values. This not only presumes pre-technological human capacities and values, but that there is a pre-technological human. Third is the *principle of autonomy*. Humans are autonomous subjects for whom technology is an objective means of extending freedom. Freedom as such requires—in principle, if not always in fact—no additional material for its exercise. Technologies extend human freedom that passes through these while leaving no trace. Overall, technology has no profound status with human existence (it only contributes secondarily, as an extension), and has no enduring effect upon the category of 'the human'.

2. An Alternative Account of Body and Technology

So, a common way of comprehending this relation is that technology is separate from and dependent upon the human. Technology describes so many neutral objects used by humans towards autonomous goals. Of course, there are other ways to understand

⁴ Komarine Romdenh-Romluc, "Merleau-Ponty and the Power to Reckon with the Possible," 2007.

⁵ I take 'human' here as the same kind of object as 'gender' or 'race': an entity that is not given, but produced through interactions. I'll remain agnostic here about what explains how these objects come about.

⁶ Bruno Latour, *We Have Never Been Modern*, trans. Catherine Porter (Cambridge, MA: Harvard University Press, 1993).

⁷ Aristotle, *Physics*, trans. Robin Waterfield, Oxford World's Classics (Oxford: Oxford University Press, 2008).

⁸ Andrew Feenberg, *Transforming Technology: A Critical Theory Revisited* (Oxford: Oxford University Press, 2002), 5.

the human-technology relation. I suggested that living bodies exist through active, constitutive relations with their milieu. This human milieu is technological. The human is a technical animal, where technics refers less to technological objects, and more to a constitutive relation of embodied activity with external things, through which extra-organismic materials get profoundly incorporated within perception and action.

I'll briefly mention two approaches with which I broadly agree. The first posits technologies that are internal to perceptual experience or embodied activity. Unlike instrumentalism—wherein artefacts merely expedite or extend preexistent capacities—here the technological contribution is substantive. Artefacts may be involved in perception, to co-constitute modes of world disclosure; or within bodily activity to be at least partially-responsible for availability and exercise of such actions. Consider Merleau-Ponty's oft-cited description of the non-visual man who incorporates his cane within bodily intentionality, such that this technology is not external, but one point of sensitivity among others.⁹ For more quotidian instances, consider eyeglasses, microscopes, hammers, and telephones. In each case, artefacts are significant for, or internal to, the activity: without them the action would be different, even impossible.

That such contributions become familiar, and that artefacts no longer feel external, is thanks to the role of habit in embodied encounters the world. Merleau-Ponty highlights what he calls body schema: a compound of sedimented corporeal dispositions, that continually conveys an implicit and immediate practical sense of the relationship between the body and its surroundings, including what actions that relationship affords. This is thanks to the fact that, first, the body schema involves what Don Ihde calls a “polymorphous sense of bodily extension”:¹⁰ its scope is unfixed, and can expand and contract relative to what technological relations are embodied. This allows technologies to mediate and transform a body's perception of and action in its world, while awareness of that body and technology alike withdraws into the experiential background: focus goes ‘through’ these to the activity their coupling

⁹ Merleau-Ponty, *Phenomenology of Perception*.

¹⁰ Don Ihde, *Technology and the Lifeworld: From Garden to Earth* (Bloomington and Indianapolis: Indiana University Press, 1990), 74.

enables. I propose that this can be pressed further still. Thought and action not only *overspill* the somatic boundaries of the body. The activity in question emerges within, and supervenes upon, the dynamic processes of interaction *between* bodies and environments.¹¹ The activity is located precisely *in* or *as* the relation, not in the things that are in relation.

A second way to understand the human-technology relation involves the technological genesis of the human as such. This is the claim that human and technology develop together, as seen in Bernard Stiegler's proposition that the human has an 'epiphylogenesis': technology is essential to the human, which has always incorporated extrinsic materials, and develops itself through externalisation in technical artefacts.¹² However minimally, all activity has some technological dimension: whether proximal (like previous examples wherein some artefact—a cane, a notebook, glasses—is incorporated within bodily comportment to enable or transform action and cognition), or distal (the deep historical provenance of technologies that structures present activities). This definition of technology is very broad, and involves very basic and mundane instances. Here, technology describes any product of *techne*: the activity by which living beings modify the world which, for Stiegler, is to incorporate external materials within activity. This tendency to self-exteriorisation, composition and assemblage makes the human essentially undetermined, or more correctly, progressively determined through its creative engagement with artefacts. Its 'nature' is to negotiate human-nonhuman boundaries via "a long line of technical prostheses such as flint stones and other 'memory devices' that have played an active role in the very process of the constitution of the human".¹³

A brief point of qualification: this doesn't mean that elaboration of the human is a reciprocal relation between two kinds of object: one bodily, the other technological. Living beings exist in heterogeneous ensembles of relations with other bodies, other organisms, practices and knowledges, and so on, none of which enjoys absolute

¹¹ John Protevi, *Life, War, Earth: Deleuze and the Sciences* (London: University of Minnesota Press, 2014).

¹² Bernard Stiegler, *Technics and Time: The Fault of Epimetheus*, trans. Geoffrey Beardsworth (Stanford: Stanford University Press, 1998).

¹³ Joanna Zylinska, "Playing God, Playing Adam: The Politics and Ethics of Enhancement," *Bioethical Inquiry* 7, no. 2 (2010): 149–61, PAGE.

ontological or explanatory priority.¹⁴ The salience and effects of any one interactant—even one so apparently foundational as organismic structure—is a function of its interactions with every other. Before such relations, its status is that of potential. Potential gets actualised through entry into relations. *How* it gets actualised depends upon the relations entered. Nevertheless, I'm suggesting that such ensembles do typically have a persistent technological dimension, insofar as bodies are perpetually in relation with situations whose arrangement is worked over by human activity.

3. Inter-Mundane Technology and Disability

I'll now discuss two concepts—a mode of technology, and a disposition towards technology—that together contribute to one way that disability happens. I'll call the mode *inter-mundane technology*. By this, I mean something similar to what Ihde calls 'background relations'.¹⁵ Earlier I discussed his 'embodiment relations': those relations, familiar to phenomenologists, wherein technologies become so incorporated through familiarity that they withdraw into the background of awareness during the activity they allow. During looking or hammering, focus isn't upon eyeglasses or hammer, but what is seen or hit. Background relations, by contrast, fall even farther outside attention. These concern technologies that operate as fully withdrawn. Ihde discusses such pervasive technological scaffolds as shelter technology, traffic control systems, automatic and semiautomatic household appliances, lighting and temperature systems.¹⁶ These are fully *present* to consciousness *as absent*, because they manifest as part of the environment (into which they disappear). They invisibly accompany and support humans as they traverse the world, and structure the world in important ways without drawing attention to themselves.

I'll modify Ihde's definition somewhat. By inter-mundane technology I mean, first, anything artefactual that generally does not signal itself as such. Activities in which these are involved can be complex or simple. Walking usually involves technology. A pathway is just as much a technology—for expediting travel, demarcating territory,

¹⁴ Bruno Latour, *Pandora's Hope: Essays on the Reality of Science Studies* (Cambridge, MA: Harvard University Press, 1999).

¹⁵ Ihde, *Technology and the Life World*.

¹⁶ Ibid.

domesticating ‘wilderness’, modifying spatio-temporal relations—as is a stone adze or a smartphone. It is a human modification of the world whose contribution to ambulation typically goes undiscerned. Besides surfaces, we could think of internal dimensions of everyday and domestic spaces, distances between buildings in public space, lighting and shade, gradients, and associated temporal implications. Inter-mundane technologies, then, fall somewhere between technical artefact and environmental feature. They are one concrete dimension of the relations into which bodies enter when traversing environments.

A second aspect concerns how these technologies are—ostensibly—not designed for specific bodies, but are supposed to befit the body of a universal or generic human. It’s just this aspect that I dispute. This brings us to ability and disability. First, I’ll note that for my approach, much that seems natural and spontaneous involves a technologically-scaffolded dimension. Any apparently spontaneous use of tools is a function not only of the body, but of relations with an available and sympathetic milieu. If activity is a function of relations, this implies the ubiquity of a composite or distributed agency, and that the notion of a fully autonomous human—with its ideal ‘ability’—is somewhat spurious.¹⁷ Fully context-transcendent ability would imply an originary, self-sufficient, complete human, as though in the state of nature, a condition representing “the absence of relation”.¹⁸

However, it’s inadequate to stop at the statement ‘all bodies are technologically-enabled’. While humans and technologies may indeed develop together, this development has been partial and uneven. Existing sites for activity are grounded on an ontogenetic history of body-technology interactions, practices that have harmonised relations between bodies and things. Non-normative bodies have scarcely been considered during the elaboration of technologies. The artefacts designed for embodiment relations are materialisations of value, that avail themselves only to certain kinds of body. Just as these technological objects embody norms, so do

¹⁷ Lucas D. Introna, “Towards a Post-human Intra-actional Account of Sociomaterial Agency (and Morality),” in *The Moral Status of Technical Artefacts*, ed. Peter Kroes and Peter-Paul Verbeek, Philosophy of Engineering and Technology (Dordrecht: Springer, 2014), 31–53.

¹⁸ Stiegler, *Technics and Time*, 128.

technological milieus, that presuppose certain bodily arrangements, capacities, and competencies.

Inter-mundane technologies also pattern environments differently and non-neutrally. This creates an asymmetry in how such environments afford activity. Contexts delimit in advance which activities are available, which bodies are assigned value. This disjuncture brings into being one aspect of disability. Strictly speaking, disability does not reduce to physical properties, but comes into being within relations. It is not intrinsic to an atypical body that it cannot act in a certain milieu; rather, that historically elaborated milieu accommodates only typical bodies. This does not deny that ability has degrees, only that it is specifiable independent of context and activity. There is no disability antecedent of situation, only disabling and enabling relations. This makes occurrence not merely spatial but temporal. In a time-worn example, a wheelchair-user only becomes disabled when acting within unsympathetically organised space. I don't mean by this that impairment—here, that of a wheelchair-user—is a natural fact prior to entry into social space. All bodies exist at the intersection of myriad heterogeneous relations, and have no 'nature' prior to these. For the 'disabled person' those interacting dimensions include DNA, phenotype, law, discourse, science, medicine, spatial arrangements, technologies. That disability does not correlate with biology does not entail that phenotype is irrelevant. Phenotype can play a role, but rarely is there—*nor need there be*—an inevitable correlation with certain effects.¹⁹ Just as with normative bodies, its reality is produced in relations with other dimensions.

4. The Role of the Technological Unconscious

This general incongruity between atypical bodies and mundane space is one aspect of what I'm calling *unsafe ground*. The other concerns the role within activity of *expectation* about technical milieus. Here I'll discuss habituation in terms of an embodied dimension that Nigel Thrift, citing Patricia Ticiento Clough, calls the 'technological unconscious': a "prepersonal substrate of guaranteed correlations, assured encounters,

¹⁹ Arun Saldanha, "Reontologising Race: The Machinic Geography of Phenotype," *Environment and Planning D* 24, no. 1 (2006): 9–24.

and therefore unconsidered anticipations”.²⁰ Following repeated correlations, positionings and juxtapositionings within technological spaces that presuppose particular competencies, bodies acquire sets of sedimented dispositions and comportments. These comportments, then, harmonise with normatively-organised technological spaces. These environments show up as “spaces of anticipation”.²¹ With time these relations—with objects, situations, routes—accrue ontological fixity and naturalness: expectation hardens into ‘the way things are’. Crucially, since this involves *prepersonal* bodily dispositions, it includes a felt sense that bodies and things have correct and incorrect postures, positions and dispositions. Purportedly natural space is freighted with a deep sense of rightness and wrongness that is more affective than reflective. This is abetted by the propensity of technological relations to withdraw from awareness, allowing technological contributions to fall by the wayside.²² This is especially pointed with inter-mundane forms.

Typical bodies—that are also normatively-endorsed in the general scheme of things—not only benefit from environments tailored to their capacities. Habitually encountered space seems, if not necessarily homely, at least familiar or unchallenging, and the body-world relation can be forgotten. This allows for formation of durable habitual relations, and in turn, unquestioned anticipations, and an associated sense of confidence and ease in the world at large. Indeed, technologies can only contribute to activity *and* withdraw from awareness if they accord with the body in question. When things go smoothly—when there is a fit between bodies and inter-mundane space—prepersonal expectations are fulfilled, the semblance of naturalness is achieved, and conventional aspects do not surface.

Disability has such a temporal aspect: it is implicated within future-orientation. Norms laid down in the artefactuality of the world—including, as we have seen, those that presuppose typical embodiment—structure how possibility shows up, and thereby contribute to the basic structure of tracing out possibilities for action. Lived space is apprehended as eliciting certain actions, inter-mundane situations saturated with

²⁰ Nigel Thrift, “Remembering the Technological Unconscious by Foregrounding Knowledges of Position,” *Environment and Planning D: Society and Space* 22, no. 1 (2004): 175–90, p. PAGE.

²¹ *Ibid.*, 175.

²² Latour, *Pandora’s Hope*.

norms concerning ‘what everyone does’. The atypical body is in the midst of a world traced out by potential it cannot actualise, or where its comportment to some extent mis-matches context. Disjuncture arises between possibility and actuality, intention and realisation. Or, by contrast, the very lack of affordances might be recognised, leading to hesitation.

This means that where normative bodies for the most part enjoy implicit support, and can have unquestioned confidence about relations with the world (without recognising relations as relations), for atypical bodies the incongruence between embodiment and spatial organisation makes it difficult for the habit body to find purchase. Consequently, the relation of body and space cannot be so easily forgotten: a permanent question hangs over the reliability of relations. This can freight the future with a negative ambiguity. This is all the more pertinent if, as I maintain, possibility comprises a substantive aspect of existence. If temporal passage is characterised as having a world through experience of significant possibilities and meaningful change, this very structure may be modified. Lost confidence attenuates anticipatory structure: the sense of possibility—potential to imagine otherwise, to conceive of oneself doing otherwise—is dampened. Where a sense of possibility is attenuated, intentional threads connecting anticipation to what Matthew Ratcliffe calls ‘teleological time’—directedness toward more remote but not necessarily less-determinate goals—are slackened.²³ Instead of a future of significant possibility, there is one where possibilities are curbed.

The fulfilment of the prepersonal expectations of typical bodies conceals the underlying contingency of the relations that ensure such fulfilment. This reinforces the sense that the actions of typical bodies are spontaneous and free, and that such capacities are inherent property of their body (as well as a sense that the environment in which they act is a neutral scene). By contrast, mis-fit or disharmony between non-normative bodies and apparently neutral inter-mundane space gives the impression of natural pathology: that disharmony flows fully from the atypical body. What is crucial here is that while arbitrary and conventional, inter-mundane technology and

²³ Matthew Ratcliffe, Mark Ruddell, and Benedict Smith, “What Is a “Sense of Foreshortened Future?”: A Phenomenological Study of Trauma, Trust, and Time,” *Frontiers in Psychology* 5 (2014): 1–11.

technological unconscious convey a sense of inevitability. This very mundanity make the activities they support seem all the more natural, but this also means that the basic relationality and contribution of technologies gets elided. Indeed, this is one way that disability's very heterogeneity—that it has multiple, relational determinants—gets simplified and reduced. It is transformed back into objective, 'natural' somatic properties.²⁴

Concluding Remarks

By contrast, all activity involves relations. If living is the movement of bodily self-transcendence—a body not something one has, but does—then whatever contributes to that activity is, for the duration of the relation, a part of that living being. This is just as true of intra-mundane components as of more conspicuous prosthetics. Indeed, I'm not sure there is any difference in kind between embodied technologies, and those that are not. Intra-mundane technologies form a persistent dimension of the activity of moving bodies. This means that for atypical bodies, one aspect of their being—that contributes to self-constitution or ontogenesis—is consistently unsympathetic. This ungrounds anticipation and attenuates or delimits potential. Importantly, since much of this occurs at a prepersonal level, it is felt more than known. It is the sense of felt possibilities relative to the body, but where only the body, and not its relations, are recognised as their source. It is a constant affective dampener on embodied potential. Moreover, since each interactant in an ensemble of relations affects the contribution of every other, this dampening can inflect how other relations manifest. Unsafe ground might interact with somatic dimensions (environs condition how phenotype manifests: what one can physically do, how much fatigue should be expected); with dispositions (how open one is to the unexpected, to risk); with discourses (how willing one is to accept diagnosis, or identify as disabled). Of course, these are all in constant, mutually-conditioning interaction. While I am cautiously optimistic about possibilities that technological developments afford to atypical bodies, much outstanding metaphysical

²⁴ This resembles an aspect of Bruno Latour's 'Modern Constitution': even though contemporary life unfolds among a tangle of overlapping and heterogeneous hybrids, modern thought sorts into the overarching categories 'Nature' and 'Society'. (Latour, *We Have Never Been Modern*)

baggage must get cleared out on the way, if this is not to impede our ability to imagine other ways of living. A central aspect of this stocktaking is a rejection of the spurious self-aggrandisement of the unattached and unimpeded human subject, in favour of a relational thinking that highlights not just the presence of enabling milieus, but how the shape of those milieus entails an unequal distribution of capacities for activity.

Works Cited

- Aristotle. *Physics*. Translated by Robin Waterfield. Oxford World's Classics. Oxford: Oxford University Press, 2008.
- Feenberg, Andrew. *Transforming Technology: A Critical Theory Revisited*. Oxford: Oxford University Press, 2002.
- Hoel, Aud Sissel, and Annamaria Carusi. "Thinking Technology with Merleau-Ponty." In *Postphenomenological Investigations: Essays on Human-Technology Relations*, edited by Robert Rosenberger and Peter-Paul Verbeek, 73–84. Postphenomenology and the Philosophy of Technology. London: Lexington Books, 2015.
- Ihde, Don. *Technology and the Lifeworld: From Garden to Earth*. Bloomington and Indianapolis: Indiana University Press, 1990.
- Introna, Lucas D. "Towards a Post-human Intra-actional Account of Sociomaterial Agency (and Morality)." In *The Moral Status of Technical Artefacts*, edited by Peter Kroes and Peter-Paul Verbeek, 31–53. Philosophy of Engineering and Technology. Dordrecht: Springer, 2014.
- Latour, Bruno. *Pandora's Hope: Essays on the Reality of Science Studies*. Cambridge, MA: Harvard University Press, 1999.
- . *We Have Never Been Modern*. Translated by Catherine Porter. Cambridge, MA: Harvard University Press, 1993.
- McCumber, John. "Why Is Time Different from Space?" In *Beyond the Analytic-Continental Divide: Pluralist Philosophy in the Twenty-First Century*, edited by Jeffrey A. Bell, Andrew Cutrofello, and Paul M. Livingston. London: Routledge, 2016.
- Merleau-Ponty, Maurice. *Phenomenology of Perception*. Translated by Donald Landes. London: Routledge, 2012.
- Protevi, John. *Life, War, Earth: Deleuze and the Sciences*. London: University of Minnesota Press, 2014.
- Ratcliffe, Matthew, Mark Ruddell, and Benedict Smith. "What Is a "Sense of Foreshortened Future?": A Phenomenological Study of Trauma, Trust, and Time." *Frontiers in Psychology* 5 (2014): 1–11.
- Romdenh-Romluc, Komarine. "Merleau-Ponty and the Power to Reckon with the Possible," 2007.
- Saldanha, Arun. "Reontologising Race: The Machinic Geography of Phenotype." *Environment and Planning D* 24, no. 1 (2006): 9–24.
- Stiegler, Bernard. *Technics and Time: The Fault of Epimetheus*. Translated by Geoffrey Beardsworth. Stanford: Stanford University Press, 1998.
- Thrift, Nigel. "Remembering the Technological Unconscious by Foregrounding Knowledges of Position." *Environment and Planning D: Society and Space* 22, no. 1 (2004): 175–90.
- Zylinska, Joanna. "Playing God, Playing Adam: The Politics and Ethics of Enhancement." *Bioethical Inquiry* 7, no. 2 (2010): 149–61.