

Posthuman to Inhuman: mHealth technologies and the digital health assemblage

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Posthuman to Inhuman: mHealth technologies and the digital health assemblage

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Posthuman to Inhuman: mHealth technologies and the digital health assemblage

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Abstract

In exploring the intra-active, relational and material connections between humans and non-humans, proponents of posthumanism advocate a questioning of the ‘human’ beyond its traditional anthropocentric conceptualization. By referring specifically to controversial developments in mHealth applications, this paper critically diverges from posthuman accounts of human/non-human assemblages. Indeed, we argue that, rather than ‘dissolving’ the human subject, the power of assemblages lie in their capacity to highlight the antagonisms and contradictions that inherently affirm the importance of the subject. In outlining this claim, we propose a turn from the posthuman to the inhuman as a way of understanding the contemporary landscape of (digital) health.

The move away from dualistic understandings of the biological and social, digital and physical is one that fundamentally underscores our relation to technology in the context of health and illness. In fact, while, for many, technological advancements have emphatically benefited a large proportion of the world’s population, being used to both manage and monitor a variety of health concerns, these technologies maintain a level of intrusiveness that only further denigrates – or, at least, calls into the question – ‘the human’.

At the forefront of this ‘questioning’ has been the concept of the posthuman. Originating in science-fiction, the concept has undergone a broader theoretical, analytical and political application which has extended its exploration of the ‘human’ across the sciences, arts and humanities. Certainly, the approach is not without its own conceptual inconsistencies, with the variety in its spelling revealing the inherent ambiguity of approaching a stage, phase or period of humanity beyond our current definitions.¹ To this extent, we take the following from Dow and Wright as a point of orientation:

critical posthumanism sees science and technology not as mere instruments of change in the hands of human agents, but rather as part of a much wider and more complex cultural shift traversing also the humanities and arts wherein the subject is re-conceived as ever more decentered.²

With a theoretical alliance to critical (post-)structuralist thinkers, such as Michel Foucault, Giles Deleuze, Felix Guattari, Judith Butler and Donna J. Haraway, we locate posthumanism’s ‘decentering’ of the human (and the humanities) as a key tenet underscoring its approach.³ Indeed, over the course of this paper, we will return frequently to this ‘decentred’ understanding in order to draw out broader connections between the posthuman and technology, whilst engaging in critical discussion regarding the ontological presuppositions which anchor posthuman analyses.

It is in view of the latter that we conceive the biggest impact on health sociology as well as the treatment, management and ‘digitalization’ of health and illness. With reference to developments in technology and, specifically, mHealth technologies (defined below), we echo the concerns of the philosopher, Slavoj Žižek, who notes that advancements in technology are not just signaling a decentered approach to the human through technological innovation, but

that such developments require a renewed return to what defines the human.⁴ Accordingly, while critical research ‘has abandoned the central focus on humans to explore the emergence of new forms of relationality and subjectivity’⁵ – with Haraway and Rosi Braidotti proving notable examples⁶ – it will be contested in this essay that the strength of post-human scholarship lies less in its ability to dissolve the ‘human’, but, rather, to apply a renewed focus on how we define, approach and relate to human subjectivity.

In building this approach, we will consider the important role played by mHealth technologies in what can be referred to as an emerging digital health assemblage. As noted by Andrews and Duff, while there remain ‘unresolved tensions ... that complicate any notion of a neat break between humanist and posthumanist interests in studies of health and illness’, it is in ‘investigating the mechanisms of health assemblages’ that possible progress can be made.⁷ To a certain extent, we agree with Cohn and Lynch’s suggestion that the posthuman approach, and, specifically, its location in a broader understanding of human/non-human assemblages, offers a useful re-conception of how we define and conceive health.⁸ However, echoing Lupton, ‘it is important for sociologists to continue to challenge the discourses that privilege certain types of bodily assemblages’,⁹ especially when these assemblages afford new potentialities in and with new technologies.

Our path in this essay, and, moreover, our critique of the prevalence of the posthuman, will serve to clarify the potential benefit that our digital health assemblages can provide. We predicate this direction on a psychoanalytic reading of the subject, one evidenced in Voruz’s claim that ‘A more sympathetic understanding of posthumanism would see it as a symptom in the psychoanalytic sense, which is to say an attempted treatment of the non-naturalness implicit in being human’.¹⁰ Following this, we consider how the emergence and adoption of mHealth technologies can, in the form of the digital health assemblage, help to redirect attention to the antagonisms, contradictions and inconsistencies that do not negate the subject, but, rather, posit

its central significance in discussions on technology and health. This is not a claim that seeks to reduce our understanding to an individual particularism, instead it works to consider the ‘inhuman’ otherness that remains pertinent to our understandings of the human subject.¹¹ This ‘inhuman view’ will be traced in view of re-approaching traditional subject-object antagonisms and their impact on *posthuman* theorizing.¹² Before this, however, let us proceed to explore the significance of mHealth technologies and their impact on health and illness.

Posthuman Assemblages and the Proliferation of mHealth Technology

Broadly defined, we can delineate the possibilities of posthuman theory as an attempt to ‘re-socialise’ the human subject. Indeed, this is not a socialization that seeks to assert the ‘human’; instead, it serves to locate the subject and the subject’s sense of self in accordance with a variety of non-human actants and objects, each of which play their part in bringing about the subject’s existence. Under such logic, posthumanism contends that there is no autonomous subject; in fact, to refer to a subject in such terms merely reasserts a Cartesian outlook. Here, the *posthuman* is one that is defined in its existence as one object amongst various other (human/non-human) objects. Consequently, ‘As a theoretical orientation and mode of thinking, posthumanism rejects humanism’s “common sense” views on the “self-evident” primacy and uniqueness of the human in life’.¹³

Accordingly, the relationship between human and non-human is ontologically conceived via a folding that neither delimits nor constrains the boundaries that have traditionally been used to differentiate their distinctions. In so doing, ‘it is ... in the twenty-first century [that] the human increasingly opens out to varying more-than-human assemblages of digital cultures, algorithmic automation, media diffusion, engineering solutions and emergent bio-technologies’.¹⁴ In the context of health, such trends are now omnipresent. As of

the end of 2017, around 325,000 health and medical apps were available via app stores, and the application of such software extends to everything from reproductive cycles and diet to the monitoring of pregnancy and sexual health.¹⁵ This is conceived of through the human-app health assemblage, in which digital technologies such as ‘Apple Heart Study’ and ‘Bluestar’ are located within a more-than-human world, which ‘generate forces and capacities only with and through their associations and relations with the humans who create and use them’.¹⁶

Our understanding of the effects of these ‘more-than-human assemblages’ begins primarily from the work of Deleuze and Guattari.¹⁷ In their materialist ontology, Deleuze and Guattari locate human desire as attributable to its interactions with both physical and social assemblages, from which our desire to forge new relations is motivated not by any biological determinant (such as, genes), but through the body’s agency. This agency provides an original account of how the body cannot be reduced to either the biological or social but is instead shaped by its relations within a complex physical/social assemblage that affords the opportunity for deterritorialization and reterritorialization of these very assemblages. It is this heterogenous consistency which prescribes movement to the body; encapsulated in what Deleuze and Guattari refer to as a pool of potential: a ‘body without organs’. This concept posits the body as without any definite image, marked by limits and capacities, but nonetheless comprising a variety of virtual potentials. In the case of ‘health’, what Deleuze and Guattari allow us to consider is how our understanding of health is not prescribed by any prescribed image of the ‘healthy body’, rather it is determined by and constituted in the possibilities and limits afforded by a complexity of physical, social, and psychic assemblages, each impacting upon as well as helping to prescribe the body’s agency. What remains essential to this approach is how this agency is delimited through a complex array of assemblages and the power they exercise.

For example, in his analysis of running and health, Kurtoğlu-Hooton illustrates how digital social networks, such as those provided by Strava and Fitbit, operate as both a point of passage for the sharing of data, and a cultural support for the performance of runners' lifestyles.¹⁸ Accordingly, he contends that such platforms allow participants to enroll at a distance, disseminate activities, make visible their own sense of belonging (for instance, through photos of training sessions and races), and gauge their level of competency in relation to others. In adopting this focus, the body without organs is subject to an open assemblage, which is constructed through a multitude of human and non-human relations that proclaim 'neither closure nor interpretation but instead productivity, openings, and a state of constant flux'.¹⁹ Here, the notion of (inter)corporeality is extended to account for a large system of interacting forces and intensities, including technological artefacts such as shoes, clothes, and social media, which, when combined (or assembled) with other humans and nonhumans, allow runners to establish themselves as viable actors in a particular social milieu.

Indeed, the ability to draw attention to the complex fluidity that governs any given body, and its associated parts, is afforded further consideration in the work of Bruno Latour and his Actor Network Theory (ANT).²⁰ In this approach, Latour describes an assemblage of nonhuman objects each providing the capacity to influence and shape a variety of (human/non-human) actants. In the case of technology, Latour's work offers a somewhat paradoxical precis on the dissolution of the human and its prescribed focus on the non-human. By managing or limiting the centrality of the human, who exists within a vast network of relations with non-human objects, ANT seeks to prescribe a conception of power where, to a large extent, it is non-human entities who act upon and thus affirm a powerful effect on the human-centred world. Unlike Deleuze and Guattari, this is not a body whose agency is forged through a complex array of delimiting power relations, but an agency which is itself distributed across a variety of actions and actants. As a result, the influence of non-human actants fails to elaborate

upon what causes those very real disparities that undoubtedly manifest within any assemblage and, specifically, within technology assemblages. There is, instead, a flattening of ‘power’ amongst each actant, a position which becomes further complicated when considered in relation to health and technology.

Nonetheless, the work of both Deleuze/Guattari and Latour proves useful in proposing a decentering of the human body; one that seeks to draw attention to the broader context in which this body is defined and assembled amidst a number of associatory functions. Here, research has concentrated on the various encounters that underscore one’s capacity to define and express an approach to health. For example, in conceptualizing anti-depressants, McLeod shifts the emphasis from the depressed individual and onto the collective body, or assemblage, illustrating how anti-depressants necessitate human and nonhuman collaborations between psychiatrists, patients, neurotoxins, photographs, and drugs.²¹ Similarly, Andrews and Duff highlight how, in the treatment of alcoholism, one does not locate the ‘problem’ in the individual subject, but in an assemblage of actants each of which impacts upon the recovering alcoholic.²² This could include alcohol advertising; the prevalence of credit; the location and accessibility of shops selling alcohol; as well as the healthcare professional, arrangements and responsibilities, which all impact upon the body’s recovery.

In positioning the importance of these ‘health assemblages’, we can turn to the emerging popularity of digital mobile technologies, referred to as ‘mHealth’.²³ mHealth technologies denote the use of mobile phones, tablets and other personal assistance devices that seek to support and, in some cases, deliver, medical practice.²⁴ Though the technology is prescribed to those with ‘chronic medical conditions’, Lupton highlights that ‘They are also adopted voluntarily by individuals keen to track their biometric data in the interests of learning more about their bodies as part of attaining optimal health’.²⁵ The success of these mobile technologies has been supplemented with various mobile and tablet devices incorporating a

variety of ‘health, fitness and lifestyle’ applications (pre-programmed software that installed in the device). These apps allow the mobile user to observe, manage and record their exercise, food consumption and sleep patterns, through quantitative data metrics that both notify and remind the user to remain ‘healthy’.

The growing prevalence of this technology draws attention to a number of important contentions regarding the body and the relative autonomy that is now prescribed to these technologies.²⁶ Wearable devices, increasingly conspicuous, serve to take on the role of a healthcare professional, providing opportunities to target those for whom access to medical facilities may be difficult. It is on this basis that a turn towards mHealth devices has increasingly been hailed as a preferable ‘solution’ to health care provision.²⁷ The ‘personalization’ of this provision has been encouraged by the growing development of mHealth applications, used via smartphone and tablet devices. As of 2017, Globe Newswire noted that there were 325,000 mHealth apps, with many highlighting concerns towards the accuracy of their data as well as the possibility for these unregulated systems to provide potentially harmful information that may deny or disavow that provided by health care professionals.²⁸

While, for the moment, many of these technologies remain ‘outside’ the body, technological advancements are undoubtedly steering a path towards their ‘integration’ *in* the human body – most notably, on a bio-molecular level. To a certain extent, this is already happening in contexts such as sport, where the assessment of athletic performances is extending beyond self-reported metrics, towards a series of monitoring devices, such as sleep monitors, GPS tracking devices, and ingestible sensors that allow for around-the-clock surveillance, both on and off the field of play.²⁹ As Zwart explains, the underlying premise of these technologies would see the relationship between human and tech moving away from screen-notifications towards a micro-level health monitoring that works beyond the conscious awareness of the

human subject, thus, ‘giving rise to an intimate interplay between bodies, organs, and technologies’.³⁰ In what follows, we consider the effect of this ‘intimate interplay’ in accounts of the assemblage.

Assemblage Theory and it’s Discontents: Positioning mHealth as a Subjective Gesture

Along these lines, we can begin to determine how examples of mHealth technology will eventually locate the body in a wider technological assemblage steered by an algorithmic logic that controls, positions and manages the body’s materiality.³¹ Drawing upon Haraway’s notion of the ‘cyborg’, Lupton refers to the ‘digital cyborg assemblage’: a technological assemblage that conceives of the subject as a ‘cybernetic organism’; indeed, a system ‘in which data are produced which then affect behaviours that then create further data and so on’.³² What is more, these technological assemblages are predicated on an equalization of human/non-human relations; a depoliticization that remains indebted to the assumption that technology *is* (or, can be) objective.³³ This conception of technology uncritically assumes ‘a form of authority which is inherently anti-authoritarian’,³⁴ with its ‘power’ a mere reflection of the assemblage in which it resides. The implications of this ‘anti-authoritarianism’ is that, in view of the variety of mHealth technologies, ‘we have become (in a more radical sense than we are usually aware of) the subjects of these contrivances, which determine the elementary structures of contemporary existence’.³⁵

Certainly, this is not to ignore the fact that Haraway’s work considers the cybernetic impact of our human-cyborg imbrication and the very ways in which our machine affinity is determined, in part, by powerful gender dynamics.³⁶ What we highlight, however, is the paradox in asserting a position that, on the one hand, privileges the benefits of a cybernetic organism tasked with improving one’s health and well-being, while, on the other, professing a

critical distance towards these very assemblages. In effect, where lies the opportunity to both embrace but also critique an assemblage that has, in accordance with the cyborg, both blurred and diminished the boundaries between human and machine, thus erasing the very position from which such a critical perspective could be enacted? Instead, by decentering oneself through the use and adoption of mHealth devices, one is immediately subject to maintaining, checking, and managing the continuation of a digitalized ‘healthy’ self, from which the assemblage and its ‘power’ is enforced.

Indeed, this de-subjectivization of the subject can be identified in the various ways the body is measured, managed, and recorded *in* the mHealth assemblage. Akin to a Foucauldian ‘biopolitics’,³⁷ the capturing of the quantified body is subsequently rendered via a variety of analytical and statistical data that is presented and procured through the mHealth device. In so doing, one’s ‘self-tracking’ remains girded by an ever-present ‘self-optimization’.³⁸ For example, in their posthuman-Foucauldian reading of digital health technologies, Thorpe et al. examine the way in which bodies and technologies are continuously co-evolving.³⁹ In doing so, they show how women’s use of data tracking devices resulted in a dual experience of optimization. On the one hand, users saw data tracking as a way of informing their attempts to better themselves in terms of their physical health and appearance, thus reinforcing many of the disciplinary techniques associated with traditional dietary and fitness practices. By contrast, others saw the apps as a means of facilitating intense embodiment and corporeal pleasure. For better or for worse, mHealth devices are thus shown to be thoroughly imbricated in exercisers’ expressions of a physical self, to the extent that they are imbued with a moral ethic, as well as a social and regulatory code that is subject to constant negotiation and (re)interpretation.

Notwithstanding these corporeal experiences, the ‘objectivization’ inherent to self-tracking seeks to procure self-knowledge of one’s body through quantified data. Echoing our criticisms of Haraway, this is not to suggest that Foucault uncritically considers the role of

power and the subject, as made clear in his criticisms of humanism;⁴⁰ rather, what we seek to problematize is the ‘objectification’ inherent to Foucault’s disciplinary technologies that structurally encompasses and enacts *dispositifs* of power and knowledge for the subject, and which bears a theoretical resemblance to posthuman accounts.⁴¹ By determining the possible as well as limiting what can even be conceived of as possible, Foucault’s biopolitics prescribes a sociotechnic assemblage that underplays the opportunities to resist and redefine an objective assemblage of exercised power. Instead, any opportunity for resistance goes no further than that which is prescribed as pregiven by the assemblage.

Consequently, in examples of the digital health assemblage, ‘algorithmic calculations’ and notifiable ‘recommendations (“exercise more”, “test your blood glucose levels”, “eat less”, “visit your doctor”)) are viewed as objective and pure sources of knowledge of disease and the body’; an assemblage that underplays the very ‘human’ potential to critically resist, redefine and renegotiate such data prescriptions.⁴² This is iterated in those forms of scholarship, such as those outlined above, which identify how the body’s data can be tracked, assessed and reflected upon via the processes of datafication and digital self-surveillance.⁴³

Essentially, through the use of mHealth technologies, ‘the subject loses her individuality and becomes a mere cog in the machine’.⁴⁴ Indeed, this sense of ‘enslavement’ is depicted in Lupton’s examples of those using mHealth devices. Lupton notes how:

Several sociologists of science and technology have drawn attention to the lived realities of using digital technologies in the home as part of telecare arrangements. They have highlighted the emotional and physical dimensions patients experience of bringing the clinic into the home, of having to continually use technologies to check their blood glucose levels, heart function or body weight.⁴⁵

What remains significant to these assemblages is the sense of objectivization that now envelops the subject. This is not to suggest that posthuman accounts ignore the importance of power, but that it in their application of assemblage theorizing they bear the potential to over-emphasize the relations between the human and posthuman (assemblage). As evident in our critiques of Deleuze/Guattari, Latour, Haraway and Foucault, the issue remains as to how and in what ways our technological assemblages can be redefined and/or resisted when the very human capacity to do so is rendered mute.

In fact, we draw attention to how the posthuman assemblage bears a striking resemblance to ‘the idealised citizen of neoliberalism’.⁴⁶ As one object/actant amongst a variety of objects/actants, the subject’s digitalization in mHealth technologies serves to confirm a level of self-care that not only establishes the subject as a reliable, responsible and rational being, but also, in the very process of adopting the technology, openly submits oneself to the obligation of being so. As a result, ‘mHealth converges with neoliberal strategies of governance by promoting autonomous, enterprising individuals who are encouraged to capture data, share, analyse, and reflect on it in relation to data norms’.⁴⁷

The significance of this ‘rational’ self-objectivization is important, for it highlights how posthumanism’s critique of anthropocentrism relies upon a disavowed Cartesian rationalism.⁴⁸ That is, in ‘objectivizing’ the subject, or by reframing the subject in relation to the materiality of the body in a broader health assemblage, examples of posthumanism ‘reduc[e] the human to just another natural object whose properties can be manipulated’.⁴⁹ Theoretically, this process is echoed in those examples of assemblage theory which seek ‘to bypass the subject-object dualism’,⁵⁰ believed to inherently privilege the ‘subject’, for an understanding of the subject as objectively tied to a variety of other objects. What remains significant in the posthuman mHealth assemblage, however, is how ‘the subject directly positions itself as object’.⁵¹

Indeed, it is not simply the case that mHealth technologies work to ‘objectivize’ the subject, but that the process of ‘objectivization’ is tied to the subject’s inherent limitations. This can be seen in the extent to which posthuman accounts rely upon a paradoxical disavowal of the subject, which, at the same time, locate the subject as responsible for such disavowal. What examples of posthumanism ultimately reveal, therefore, is how any desire to decenter the ‘human’ immediately results in fulfilling the exact opposite: the reassertion of a ‘subjective gesture’ that qualifies this decentrement. We will return to this contradiction shortly; for now, it is important to assert that what posthuman theory disavows and what our turn to mHealth technologies prefigures, is a certain reassertion of the subject and its constitutive role in health assemblages.

To help expand upon our criticisms of posthumanism, we can turn to the unique role that mHealth technologies perform for the subject. Here, we consider that the adoption of mHealth technologies is not beholden to examples of discursive control, upon which the subject is simply objectivized through ever-greater forms of datafication; instead, what mHealth technologies reveal is a subjective maneuver that deliberately seeks to escape the subject’s status as a being of ‘lack’.⁵² In part, this contention is predicated on the fact that any desire to manage one’s self via the adoption of an mHealth technology device or application is itself an attempt to escape from the far more traumatic realization that there is no self to begin with.

For example, if we consider that technological devices have become ergonomically smaller and the digital network, which controls these devices, has become more and more invisible, then it is not a stretch for us to envision a number of digital devices – from mobiles, to household appliances – ‘becom[ing] so small that they will be invisible, everywhere and nowhere – so powerful that they will disappear from view’.⁵³ Žižek elaborates upon this possibility, in the following example:

Philips soon plans to offer on the market a phone and music player that will be interwoven into the texture of a jacket to such an extent that it will be possible not only to wear the jacket in an ordinary way (without worrying what will happen to the digital machinery) but even to launder it without damaging the electronic hardware. This disappearance from the field of our sensual (visual) experience is not as innocent as it may appear. ... The machinic prosthesis will be less an external apparatus with which we interact and more part of our direct self-experience as a living organism – thus decentering us from within.⁵⁴

We may still be waiting for our Phillips jacket, but the technology Žižek outlines bears a striking resemblance to the various mHealth devices that innocuously manage our health and wellbeing. What is more, in their capacity to inform and notify the user, there is a clear decentering that quantifiably posits a ‘self’ on-screen. It is this ‘uncertain supposition – of both the self and of self-analysis – that fuels the contemporary moment’.⁵⁵ Referring to the various mHealth devices that measure and track one’s physical activity, Gutierrez notes that:

Within the logic of self-tracking, the self is revealed to be an uncertain sup- position. There is certainly a belief in its existence, but this belief both fuels and is fueled by the repetitions of the self-tracking application; it is fueled by a belief that with the right level of precision we may ultimately capture ourselves on the screen. The desire here is both pragmatic, a question of fitness and well-being, and existential, a question of who we really are and what we can be.⁵⁶

Certainly, the above does not seek to ignore the fact that the variety of information and neat graphics presented via our mHealth technologies and associated applications aptly represents

a ‘self’, whose quantification leaves the subject open to further reflection and better understanding. This is only more important for those devices that track and measure chronic illnesses. What the above does suggest, however, is the sense of ‘self’ that such technologies and their users actively hope to create, but for whom the translated self merely maintains a certain falsity; indeed, one that is most clearly brought to light by the ‘spectral self’ that is averred and sustained via the repetitious desire to map and trace one’s physical self.

Accordingly, while posthumanism seeks to avail the decentering of the subject in health technology – a process, which, in the above example, translates the body amidst a complex techno-assemblage – such decentrement more accurately reflects a form of disavowal that is clearly rendered in a return of anxiety. That is, while:

People may gain a sense of being alive by expressing a Self and by being reassured that what they are saying is being understood by the other, ... they do not gain any sense of existence from it. They will suffer from this feeling of not existing.⁵⁷

To this end, though remaining open to the benefits provided by mHealth technology, we remain critical of its posthuman appropriation. In fact, we contest that our criticisms of posthumanism are brought to bear through the very adoption of mHealth technologies and the assemblages they form.

mHealth and the Empty Subject

To help outline this critique, we turn to Lacanian psychoanalysis, and, specifically, the work of Slavoj Žižek and the Ljubljana School.⁵⁸ Bringing together Lacanian accounts of the subject alongside Hegelian dialectics, this work considers the ‘dual meanings of “subject” (its noun

form means an active agent, but its verb form means to submit oneself) and “object” (its noun form means a passive thing, but its verb form means to create an obstacle)’, via a consideration of how the very ‘object’ of identification is itself posited by the ‘subject’ that constitutes this identification.⁵⁹ This complex structure can be given further explanation via Žižek’s reference to the Mobius strip: a topological structure that presents a loop with only one side and one boundary curve.⁶⁰ On observation, the Mobius strip is perceived to have two sides; its traversal, however, reveals that there is one continuous strip that gives the impression of an ‘inside’ and ‘outside’. Applied to subject/object distinctions, Žižek uses this structure to argue that “‘subject’ and ‘object’ are not two entities which interact at the same level, but one and the same X on the opposite sides of a Moebius strip’”.⁶¹ This lack of interaction does not seek to subsume the object under the vestiges of the subject, nor does it procure some form of transcendental alignment between subject and object, the obverse of which is depicted in the posthuman reduction of the subject as object; rather, in following the Mobius strip topology:

the subject is like an empty frame without an object, and it is correlative to an object without a frame, without its proper place. These two can never encounter each other within the same space, not because they are too far away but because they are one, the front side and obverse of the same thing.⁶²

It is on this basis that we can trace a form of decentrement that stands opposed to that presented by posthuman accounts. Indeed, for Lacan, one’s self-consciousness is troubled by the fact that the ‘decentered hard kernel’, that forever eludes the subject’s grasp, ‘is ultimately self-consciousness itself; ... self-consciousness is an external object out of ... reach’.⁶³ In the case of mHealth technologies, therefore, it is not that the subject is ‘subjectivized’ as a digital, quantified self, but that the subject is found in the very *gap* that is opened up by the

representation of its digitalized self.⁶⁴ It is this gap that marks one's sense of self: the subject is the gap – that unfathomable X – in reality.⁶⁵ This account of the subject does not seek to reconcile subjectivity and objectivity, nor does it present any clear-cut delineation between the two; instead, the relationship between subject and object is inverted via a failed process of subjectivization that, on the one hand, poses an object that resists subjectivization; and, on the other, posits the very paradox that presupposes the subject as correlative to the object that cannot be subjectivized.

These inconsistencies are laid bare in a recent report, compiled by the Health Research Institute, which highlights two curious tendencies relating to the mHealth experience. Increasingly, users are said to want software that is inter-integrated, diverse, and socially networked.⁶⁶ Those pursuing a healthy lifestyle want to post their daily health habits and encourage their followers to do the same, via inspirational messages and visual performances. Here, a confluence of high consumerism with digital living brings new complexities and temporalities to expressions of identity formation, to such an extent that mHealth forms part of wider a cultural project of individualization. Concomitantly, however, the respondents also shared grave concerns about the invasion of privacy, and their unwillingness to share more 'sensitive' information. What comes to light in this contradiction is the failure of subjectivization through the consumers' performances of self, as evident in the fear that the performed 'somebody' will be exposed as little more than a bundle of data. Importantly, as per our argument in this essay, this emphasizes the lack at the center of the subject, whilst also foregrounding those cultural mechanisms and performative supplements that help us to attend to this lack.

In contrast, by eliding the objective and subjective, examples of posthumanism locate the 'human' in a posthuman assemblage that inherently dissolves any subjective privilege, a theoretical diversion, which, at its heart, grossly ignores the very radicality of the subject.

Though such ‘openness’ maintains a certain sensibility – if only on the grounds that posthuman accounts can help to navigate and rightly negate any internal-external dichotomy between the subject and the world – the issue remains as to how we ascertain this posthuman state of being, ‘beyond the human’, within the mHealth assemblage. Again, to recite Žižek’s topological example:

we should rather explore how, if we go deep into ‘inside’ our Self, behind the phenomenal self-experience of our thought, we again find ourselves in the (immanent) outside of neuronal processes: our singular Self dissolves in a pandemonium of processes whose status is less and less ‘psychic’ in the usual sense of the term. The paradox is thus that I only ‘am’ a Self at a distance not only from outside reality but only from my innermost inside: my inside remains inside only insofar as I do not get too close to it.⁶⁷

Indeed, imagine observing oneself from a posthuman perspective, in the form of a petri dish, containing one’s genome, or in viewing one’s ‘brain in a vat’, and ask: ‘if I can see myself in the brain in a vat, or my genome in a Petri dish, the radical question is: who is the real ‘I’?’.⁶⁸ Such questions are not beholden to mere theoretical reflection but are brought to bear in the advertence of the subject in mHealth technologies, whether in the form of the quantified self, made visible in notifications and biometrical information, or through the monitoring of one’s heart rate or blood glucose levels.

Moreover, such questions should not be ignored. Here, the reduction of the human to its genetic code or biometrical data ‘forces’ the subject ‘to traverse the phantasmal stuff of which [... the] ego is made, and only in this way can ... subjectivity properly emerge’.⁶⁹ This emergence is formally denoted via the subject’s ‘empty point of self-relating’.⁷⁰ Indeed:

This emptiness is constitutive of the subject, it comes first, it is not the result of a process of abstraction or alienation: the barred/empty subject is not abstracted from the ‘concrete’ individual or person fully embedded in its life-world, this abstraction/withdrawal from all substantial content constitutes it. The ‘fullness of a person,’ its ‘inner wealth,’ is what Lacan calls the fantasmatic ‘stuff of the I,’ imaginary formations which fill in the void that ‘is’ subject.⁷¹

Such ‘emptiness’ underscores our relationship with digital technologies. Indeed, ‘By giving us the opportunity of being known, technologies make us believe that we are not nobodies, and thus they screen off the anxiety of having a weak sense of self’.⁷² This screening, however, remains tenuous, with the avoidance of the screen continually managed by mHealth’s notifications and biometrical data updates. But the significance of these technologies goes further. In accordance with the above discussion on the subject, we can begin to see that while the ‘gap’ which constitutes the subject is always-already presupposed, such presupposition is itself grounded in an experience of loss. Here, McGowan notes how, ‘It is the loss of a part of the subject – an initial act of sacrifice – that creates both subject and object, the object emerging through this act as what the subject has lost of itself’.⁷³ This sense of loss is revealed in the cited fears that technology can generate. Often the fear is not that technology will make humans obsolete, but that the human’s use of technology, and their growing attachment to various mobile and mHealth devices, compensates for a former ‘pure, unsullied and natural biological humanity in relation to which one can measure a time of the “post”’.⁷⁴

What further underscores the significance of mHealth technologies, however, is ‘their ability to mimic the [subject’s lack ...] so convincingly and smoothly’.⁷⁵ Namely:

What is especially disconcerting about these gadgets is the conviction that they may succeed where previous technologies failed, notably because, rather than simply providing us with yet another set of questionable substitutes, they purport to suture the impotence or lack much more directly, with the help of interactive, electronic, wearable, or implantable devices that are closing in on us, coming suspiciously close. They seem to mimic the irretrievably lost object far too smoothly, and this invokes an experience of uneasiness.⁷⁶

To this end, we can begin to locate the adoption of mHealth technologies as a possible substitute which seeks to suture the subject's lack.⁷⁷ Moreover, posthumanism provides this function, by obscuring this sense of uneasiness, via a digital (posthuman) assemblage predicated on 'a seemingly amorphous, formless, borderless plane, "plenum" or "sphere" in which all that exists is explained in endlessly recursive networks, relations or events of entangled complexity'.⁷⁸ However, rather than eliding this sense of uneasiness, it is, on the contrary, this uneasiness that avers the emergence of the subject – its 'enduring status as refuse'.⁷⁹ There is, therefore, no neutral, *posthuman* position that is possible. In Lacanian terms, posthumanism's attempts to 'lose' the human, to portray it as a mere semblant, is to ignore the fact that the human has always been a semblant; or, in other words, a self-divided, self-relating negativity, presupposing an empty formal subject.

This contention prevents an over-zealous laudation of the potentials inscribed within our technological assemblages. It also steers clear of privileging the human as an ordained being, levelled with the advantage of asserting an entitled anthropocentrism. Instead, what the empty subject figures is a form of subjective destitution that allows us to embrace the subject as related to, but also forged by, the futility, contradictions, and antagonisms that our technological assemblages aver, and which is readily attributable to our mHealth practices.

This is evident in the dissonance and sense of unease that our mHealth technologies can prescribe and which, paradoxically, confers the potential to both treat but also inhibit our capacity for better health. What we never lose in this conception, however, is the central role that the subject plays in eliciting but also negotiating this dissonance. In so doing, we sidestep the potential of ‘losing’ the subject (either implicitly or explicitly) as well as ‘over-objectivizing’ its existence through biometrical data, as highlighted in the above critiques. While undoubtedly acknowledging that all mHealth technologies work to objectize the subject in some form or another, it is at this point of numerical transcription – this semblance of a lack contingently deferred – that the subject confronts their very lack through a relationality that is afforded both in and with the mHealth technology. In what follows, we consider this lack in a final precis on the assemblage’s ‘inhuman’ significance.

Reassembling mHealth: From 'Posthuman' to 'Inhuman'

In light of the above criticisms, there is, throughout Žižek’s discussion on assemblage theory, an impetus to reinject a certain ‘radical discord’ in assemblage accounts. Here, Žižek draws attention to the ‘immanent impossibility’, the ‘central antagonism’, and, thus, the implied subjectivity that such ‘impossibility’ and ‘antagonism’ aver.⁸⁰ It is this implied subjectivity which remains lost in posthuman accounts that uncritically steer towards an endless assembled complexity grounded in unending correspondence. To this extent, while the above sections have highlighted the role of mHealth technologies in what can be defined as the digital health assemblage, it is in light of these technologies that this obfuscation of the subject is, at first, brought to bear in the subject’s digital redoubling. The path being traced here is one that seeks to transpose the subject’s decentrement – its ‘empty’ presence – through a decentering of the

digital health assemblages that serve to obscure this formal gesture. This is not a gesture that requires implementation, but, rather, occurs already within the subject's digital inscription.

For example, though the subject is constituted in lack, mHealth technologies, such as self-tracking applications, obscure this lack with a self that is at the same time 'subject and object, satellite and body, experience and data'.⁸¹ . As a result:

The affective force here, between the self as writer and the imagined and inscribed self as object, is transformed into an automated relationship that only furthers an appearance of objectification and, thus, operates as the anxious push that moves the self away from the subject in order to gain the *critical distance* necessary to pass judgment.⁸²

What becomes apparent in the digitalization of the subject, therefore, is that the perpetuation of a self, separate to subject, follows a form of decentrement that is disavowed under the prevalence of an objectified 'appearance', itself a component part of the digital health assemblage. Yet, rather than obscuring the subject's inscription, mHealth technologies present an opportune moment for the decentered subject to decenter the health technology assemblage; indeed, to draw attention to the 'critical distance' that is implied in the assemblage itself. That is, while the use of mHealth devices 'reveals an attempt to distance the self from the self, to transform the subject into an object, and to discipline, and aestheticize, our own selves', such attempts and transformations present an opportunity to acknowledge the inherent subjective gap which constitutes the objectified, quantified self.⁸³ To this end, mHealth technologies do not elide the subject, but, rather, expose the subject's 'radical imbalance' – its constitutive lack/gap. This 'imbalance' underscores the desire to decenter the assemblage; a process that acknowledges the assemblage's internal limitations as opposed to the various ways in which posthuman theory seeks to offer a form of inquiry that relies upon the 'pure apperception' of

the human and its environment. These latter inquiries – directed from a transcendental position (a position from which all observation can be made) – ignore the very position from which such observation is made.

Therefore, if we reconsider the translation of the quantified subject as an objectified form, one that seeks to both escape, but also define the subject's inherent lack, then one possible solution is to recognize this object as an alienating force, not external to the subject, but as an *inherent presence in its constitution*. While Žižek refers to this process as 'recognizing myself in my Otherness',⁸⁴ Zupančič offers the following remarks:

Precisely by arguing for a specific concept of the subject, which starts from shifting the ground of the discussion from the question of affirming or denying the existence of reality independent of the subject, to a different kind of perspective which affirms, and combines, the following two propositions: (1) there is indeed a reality that exists independently of the subject (that is independent of subjective mediation or constitution); (2) the subject (the structure of subjectivity in the strong sense of the term, in its very excessiveness) is precisely that which gives us access to reality independent of the subject.⁸⁵

This combined process traces an approach to assemblage theory (and posthumanism) that inherently antagonizes the assemblage via the very subjective mediation that it affords. What is more, this approach is *touched upon* in 'posthuman' accounts. For example, Haraway asserts a position that pays dividend to the false digression that underscores 'technophobia or technophilia', whilst Lupton insinuates that now, more than ever, digital technologies such as mHealth make it possible to peer inside the body, to monitor its functions and to make users constantly aware of its various 'failures' and 'successes'.⁸⁶

What remains implicit in Lupton's account, however, is the sense of 'critical distance' that is required in order to recognize the ways in which such assemblages may be 'coerced' and its participants 'stigmatised or disenfranchised'.⁸⁷ Again, what we see in such 'distance' is the very *subjective gesture* that both qualifies and announces the critical subject's *distance to* the assemblage. It is this *distance*, however, that disavows the very subjective gesture – the inherent 'gap' – that constitutes one's critical observation. Yes, the subject, following Haraway, may be self-divided, but it is a self-division echoed *in* the assemblage's decentering.

Therefore, in order to acknowledge this self-division; indeed, in order to obtain a certain perspective of our digital health assemblages that neither reduces the subject to just another object or subsumes it in a position of transcendental observance, requires, at a minimal level, an 'inhuman view'. This turn to the 'inhuman' is not one that professes a position of crass brutality, but, rather, points to an inhuman perspective in the assemblage itself, so that 'even the most "asubjective" description of a state of things from an inhuman view in which humans are only one of the actants *implies a subject*'.⁸⁸ Moreover, it is this questioning which bears an ethical injunction; namely, that 'It is only the shattering experience of the (ethical) impossibility of such an "inhuman view" that gives rise to a proper ethical stance'.⁸⁹ It is on this basis that our understanding of assemblage theory, and, specifically, our understanding of the digital health assemblage, presents a 'truly subversive potential'.⁹⁰ This potential is brought to the bear in the very subjective gesture found in the redoubling of the self via mHealth technologies. It is to ask: What is a more inhuman position than the capacity to digitally render the subject's biological interiority other than that occupied by technological devices which externally display the internal metrics of this biology? The (paradoxical) answer is itself strictly correlated to the fact that 'subjectivity is ... its own performance, something that appears to itself while its "material base" is just a neuronal-biological apparatus'.⁹¹

Final Remarks

Over the course of this essay, we have sought to critically appraise the posthuman approach to mHealth technologies and their location and purpose in a wider digital health assemblage. While we remain open to the relative benefits afforded by assemblage theory, we diverge on the adoption of a posthuman perspective, and, through the act of drawing upon psychoanalytic conceptions of the subject, have sought to reassert the subject in relation to debates on mHealth technology. Here, our criticisms of posthumanism remain grounded in two fundamental assertions.

First, we contest the imperative that a posthuman perspective can provide an analytical significance that inherently dislodges the significance of the human. Instead, ‘there is no “balanced” objective order whose perception is distorted when it is viewed from a subjective standpoint – *subjective distortions are inscribed into the very “objective” order as its immanent distortion*’.⁹² Second, one cannot therefore propose a posthuman blurring of the distinctions between subject and object, human and non-human, if only because these distinctions are grounded in an immanent antagonism that inverts their relation. Rather, this antagonism is itself a marker of the very ‘gap of subjectivity’.⁹³ Together, we align these two criticisms in accordance with the anxieties that underscore the adoption of mHealth technologies.

To be clear, we do not denounce the adoption of mHealth devices under a misguided form of technophobia; rather, we seek to locate them in an understanding of the subject and its capacity to be observed, monitored and located within the inherent antagonisms, contradictions and inconsistencies that underscore our digital health assemblages – *forms of contention that inherently affirm the importance of the subject*. In doing so, we draw attention to the very contradictions that are laid bare in the subject’s digitalization through mHealth technologies

that render a quantified self, beholden to the aesthetics of biometrical representation. While never forgetting the topological structure of the Mobius strip, we contest that, in the case of assemblage theory, the ‘subject is the self-appearing of nothing’;⁹⁴ a negative self-relating that is itself conferred in the subject’s (dis)appearance amongst an assembled collective, which fundamentally decenters the subject as *the* observer to this assemblage. Therefore, in contrast to posthumanists, who infer ‘the end of the human subject’, we contest that the apparent end of the subject in posthuman theory *is the precondition for its appearance*.

In meeting this precondition, we propose a turn from the posthuman to the inhuman as a way of understanding the contemporary landscape of health, in terms of how it is felt, represented, experienced and imagined. Specifically, what stands out in our engagement with mHealth is how ‘biopolitical precarity’ does not profess some posthuman perspective, outside of the human, but, instead, emphatically reveals the subjective gesture at its heart – the very sense of ‘precarity’ that is subjectively rendered through bringing the ‘outside’ ‘inside’. Thus, it is in the very use of mHealth technologies that the ‘inhuman core of subjectivity’ is brought to light.⁹⁵ Such a move is not simply of theoretical significance, but demands a whole new way of living within health assemblages which recognizes their ethical imperative. Indeed, it is only once we have recognised the impossibility of the inhuman view that we are able to take responsibility for an assemblage's constitution.

Accordingly, we conclude that in posthuman analyses, applications of the digital health assemblage work to objectivize the subject by silently maintaining implicit forms of digital health monitoring that work to disavow the centrality of the subject. While we nonetheless remain committed to these very assemblages and their technologies, we divert from any form of technophobia by giving specific attention to the ways in which our digital health assemblages elicit an inhuman significance. Certainly, this inhuman view does not resort to well-known exclusions and pejorative differences – both of which are critiqued by posthuman

accounts. Indeed, our humanism is not one that simply reproduces a white, male privilege, but instead, deliberately politicizes the human via the very technological transformations that elicit our relations to both technology and each other.

As a result, it is in accordance with mHealth technologies that our capacity to ‘read’ the human is implicit in a process of decentering that lays bare the inherent contradictions of the subject. Conceived in this essay as a self-divided, empty subject, it is contested that to identify these contradictions requires an ‘inhuman view’ that posits the subject’s location within a digital health assemblage, while, at the same time, endowing the capacity to question and critique the subject’s location within this very assemblage. The ethical significance of this inhuman view rests on its acceptance of the subject’s constitutive alienation. Much like the impersonal signifier that serves as a force of castration for the subject, it is our technological relations that avow a machinic quality to the human psyche, from which our digital imbrication posits a ‘subject’ whose very (mis)recognition is grounded in their own objectification (their own inhuman ‘digital’ Otherness; or the ‘I’ as Other). Thus, if every subject is predicated on its own self-division, then it is in the use of our mHealth technologies that this division is biometrically rendered through an ‘inhuman’ digital framework (i.e., the subject’s health and wellbeing matrix). While remaining critical of the loss of the human/subject in posthuman accounts of technology, which ultimately promote the subject’s digital objectification, it is this digital objectification that, paradoxically, lays bare the fact that any subject is more than its digital semblance. The crucial point here is not to separate the subject from their digital mHealth representation and vice versa, but to conceive the relation between subject and technology as inhumanly decentered.

In so doing, the ethical potential of the inhuman is emphasized in the subject’s inherent relationality, not just to the digital health assemblage and the other subjects it comprises, but also to the implication that the subject can only acknowledge this process by recognizing the

radical imbalance – the lack – inherent to both the subject and society. Following Ruti: ‘if subjectivity is inherently relational, [then] there is no way to envision it outside of ethics’;⁹⁶ and, thus, correspondingly, if the digital assemblage is inherently relational, then there is no way of envisioning it outside of an inhuman perspective that renders this assemblage and its subject readable.

In keeping with other literature on technology and the political ecologies of health this paper therefore posits that it is through an inhuman perspective that the ethical importance of our mHealth technologies can help to (re)imagine the contemporary (digital) subject, whilst warning us of its role in the continued reinforcement of neoliberal, biomedical and individualized discourses. As a point of departure, however, we proffer that it is only by recognizing the role of the subject that we can position users as undergoing a certain orientation to both themselves and the wider health assemblages, that may help them to realise the capacities of such platforms, whilst mitigating against the potential to ‘fully’ concede to the embodied encroachment of internalized technologies.

Endnotes

¹ Ornella highlights that ‘The varieties of spelling the term “posthuman” suggest that there is no common denominator on how exactly the posthuman being might look like and what his/her relation to today’s human beings might be: post-Human, post-human, posthuman, post/human’ (Alexander Ornella, “Posthuman Pleasures: Transcending the Human-Machine Boundary,” *Theology & Sexuality* 15, no. 3 (2009): 314). Outside of quotations, this essay will adopt ‘posthuman’.

² Suzanne Dow and Colin Wright, “Introduction: Towards a Psychoanalytic Reading of the Posthuman,” *Paragraph* 33, no. 3 (2010): 301.

³ As noted, in naming these authors, we stress a theoretical affiliation between their ideas and that of critical posthumanism. While Soper notes that authors, such as Haraway, have rejected the ‘posthuman’ label, she identifies the following key themes, which are shared across these authors’ work: ‘the merging of nature and culture; the decentring of the humanist subject; the view that human– animal dualism obstructs ethical guidance on the treatment of non-human animals; a resistance to accepting human exceptionality.’ (Kate Soper, *Post-Growth Living: For an Alternative Hedonism* [London, UK: Verso, 2020]: 22). Furthermore, Flisfeder divides ‘posthuman’ thinkers along the lines of ‘post-HUMAN-ism’, which considers the loss of the ‘human’ through technological means, and ‘post-HUMANISM’, which seeks to critique humanist philosophies (Matthew Flisfeder, “Are We Human? Or, Posthumanism and the Subject of Modernity,” in *Understanding Žizek, Understanding Modernism*, eds. Zahi Zalloua and Jeffrey Di Leo (New York, NY: Bloomsbury, forthcoming).

⁴ Slavoj Žižek, *Hegel in a Wired Brain* (London, UK: Bloomsbury, 2020).

⁵ Filippo Menga and Dominic Davies, “Apocalypse yesterday: Posthumanism and comics in the Anthropocene,” *EPE: Nature and Space* 3, no. 3 (2020): 665.

⁶ See Donna J. Haraway, *The Companion Species Manifesto* (Chicago, IL: Prickly Paradigm Press, 2003); Donna J. Haraway, “A cyborg manifesto: Science, technology, and socialist-feminism in the late 20th century,” in *The International Handbook of Virtual Learning Environments*, eds. Joel Weiss, Jason Nolan, Jeremy Hussinger and Peter Trifonas (Dordrecht, NL: Springer); Rosi Braidotti, “Posthuman, all too human: Towards a new process ontology,” *Theory, Culture & Society* 23, no. 7-8 (2006): 197–208.

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- ⁷ Gavin J. Andrews and Cameron Duff, "Matter beginning to matter: On posthumanist understandings of the vital emergence of health," *Social Science & Medicine*, 226 (2019): 125.
- ⁸ Simon Cohn and Rebecca Lynch, "Posthuman perspectives: relevance for a global public health," *Critical Public Health* 27, no. 3 (2017): 285-292.
- ⁹ Deborah Lupton, "Donna Haraway: The Digital Cyborg Assemblage and the New Digital Health Technologies," in *The Palgrave Handbook of Social Theory in Health, Illness and Medicine*, ed., Fran Collyer (New York, NY: Palgrave Macmillan, 2015), 578.
- ¹⁰ Véronique Voruz, "Psychoanalysis at the Time of the Posthuman: Insisting on the Outside-Sense," *Paragraph* 33, no. 3 (2010): 428.
- ¹¹ Slavoj Žižek, *Sex and the Failed Absolute* (London, UK: Bloomsbury, 2019).
- ¹² Author's citation.
- ¹³ Gavin J. Andrews, "Health geographies II: The posthuman turn," *Progress in Human Geography* 43, no. 6 (2019): 1109.
- ¹⁴ Andrews and Duff, "Matter beginning to matter," 124.
- ¹⁵ Deborah Lupton, "The thing-power of the human-app health assemblage: thinking with vital materialism," *Social Theory & Health* 17 (2019): 125-139.
- ¹⁶ Lupton, "The thing-power," 130.
- ¹⁷ Gilles Deleuze and Felix Guattari, *A Thousand Plateaus* (London, UK: Continuum, 2004).
- ¹⁸ Nur Kurtoğlu-Hooton, *Language, Identity Online and Running* (Cham, CH: Palgrave Macmillan, 2021).
- ¹⁹ Pirkko Markula, *Deleuze and the Physically Active Body* (London, UK: Routledge, 2020): 430.
- ²⁰ Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network Theory* (Cambridge, UK: Cambridge University Press, 2005).

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- ²¹ Kim McLeod, "The missing work of collaboration: Using assemblages to rethink antidepressant action," *Contemporary Drug Problems* 41, no. 1 (2014): 109-142.
- ²² Andrews and Duff, "Matter beginning to matter."
- ²³ Deborah Lupton, "M-health and health promotion: The digital cyborg and surveillance society," *Social Theory & Health* 10 (2012): 229-244.
- ²⁴ "mHealth: New horizons for health through mobile technologies: Based on the findings of the second global survey on eHealth (Global Observatory for eHealth Series, Volume 3)," World Health Organization, accessed March 11, 2011, <https://apps.who.int/iris/handle/10665/44607>
- ²⁵ Lupton, "Donna Haraway," 568.
- ²⁶ Deborah Lupton, "Beyond techno-utopia: Critical approaches to digital health technologies," *Societies* 4, no. 4 (2014): 706–711.
- ²⁷ Lupton, "Beyond techno-utopia."
- ²⁸ "Mobile Health (mHealth) Market to Reach USD 311.98 Billion by 2027," Globe Newswire, accessed March 11, 2021, <https://www.globenewswire.com/news-release/2020/04/28/2023512/0/en/Mobile-Health-mHealth-Market-To-Reach-USD-311-98-Billion-By-2027-Reports-and-Data.html>
- ²⁹ Katrina Karkazis and Jennifer R. Fishman, "Tracking U.S. Professional Athletes: The Ethics of Biometric Technologies," *The American Journal of Bioethics* 17, no. 1 (2017): 45-60.
- ³⁰ Hub Zwart, "'Extimate' Technologies and Techno-Cultural Discontent: A Lacanian Analysis of Pervasive Gadgets," *Techné: Research in Philosophy and Technology* 21, no. 1 (2017): 27.
- ³¹ Nick J. Fox, "Health sociology from post-structuralism to the new materialisms," *Health* 20, no. 1 (2016): 62–74.

³² Lupton, “Donna Haraway,” 575.

³³ Nusselder highlights that any technological imaging ‘is not completely “objective,” because the digitized real world does not possess in itself a structure or form according to which it should appear. For what is the true form of a data object?’ (Andre Nusselder, *Interface Fantasy* (Cambridge, Mass: The MIT Press, 2009), 16).

³⁴ Mads Peter Karlsen and Kaspar Villadsen, “Health Promotion, Governmentality and the Challenges of Theorizing Pleasure and Desire,” *Body & Society* 22, no. 3 (2016): 17.

³⁵ Zwart, “‘Extimate’ Technologies,” 41.

³⁶ Donna Haraway, *Simians, Cyborgs and Women: The Reinvention of Nature* (London, UK: Routledge, 1991).

³⁷ Michel Foucault, *The History of Sexuality, Volume I: The Will to Knowledge* (London, UK: Penguin, 2020).

³⁸ Ben Williamson, “Algorithmic skin: Health-tracking technologies, personal analytics and the biopedagogies of digitized health and physical education,” *Sport, Education and Society* 20, no. 1 (2015): 133-151.

³⁹ Holly Thorpe, Julie Brice and Marianne Clark, *Feminist New Materialisms, Sport and Fitness* (Cham, CH: Palgrave Macmillan, 2020).

⁴⁰ In drawing this link, it should be noted that Foucault never referred to himself as a ‘posthuman’ theorist. Michel Foucault, *Discipline and Punish* (New York, NY: Pantheon Books, 1977).

⁴¹ Michel Foucault, *Power/Knowledge: Selected Interviews and Other Writings*, ed. Colin Gordon (New York, NY: Random House, 1980); Rosi Braidotti, *The Posthuman* (Cambridge, UK: Polity, 2013).

⁴² Lupton, “Donna Haraway,” 574.

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- ⁴³ Minna Ruckenstein, "Visualized and interacted life: Personal analytics and engagements with data doubles," *Societies* 4, no. 1 (2014): 68-84.
- ⁴⁴ Matthew Flisfeder, "The Ideological Algorithmic Apparatus: Subjection Before Enslavement," *Theory & Event* 21, no. 2 (2018): 463.
- ⁴⁵ Lupton, "Donna Haraway," 576.
- ⁴⁶ Lupton, "Donna Haraway," 575.
- ⁴⁷ Emma Rich and Andy Miah, "Mobile, wearable and ingestible health technologies: towards a critical research agenda," *Health Sociology Review* 26, no. 1 (2017): 87.
- ⁴⁸ Jerry Aline Flieger, "Is there a Doctor in the House? Psychoanalysis and the Discourse of the Posthuman," *Paragraph* 33, no. 3 (2010): 354-375.
- ⁴⁹ Slavoj Žižek, "Where is the Rift? Marx, Lacan, Capitalism, and Ecology," *The Philosophical Salon*, January 20, 2020b, <https://thephilosophicalsalon.com/where-is-the-rift-marx-lacan-capitalism-and-ecology/>
- ⁵⁰ Flisfeder, "The Ideological Algorithmic Apparatus," 466.
- ⁵¹ Robert T. Kilroy, "The Return Of The Master: Re-actualizing Žižek To Lacan's Iconological Core," *Lacunae* 3, no. 2 (2014): 55.
- ⁵² Todd McGowan, *Enjoying What We Don't Have* (Lincoln, Neb: University of Nebraska Press, 2013).
- ⁵³ Slavoj Žižek, *Organs without Bodies* (London, UK: Routledge, 2004), 16.
- ⁵⁴ Žižek, *Organs without Bodies*, 16.
- ⁵⁵ Christopher Gutierrez, "The Other Self in Free Fall: Anxiety and Automated Tracking Applications," *CM: Communication and Media* 11, no. 38 (2016): 127.
- ⁵⁶ Gutierrez, "The Other Self in Free Fall," 127.
- ⁵⁷ Stuart Schneiderman, *Jacques Lacan: The Death of an Intellectual Hero* (Cambridge, Mass: Harvard University Press, 1983), 121.

⁵⁸ The Ljubljana School (based in Slovenia) refers to a collection of academics, mainly, Slavoj Žižek, Rastko Močnik, Mladen Dolar, Alenka Zupančič, Miran Božovič and Eva Bahovec, whose work draws primarily from Lacanian psychoanalysis. See Russell Sbriglia and Slavoj Žižek, “Introduction: Subject Matters,” in *Subject Lessons: Hegel, Lacan and the Future of Materialism*, eds. Russell Sbriglia and Slavoj Žižek (Evanston, Ill: Northwestern University Press, 2020b).

⁵⁹ Broderick Chow, “The Tickling Object: On Žižek and Comedy,” in *Žižek and Performance*, eds. Broderick Chow and Alex Mangold (Basingstoke, UK: Palgrave Macmillan, 2014), 228.

⁶⁰ Žižek, *Sex and the Failed Absolute*. Lacan examines the relationship between the subject and the adoption of technological gadgets in Seminar X. In this work, Lacan refers explicitly to the Mobius Strip (Jacques Lacan, *Anxiety: The Seminars of Jacques Lacan, Book X, edited by Jacques-Alain Miller* (Cambridge, UK: Polity, 2016).

⁶¹ Slavoj Žižek, *The Parallax View* (Cambridge, Mass: The MIT Press, 2006), 213.

⁶² Slavoj Žižek, *Absolute Recoil* (London, UK: Verso, 2015), 79. The ‘obverse’ that is described here is given further consideration by McGowan when he elaborates upon the subject’s self-division with regards to language. Here, ‘Language introduces a distance in the interior of the subject, and this division leaves the subject incapable of self-transparency. No speaking being can achieve self-transparency because when it speaks, it never knows fully what it’s saying and always says more than it means to say’ (Todd McGowan, *Psychoanalytic Film Theory and The Rules of the Game* (London, UK: Bloomsbury, 2015), 42.

⁶³ Slavoj Žižek, *Tarrying with the Negative* (Durham, NC: Duke University Press, 1998), 66-67, italics removed.

⁶⁴ Žižek (2017) highlights how the “subject” can occur only when there is a radical rip in the texture of reality, when reality is not a “flat” collection of objects but implies a radical crack – ultimately, *the subject itself is the rip in reality, what tears its seamless texture apart*’ (p. 43). Though worded slightly differently, it is this ‘rip’ in reality which holds the ‘gap’.

⁶⁵ Those familiar with Lacanian psychoanalysis will be able to draw connections between the argument traced here and Lacan’s *objet petit a*. Following the contention that there is no pure self-identity, it is the subject’s noncoincidence which remains indebted to desire. Desire is perpetually unobtained and it is the *objet a* which maintains and frames this desire: the *objet a* is the objective correlate that sustains the subject. For reasons of space, we will not elaborate a discussion of the *objet a* in this essay. Instead, we recommend Authors and Sbriglia & Žižek for further reflection on this term. See Author citation; Russell Sbriglia and Slavoj Žižek, *Subject Lessons: Hegel, Lacan and the Future of Materialism* (Evanston, Ill: Northwestern University Press, 2020).

⁶⁶ “Health Wearable: Early Days,” Health Research Institute, accessed November 22, 2021, <https://www.pwc.com/us/en/health-industries/top-health-industry-issues/assets/pwc-hri-wearable-devices.pdf>

⁶⁷ Žižek, *Sex and the Failed Absolute*, 259.

⁶⁸ Jan Gresil S. Kahambing, “Without Sex: An Appraisal of Žižek’s Posthumanism,” *International Journal of Žižek Studies* 12, no. 2 (2018): 7.

⁶⁹ Slavoj Žižek, “Bring me my Phillips Mental Jacket,” *London Review of Books*, May 22, 2003, <https://www.lrb.co.uk/the-paper/v25/n10/slavoj-Žižek/bring-me-my-philips-mental-jacket>

⁷⁰ Žižek, *The Parallax View*, 246.

⁷¹ Žižek, *Sex and the Failed Absolute*, 451-452.

⁷² Nusselder, *Interface Fantasy*, 127.

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- ⁷³ McGowan, *Enjoying What We Don't Have*, 26. It is in accordance with this loss that the subject lacks, and 'it is because we lack that we are prompted to create, [... so that] it is through our creative activity that we manage, in an always necessarily precarious manner, to withstand our lack' (Mari Ruti, "The Fall of Fantasies: A Lacanian Reading of Lack," *Journal of the American Psychoanalytic Association* 56, no. 2 (2008): 491).
- ⁷⁴ Dow and Wright, "Introduction," 308.
- ⁷⁵ Zwart, "'Extimate' Technologies," 44.
- ⁷⁶ Zwart, "'Extimate' Technologies," 45.
- ⁷⁷ Flisfeder highlights how it is the digital algorithm which 'reproduce[s] the lack constitutive of subjectivity' (Flisfeder, "The Ideological Algorithmic Apparatus," 476).
- ⁷⁸ Andrews and Duff, "Matter beginning to matter," 129.
- ⁷⁹ Voruz, "Psychoanalysis at the Time of the Posthuman," 425.
- ⁸⁰ Žižek, *Sex and the Failed Absolute*.
- ⁸¹ Gutierrez, "The Other Self in Free Fall," 130.
- ⁸² Gutierrez, "The Other Self in Free Fall," 131.
- ⁸³ Gutierrez, "The Other Self in Free Fall," 113.
- ⁸⁴ Žižek, *Sex and the Failed Absolute*, 396.
- ⁸⁵ Alenka Zupančič, *What is Sex?* (Cambridge, Mass: The MIT Press, 2018), 121.
- ⁸⁶ Lupton, "Donna Haraway," 578.
- ⁸⁷ Lupton, "Donna Haraway," 578.
- ⁸⁸ Žižek, *Sex and the Failed Absolute*, 383, italics added.
- ⁸⁹ Žižek, *Sex and the Failed Absolute*, 362.
- ⁹⁰ Žižek, *Sex and the Failed Absolute*, 361.
- ⁹¹ Žižek, *Sex and the Failed Absolute*, 362.
- ⁹² Žižek, *Sex and the Failed Absolute*, 382, italics added.

⁹³ Žižek, *Sex and the Failed Absolute*, 382.

⁹⁴ Slavoj Žižek, *Disparities* (London, UK: Bloomsbury, 2016), 43.

⁹⁵ Dow and Wright, “Introduction,” 307.

⁹⁶ Mari Ruti, “The Posthumanist Quest for the Universal,” *Angelaki: Journal of the Theoretical Humanities* 20, no. 4 (2015): 193