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'll 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 comprises an aspect. Then I'll outline *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* (habituated expectation about how the world is). Finally, I'll discuss how norms materialised in inter-mundane technologies lead to one way disability gets enacted, to erode bodily confidence in the world.

1. Objective Embodiment and Instrumental Technology

I'll initially sketch the models of body and technology that I oppose. First is the objective model of the body. This, unsurprisingly, takes the body as a mere object: something like a 'brute' or 'natural fact'. The body possesses clear boundaries, and can be described exhaustively and accurately from a scientific standpoint. It is separate from subjectivity or personhood. 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 the product of brute natural forces. Any subsequent modification does not change its essence.

In it, 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. Overall, from this perspective *relations, temporality, and normativity are inessential to the body*.

This fundamentally misconceives what is characteristic about organisms. I reject objective embodiment separate from 'consciousness', for an account in which the body is a locus of pragmatic action: an 'organ' of movement and connection, both within, and opening onto, the world. This is grounded in the primacy of movement, which is, put simply, transition towards or away from something to which the body attributes positive or negative value.[1] This means that the three aspects that objective embodiment deems inessential—relationality, temporality and normativity—are instead fundamental and constitutive dimensions of living bodies. Relationality means that, as active, the body is continually drawn outside itself and into relations with other things. It does not terminate at the dermal boundary, but exists in relations with its milieu. This also involves temporality: as always acting beyond itself, the 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 never definitively here or now, but is always outside and ahead of itself: it has a "non-simple location in that it is never wholly within one specifiable locus [and is] always already on the way to

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[1] That is, as in Spinoza, the body is given as a power of acting, which is apprehended as a feeling of capacity. Benedict Spinoza, *Ethics* (London: Penguin, 1996).

[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.

somewhere else".[3] Finally, normativity is likewise basic. 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 containing potential for this or that activity. This is not judgement made about prior perceptual experience, but is basic to perceptual experience.[4] There is no world except meaningful situations given to the body, and no experience of the body except as orientated towards those situations. In sum, the living body is always disposed towards some activity in the world, through which activity it produces itself.

For human animals,[5] one—perhaps preeminent—aspect of basic relationality involves technology. 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 premiss the *principle of externality*. Technologies are fully exterior to the human. They are mere means, awaiting use towards autonomously-formulated human ends.[7] They are epistemically and morally neutral, or at the very least, "subservient to values established in

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[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.

[4] Komarine Romdenh-Romluc, "Though in Action," in *The Oxford Handbook of Contemporary Phenomenology*, ed. Dan Zahavi (Oxford: Oxford University Press, 2012).

[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).

other… spheres".[8] Second is the *principle of essentialism*. If technology *is* external and neutral, whatever it permits merely augments or reflects preexisting 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 them while leaving no trace.[9] Overall, technology makes no profound contribution to human actions (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 merely describes so many objects used by humans towards autonomous goals. Of course, there are other ways to understand this relation. I suggested that the body exists through active, constitutive relations with its milieu. The human milieu is technological. The human is a technical animal (as are certain nonhuman animals), where technics refers less to technological objects, and more to a constitutive relation of embodied activity with

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[8]   Andrew Feenberg, *Transforming Technology: A Critical Theory Revisited* (Oxford: Oxford University Press, 2002), 5. Peter Kroes and Peter-Paul Verbeek, "Introduction: The Moral Status of Technical Artefacts," in *The Moral Status of Technical Artefacts*, ed. Peter Kroes and Peter-Paul Verbeek, Philosophy of Engineering and Technology (Dordrecht: Springer, 2014).

[9]   Kroes and Verbeek interestingly note how positive metaphors about technology tend to ascribe goodness to the wisdom of its human users, while negative assessments indict technology precisely for having its own autonomy: while a human creation, it goes on to resist, override, or even determine, human will.

external things, through which extra-organismic materials get profoundly incorporated.

I'll briefly mention two approaches with which I broadly agree. The first considers *technology internal to perceptual experience or embodied activity*. Unlike instrumentalism—wherein artefacts merely expedite or extend preexisting 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 visually-impaired man who incorporates his cane within bodily intentionality, such that this technology is not external, but one point of sensitivity among others,[10] or the more quotidian instance of eyeglasses. 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 artefacts no longer feel separate, is thanks to the character of involved, prereflective bodily projection, and what Don Ihde calls the "polymorphous sense of bodily extension":[11] that the scope of the body schema is unfixed, and can expand and contract relative to what technological relations are embodied. This allows technologies to mediate body and world transformatively, while awareness of body *and* technology withdraws into the experiential background: focus goes 'through' these to the activity their coupling enables.[12] I propose that this be pressed further still. Thought and action not only *overspill*

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

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

[12] Ibid., 32. They fall within the subject pole of the subject-object structure. Eyeglasses may sit between seer and seen; vision may go through them. Nonetheless, the referent is 'outside' body and glasses. This is as much the case for audial as for visual perception, and obtains for simple and complex technologies alike.

embodiment. The activity emerges within, and supervenes upon, the dynamic processes of interaction *between* bodies and environments.[13] The activity is located precisely *in* or *as* the relation, not in the things that are in relation.

A second way to understand this relation involves the technological genesis of the human as such. This can be summarised by the claim that *human and technology develop together*. This is similar to Bernard Stiegler's proposition that the human has an 'epiphylogenesis': technology is essential to the human, which has always incorporated extrinsic materials, and evolves by externalising itself in technical artefacts.[14] However minimally, all activity has some technological dimension: whether proximal (like previous examples wherein some artefact—a cane, a notebook, glasses[15]—is incorporated within bodily comportment to enable or transform action and cognition) or distal (the deep historical provenance of technologies structuring present activities). This definition of technology is very broad, and involves very basic and mundane instances. It describes any product of *technê*: 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, determined through and dependent upon creative engagement with artefacts. Its being simply is to negotiate human-nonhuman boundaries via "a long line of technical prostheses such as flint

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

14 This externalisation is mirrored within the subject as what Stiegler calls *la vie d'esprit*.

15 Ihde, *Technology and the Life World*. Andy Clark and David Chalmers, "The Extended Mind", *Analysis* 58, no. 1 (1998).

stones and other 'memory devices' that have played an active role in the very process of the constitution of the human".[16]

A brief point of qualification: this doesn't mean that elaboration of the human is a reciprocal relation between two kinds of object, bodily and 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 ontological or explanatory priority.[17] 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 it is only 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 like Don Ihde's 'background relations'. Earlier I discussed *embodied relations*: relations wherein technologies withdraw into the background of awareness relative to the activity that they allow. During

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[16] Joanna Zylinska, "Playing God, Playing Adam: The Politics and Ethics of Enhancement", *Bioethical Inquiry* 7, no. 2 (2010).

[17] They are something like the Foucauldian *dispositif*, the Deleuzoguattarian assemblage, the Latourian quasi-object. Michel Foucault, *The History of Sexuality Volume 1: An Introduction*, trans. Robert Hurley (New York: Pantheon, 1978). Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (London: University of Minnesota Press, 1987). Bruno Latour, "An Attempt at a 'Compositionist Manifesto'", *New Literary History* 41, no. 3 (2010): 471-490. Latour, *We Have Never Been Modern*.

looking or hammering, focus isn't upon eyeglasses or hammer. Background relations, by contrast, fall much farther outside attention. They 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.[18] 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. As such, they 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.[19] 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, domesticating 'wilderness', modifying spatio-temporal relations—as is a stone adze or a smartphone. It is a human modification of the world whose contribution goes unnoticed. Besides surfaces, we could think of internal dimensions of mundane and domestic spaces, distances between buildings in public space, lighting and shade, gradients, and associated temporal implications. Inter-mundane technologies are one concrete dimension of relations into which bodies enter when traversing environments.

A second aspect is that these technologies are—ostensibly—not for specific bodies, but supposed to befit bodies-in-general, a 'generic human'.

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[18] Ihde, *Technology and the Life World* 108.

[19] Admittedly, I am stretching Ihde's argument beyond its original scope. I propose that while modifications of environments differ in certain aspects from technologies worn in and on the body, they each are examples of ways in which there is a technological modification of the body-world relation.

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 sympathetic milieu. If activity *is* a function of relations, this implies the ubiquity of a composite or distributed agency,[20] and that the notion of a fully autonomous human—with its ideal 'ability'—is somewhat spurious. 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".[21]

To say 'all bodies are technologically-enabled' remains inadequate. While technologies and bodies develop together, this has been partial and uneven. Spaces for action are grounded on an ontogenetic history of body-technology interactions, practices to harmonise relations between bodies and things. Non-normative bodies have scarcely been considered during elaboration of inter-mundane technology. Technological artefacts are materialisations of values. As intended to act on or for bodies—they have what Bruno Latour calls 'programs of action'[22]—artefacts embody expectations about users. Just as technology embodies norms, so technological milieus presuppose certain bodily competencies. These may go unacknowledged, leading to materialisation within artefacts of

[20] Latour, *We Have Never Been Modern*. 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).

[21] Bernard Stiegler, *Technics and Time: The Fault of Epimetheus*, trans. Geoffrey Beardsworth (Stanford: Stanford University Press, 1998), 128.

[22] Bruno Latour, "On Technical Mediation", *Common Knowledge* 3, no. 2 (1994): 29-64.

unexamined partialities, embodied as programs of action that interact with the programs of moving bodies.[23]

Inter-mundane technologies pattern environments differently and non-neutrally, such that the 'normal body' is given implicitly within somatechnical relations. This creates asymmetry in how such technologies afford activity. Contexts delimit in advance which activities are available, and 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 an ensemble. It is not intrinsic to an atypical body that it cannot act in a milieu; a 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.[24] In a time-worn example, a wheelchair-user only becomes disabled when acting within unsympathetically organised space.[25] 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

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[23] Latour calls these 'scripts'. These embody tacit roles for user actions. These scripts translate human actions into different forms: a speed bump with the program 'damage the suspension of fast-moving cars' translates 'drive fast' into 'slow down to avoid damage'. In this way, objects shape the goals, and indeed formulations of goals, of human agents, and delegate to objects the responsibility for enacting those programs (i.e., they are materialised norms). Ibid.

[24] Thus, disability is relational in the sense meant by Carol Thomas—brought about in the interplay between bodies, projects and norms—but also in the wider sense of depending for existence upon intercorporeal relations between a plurality of bodies. I part company with Thomas is in her general alliance to Marxist materialism and essentialist view of impairment. Carol Thomas, "How Is Disability Understood? An Examination of Sociological Approaches", *Disability & Society* 19, no. 6 (2004). Thomas, "Rescuing a Social Relational Understanding of Disability", *Scandinavian Journal of Disability Research* 6, no. 1 (2004).

[25] While it may seem counterintuitive, the same holds for intellectually disability: impairment manifests only in relation to the performance of a certain task.

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. Just as with normative bodies, its reality is produced in relations with other dimensions.

4. The Role of the Technological Unconscious

This is one aspect of what I'm calling *unsafe ground*. The other concerns the role within activity of *expectation* about the technical milieu. Here I'll discuss the 'technological unconscious': an embodied dimension that Nigel Thrift, citing Patricia Ticiento Clough, calls a "prepersonal substrate of guaranteed correlations, assured encounters, and therefore unconsidered anticipations".[26] Repeated correlations, positionings and juxtapositionings, amongst bodies and things within technological spaces that presuppose particular competencies, incarnate norms about the body within prereflective practice. Comportments get harmonised with normative technological spaces. Environments show up as "spaces of anticipation".[27] Expectation becomes 'the way things are'. Myriad relations—with objects, situations, routes—accrue ontological fixity and naturalness. Crucially, as involving *prepersonal* bodily dispositions, this 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

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[26] Nigel Thrift, "Remembering the Technological Unconscious by Foregrounding Knowledges of Position", *Environment and Planning D: Society and Space* 22, no. 1 (2004).
[27] Ibid., 175.

reflective. This is abetted by the propensity of technological relations to withdraw from awareness, allowing technological contributions to fall by the wayside. This is especially pointed with inter-mundane forms.

Normative bodies disproportionately enjoy unquestioned anticipations, and an associated sense of confidence. Indeed, withdrawal can only occur if there is an expected and congruous context. Technologies can only contribute to activity *and* withdraw from awareness if in accord with the body in question. When things go smoothly—when there is a fit between normative 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 normative embodiment—structure how possibility shows up, and thereby contribute to the basic structure of tracing out possible action. Lived space is apprehended as eliciting certain actions, inter-mundane situations studded with 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 non-normative bodies 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.[28] Lost confidence *attenuates* anticipatory structure: the sense of possibility—potential to imagine 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.[29] Instead of a future of significant possibility, there is one where possibilities are curbed.

The fulfilment of prepersonal expectations of normative bodies about inter-mundane space conceals the underlying contingency of the relations that ensure such fulfilment. This reinforces the sense that the actions of normative bodies are spontaneous and free, and that such capacities are inherent property of their body, as well as that the environment is neutral or natural. 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 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. This resembles Latour's thesis that

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[28] Matthew Ratcliffe, "Varieties of Temporal Experience in Depression", *The Journal of medicine and philosophy* 37, no. 2 (2012). 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).

[29] Lisa Diedrich, "Breaking Down: A Phenomenology of Disability" 20, no. 2 (2001).

while life for the most part unfolds among a tangle of overlapping and heterogeneous hybrids, modern thought sorts into the overarching categories 'Nature' and Society'.[30]

Concluding Remarks

By contrast, all activity involves relations. If living is the movement of bodily self-transcendence—the 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 non-normative 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 discourse

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[30] Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2005). Latour, *We Have Never Been Modern*.

(how willing one is to accept diagnosis, or identify as disabled). Of course, these are all in constant, mutually-conditioning interaction.

I'll end by noting that I'm very optimistic about possibilities afforded to non-normative bodies by technological developments. It remains the case that outstanding metaphysical baggage must get cleared out on the way, since, as embedded in concrete everyday practices, these structure the ability to imagine other ways of living.

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