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The Senseless Machine

Towards a Crip Reading of (No-touch) Hands and Human Value from Eugenics to Biometrics

Abstract
Combining crip theory and existential media studies, the purpose of this theoretical essay is to critically interrogate a biometric palm-reading device that turns the hand into a means for payment – connecting its datafied veins to one's assets – by unpacking its specific "technologics" and probing its forceful yet ambivalent sociotechnical imaginary. Palm recognition technology relies on the annulment of touch which calls forth, and depends on, what we call the existential–phenomenological chasm. The argument is that as hands are reduced to touch-free functionalist components, the realities of the embodied existential self are made invisible, and so is a fuller perceptual field of being human in diversity and disability. The chasm thus reinforces the ableism of the normate, instrumental hand, while also invoking dark genealogies of measuring bodies in culture. We caution that if biometrics were to be turned into a primary signifier of human identity and value ascription, this would reactivate eugenic hauntings with consequences for "human value". This fact calls for "cripping" the senseless machine, subjecting it to the crucial work of crip technoscience.

Keywords: biometrics, AI imaginaries, apocalypticism, existential media studies, crip theory

REIMAGINE YOUR HAND as a touch-free technology that identifies "you", and then instantly connects you to your bank account. No more chagrin in case of forgetting your wallet or smart phone with its payment apps. It is always there with you: the palm of your hand. A machine translates its textures and veins into data implied in its workings. Placed centrally, yet without any touching, your hand then hovers above the palm reading device that scans it. Smoothly operating, your hand does not lie. It efficiently nails "you", and provides access to your assets.

Amazon One is a palm-reading device that functions as a credit card. It is a form of biometric artificial intelligence (AI) that seeks to secure and verify the identity of the user, and more specifically, the person in possession of the claimed holdings. Biometrics is technology built to identify people, and to verify and ascertain their individual identities, by recognising faces, voices, hands, eye retinas, irises, body odours and gait (Mordini & Massari 2008). Since it relies on the metrics of the datafied body, it is thus a technology to literally measure life. Biometrics is presumed to be more accurate and reliable than other systems for securing and authenticating identity. In

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post-pandemic times, it can also be perceived as a much welcome "cultural technique"[1] of social distancing, that works as a form of biopolitics of outsourced species survival. But it is simultaneously, a critic might quickly argue, resuscitating consumerist ideals and seduction of business as usual, thus digging a new and deep narcissistic pond for (some parts of) humanity – even as our technologised world is "burning" (Mullaney et al. 2021).

But even more profoundly, as we will discuss in this article, data mining is bound to our bodies in paradoxical ways and with deep existential repercussions. The systems rely on and exploit existential needs as well as behavioural and body data, and yet the no-touch trend suggests that bodies (once emptied out or reduced into functionalist components) are simultaneously rendered phenomenologically insignificant.[2] This is paramount since hands are first and foremost, we argue, media of touch, affect, care and caress (Schwartz 2018).[3] The phenomenology of handedness also places "knowledge in the hands"; it is a way of knowing through tacit habits in the body. This is a case in point for Merleau-Ponty's claim that the perceiving body is *not an object*; it is an expressive unity that allows humans to experience the world, but also to transcend themselves toward others in order to care for them (Merleau-Ponty 1946 [2011]:239). *We reach out with our hands to touch, therefore we are.*

For the philosopher Vilém Flusser the hand is also what characterises our human existence, but his hand grasps things and transforms worlds.[4] Flusser argues that ever since

> human beings have been human beings, they have been handling their environment. It is the hand with its opposable thumb that characteries human existence in the world. The world is grasped, by the hand, as being made up of things. And not just grasped: The things grasped by the hand are possessed so as to be transformed. The hand in-forms the things grasped by it. (1991:90–91)

He claims that these able and dexterious hands – hands that are tinkering – are in fact withering in this type of desolate environment: "The hands have become redundant and can atrophy." But fingertips have on the contrary "become the most important

1 According to Bernard Siegert cultural techniques have a natural affinity with and involve hands, bodies and tools; they are "operative chains that precede the media concepts they generate" (2015:58).

2 In the mid-twentieth century debates were running high on how to distinguish phenomenology and existential philosophy. Mark B. Wrathall and Hubert Dreyfus (2006) show that this debate is antiquated today, since hybrids between the schools are very common. Our article is written in this spirit and merges concerns with authenticity, irreducibility, responsibility, being human in and with the world of technology; embodiment, perception and deep relationality.

3 It could also be argued that biometric hands are here removed from their feminine roles in human existence in the practices of caring, touching, repairing, embracing and washing etc. (See Schwartz 2018; cf. Young 2020).

4 This position on hands was also expressed by Richard Sennett in his 2008 book *The craftsman*.

organs of the body" (ibid.:92). This "handless" fingering and counting human being of the future, the philosopher Byung-Chul Han similarly reflects, is a *Homo digitalis* bereft of action (2017:32). For Flusser in this vein, technological developments profoundly incapacitate and thus *disable* us:

> As this situation is impossible to grab hold of, nothing in it is capable of being grasped, and nothing can be handled. In it the hand, the grasping and productive act of handling, has become redundant. Whatever can still be grasped and produced is done automatically by non-things, by programs, by "artificial intelligences" and robotic machines. (1991:91)

In the process of bequeathing to AI the role of making both meaning and worlds, and in a situation in which "there is nothing for the hands to get up to or do", some of our humanity is lost. In Flusser's reading something is thus cracked wide open by the decline and refiguration of the hand, leaving him with a sense of deep disorientation. By contrast, others see the "digital condition" of fingertip interfaces (Heilmann in Peters 2016:94) as providing an inflated ratio for hands and fingers in digital culture. Artist and media scholar Merlyna Lim emphasises not manual atrophy but instead an overload of tasks and thus an increased leeway for hands: "Click, hold, press, push, swipe, tap, touch. Hands have become the medium that mediates and 'massages' our ways of sensing, feeling, thinking, seeing, and being in the world" (2020:n.p.).

What is specific about palm recognition technology is that it inserts a rift into these common lived experiences of (digital) hands, by doing away with touch. As we intend to shed light on in this article, it is the very annulment of touch which calls forth and relies on what we call the existential-phenomenological chasm. For us, the touching hand is central and while the no-touch dimension is not unique for palm recognition but pertains for example to face recognition, eye retina scans and voice recognition technologies too, the argument is that when hands are evacuated of their phenomenological, ambivalent and open-ended roles, they are nailed and thereby deferred in ways that deeply affect human existence and flourishing in the world. The example reaffirms that digital technologies and AI manifest the cartesian project anew of severing the mind from the body in deeply problematic ways. But as we aim to further demonstrate, the chasm produces hands that cannot grasp and touch while also reinforcing ableism of the normate body. This pushes for a profound form of power analysis that also brings back from its mysterious disappearances on the scholarly and techno-cultural radar, *existential bodies* and thus *bodies that do (not) matter,* to paraphrase Judith Butler (1993). The goal is to unpack what feminist media theorist Sarah Sharma (2021:8) calls the specific "techno-logics" – and "illogics", we will add – at work in these touch-free and thus sense-less machines. While there is a rich plethora of possibilities and roles for (biometric) hands, those roles are always to some extent conditioned by a techno-logics embedded in certain circumstances, power relations, norms, social rhythms and techniques.

These technological conditions echo concerns within sociological theorisation of the body. The hand itself has a central place in the classic sociology of George Herbert Mead whose concept of "manipulation" builds upon *manus*, the Latin origin of the word hand. He suggests that physical objects are socially mediated through perceptive, manipulatory experiences of endowing the things that surround us with a social perspective (1932 [2002]). In this manipulatory act, the constitution of the object is connected with the constitution of the individual's own body: "a cooperation of the hand and the eye that creates 'things', permanent objects, only when the capacity for role-taking, which has been developed in social intercourse, is also utilised in the individual's dealings with non-social objects" (Joas 1997 [1980]:153). Manipulation implies ultimately that individuals learn to perceive themselves as objects (Mead 1934 [1967]). This seems echoed in the datafication and/as objectification of the body today, including the role of biometrics for shaping self-perception. But like other later sociological theories of the body, Mead's theory reduces it to a facet of the social. This demonstrates, according to Bryan S. Turner, "an analytical gap at the core of sociological inquiry, a theoretical prudery in respect to human corporeality" (2008:33). He traces this back to the paradoxical beginnings of sociology as a discipline, based on a dismissal of positivist biologism (including eugenics and Darwinism) while relying both on a positivist institutional infrastructure and on a foundation in social constructivism. Founded upon the central assumption that nature is always already culturally mediated, socially constituted and transformed, "the human body as a limiting point of human experience and consciousness seemed less important than the collective reality of the social world within which the self was located" (ibid.:34). Hence, we find here an incompatibility between sociological investigations of social constructions of the self and the phenomenological insistence on the body never simply being an object, but always a situated, singular–plural embodiment of existence. Turner's analysis thus brings to the fore that the existential-phenomenological chasm has in fact often been reproduced in sociological inquiry.

In this article, we will be discussing the inherent ambiguities at play *vis-à-vis* the existential bodies that palm recognition essentially depend upon and make invisible – bodies in diversity, singularity and dis/ability – by attending to the repercussions and risks if palm metrics should become the primary signifier of identity, nature and value. Previous research on biometrics has mainly centred on two dimensions: *the coded body as the future of identification* bringing to the fore "the normative and unquestioned types of classification, categorisation and even discrimination on which the technologies are built" (Olwig, Grünenberg, Møhl, & Simonsen 2019:8), and the *reception and renegotiation of biometrics* among vulnerable populations. The main focus has been on security after 9/11. In sum, critical research on biometrics has primarily focused on surveillance, security, race, migration and biopolitics and has often placed face recognition centrally (cf. Gates 2011; Magnet 2011; Ajana 2013; Browne 2015; Andrejevic & Selwyn 2022). Here instead palm recognition and thus hands are placed centrally, examined through a bifocal lens of existentiality and disability. In the hope

of contributing to and thus to stoke what Rob Heynen (2020) calls a "critical theory of the biometric body" the essay subjects the technology to a series of critical impulses and inquiries inspired by debates mainly in existential media studies and crip theory while also drawing on insights from feminist science and technology studies (STS), critical data studies, the new materialism and more.

For existential media studies the introduction of touch-less biometrics constitutes a "digital limit situation", which implies increased vulnerabilities and stakes for the very definition of human value. And by re-conceiving of media as existential media of limits, we may examine how they set parameters that enable or disable both bodies and discourse (Lagerkvist 2022). In pursuing this analysis further, we draw particular inspiration from key interventions in feminist crip theory. "Cripping" is defined as an approach that allows for overturning the ableist matrix, and as a way to challenge normative justifications of technology. Placing disability centrally to problematise compulsory ablebodiedness also offers a radical reconceptualisation of human value in terms of desirable disability (Kafer 2013). It thus counters assimilation, as an ideology embedded in universalist technologies, and sees disability as a desirable, generative and disordering force (Garland-Thomson 1997 [2017]). For us then, cripping means subjecting palm recognition to "the powerful, messy, non-innocent, contradictory, and nevertheless crucial work of crip technoscience" (Hamraie & Fritsch 2019:2). This implies a critical interrogation of how tying assets to the physical body risks affecting the very concept of human value in deeply disturbing ways. An eerie scenario is invoked: turning the socioeconomic realities of poverty or wealth into an embodied faculty, an inner quality of the embodied person, brings about startling prospects for projecting "human trash" as *inherent qualities of one's body*. In this way, biometrics evokes what scholars have stressed recently, namely that AI developments are both indebted to eugenic genealogies (Chun 2021; Torres 2023) and set in motion, worryingly, eugenic world building for the future (Garland-Thomson 2017a).

To explore these matters the article offers a theoretically informed close reading of the palm reading device as "a concrete object to think with" (Frosh 2018:25). Inspired by "digital technography" (Berg 2022), space is also afforded to a few reactions to the palm reading technology that speak to the current AI imaginary,[5] weighed against

5 Acknowledging that these biometric systems are powered by AI engines today we also approach the phenomenon of palm geometry as it is construed through the forceful yet ambivalent socio-technical "AI imaginary", visible in posts on YouTube and at Hacker News from 2020-2023. Without aiming to offer a conclusive picture of what touch-less technologies mean to people across the globe—and in acknowledgement of the limited nativist origins of the US context of the reactions studied—we have been "pawing" these materials with theoretical sensibility. A range of themes emerged that nevertheless offer cues for further engagement and critical analysis. Posts on YouTube https://www.youtube.com/watch?v=4WaOq3wQlxI and at Hacker News: https://news.ycombinator.com from 2020-2023, have been thematically analysed, inspired by Ryan & Bernard (2003). It must be noted that the essay provides an exploration of initial reactions, not the practices of appropriating, using or renegotiating the technology, which always go in diverse directions. For an example of this type of approach, see Olwig, Grünenberg, Møhl & Simonsen (2019).

the market rhetoric of promoting and rolling out the device. This latter context is also key for parsing the sense in which Amazon One and other palm reading devices transform veins into data and thus the phenomenological hand into a harsh, instrumental technique and component of platform capitalism. This prompts a mapping of the criticalities and imaginaries evoked by these systems, as well as a brief insight into how the technology works.

The workings of awesome and apocalyptic biometric hands

"[T]echnology is the realm of the hand", argues Liam Cole Young, and the hand is "the first and primary interface between the human body and most technical objects […]. Today there is no liking, sharing, retweeting, posting, or streaming without these *humble techniques* of the hand" (2020:n.p, emphasis added). On closer inspection hands are not always humble. Instrumental hands are about craft and skill but also, as Young concedes, our primal weapon and power technology. As such instrumental biometric hands can stir up emotions. Biometrics, including palm recognition, is imbricated in the AI imaginary reflecting a series of ambivalent concerns, hopes and worries about the future (Campolo & Crawford 2020; Coeckelbergh 2021). But how does the technology work?

Amazon One gives a technically rudimentary, yet quite revelatory, explanation of the ideas behind its set-up. The device drafts you securely through extracting what is deeply embedded in your palm. Beyond what is visible or knowable to you, the machine *knows you* every time:

> *Your hands are uniquely yours*
> Your palm is made up of tiny, distinct features on and below the surface, many that are indiscernible to the human eye or a standard camera.
> *The Amazon One device is designed to read them*
> In seconds, a process of proprietary imaging and computer vision algorithms capture and encrypt your palm image.
> *To create your unique palm signature*
> Amazon One uses the information embedded in your palm to create a unique palm signature that it can read each and every time you use it.[6]

Recogtech, in collaboration with Fujitsu, has its own version of palm recognition. They explain the workings of its technological operations, and its purpose in securing human identification:

6 https://one.amazon.com/how-it-works

> Every palm has a unique vein pattern, which can be scanned using an infrared camera. As veins are under the skin rather than on the surface, the Palm-ID is considerably more resistant to fraud than fingerprint recognition, for example. Besides being accurate and fraud-proof, the Palm-ID is also hygienic, quick and extremely easy to use. Users are very positive about the system.[7]

Vein recognition operates so as to measure the difference between deoxidised and oxygenated hemoglobin in your blood composition. So, while the system relies on vein patterns that in themselves sit deep in the hand, the veins become "extracted" as they are translated into body data. They are turned into instrumental objects in the very act of being scanned. This may sound worrying for users, but Recogtech stress that the technology is well received.

Such positive opinions were indeed reflected in commentary fields online, after the launch of Amazon One. Some voices welcomed the new mode of contactless payment. For those citizens who also feel safe in the digital ecology at large, there is nothing to worry about: "who cares, it's awesome. I have nothing to hide"[8] says one of them. Such responses are in affinity with the classic ideology of the technological sublime, and its oft-professed libertarian inevitabilism: "The world is changing fast, some people may not like this but it's the direction where life is taking us. Some things we saw in movies are becoming a reality. I like it." Within an American techno-culture of manifest destiny, "MachineGod" also embraces the robot in the garden, as an inevitable fact of techno-genesis (cf. Nye 1996): "It's in our nature to want to rise above our limits. Think about it. We were cold, so we harnessed fire. We were weak, so we invented tools. Every time we met an obstacle, we used creativity and ingenuity to overcome it. The cycle is inevitable."[9] Hence, the ableist assumption that technology will cure us and alleviate our human impairments, to which we will return later, is here given expression in the reception of palm recognition.

But a sense of insecurity and ethical urgency in our time of technological development is also visible. In a series of high-strung critical posts Amazon One is likened to "the Mark of the Beast", that is to signs of the Apocalypse in religious and eschatological sense.[10] Some members of the public cite the Book of Revelation in which hands are referred to as means of payment when the dark powers wield their ultimate weapon at the end of the world: "And he causeth all, both small and great, rich and poor, free and bond, *to receive a mark in their right hand,* or in their foreheads: and *that no man might buy or sell, save he that had the mark*, or the name of the beast, or the number of his name" (Revelation 13:16–17, emphasis added). The apocalyptic AI imaginary

7 https://www.recogtech.com/en/products/palm-id, italics added.

8 @goopei5303 (August 2022).

9 @jarrodhollie8244 (April 2022); MachineGod (April 2022).

10 In the US context, this is a classic trope in pious and evangelical reactions to modern social developments including new technologies. The Apocalypse and the Book of Revelation have a central place in their imagination, and American evangelicals read it as a revelation of the impending demolition of secular cosmopolitan globalism (McQueen 2017; Beal 2018).

is pervaded by a sense of imminent violent disruption: "This is the mark of the beast! Don't do it!" is one recommendation.[11] The end seems near at hand, and "it's getting closer each day" allowing for the conclusion that this is "Beast system step by step".[12] Less eccentric critical remarks concern privacy, and often echo worries about Orwellian surveillance and control, security and integrity: "If my credit card number is hacked I get a new card, if my palm biometric is hacked does Amazon get you a new palm?"[13] For many, biometrics thus ushers in new contingencies and existential insecurities.

Scholars have similarly pointed to the vexed context for its emergence today. They stress the sense in which governments and businesses alike sped up the project of deep datafication of our societies during the pandemic, heightening human vulnerabilities to the exploitative regime of surveillance capitalism, and profiting from the crisis (Burckhardt et al. 2022). Or as the social critic Naomi Klein pointed out in *The Guardian* early on during the pandemic:

> It has taken some time to gel, but something resembling a coherent pandemic shock doctrine is beginning to emerge. Call it the Screen New Deal. Far more hi-tech than anything we have seen during previous disasters, the future that is being rushed into being as the bodies still pile up treats our past weeks of physical isolation not as a painful necessity to save lives, but as a living laboratory for a permanent—and highly profitable—no-touch future (2020, n.p).

Klein envisaged the touch-free near future as a dystopian and deeply undemocratic space, built from the ruins of the late modern capitalism in one of its most callous reinventions of itself. After the creative destructions of the pandemic moment, covid-deaths and despair were turned into testbeds for new products. These practices of datafication within our platform ecologies thus also carry numerous problems of extractivism, oppression and exploitation; a fact that many critical scholars have staunchly pointed out of late (O'Neil 2017; Couldry & Mejias 2019; Zuboff 2019; Chun 2021; Crawford 2021). In this context Amazon One turns your living, existential body into a means for literally indexing and fixing the self as a purchasing being, whose palm becomes instrumental for actions of solipsist consumption. There is thus a streamlining of the potential meanings and repercussions of these systems and of the body itself. This is connected to the instrumentarianism of our age of platform capitalism (Zuboff 2019), in which biometric hands are means for categorising human beings. As part

11 @1210katie0121, YouTube (September 2022).

12 @believeinjesus8300, YouTube (January 2023). Counter-voices resort to good sense, and to reason, comparison and irony to deconstruct the fears of the new technology. nugagator-hag-1 argues that this looks just like conspiracy theories in circulation: "I worked in retail years ago when only a few companies used cash registers able to read barcodes. I had customers come into the store to warn us that the barcodes were the 'mark of the beast.' Times really haven't changed, these freaks just find new things to be frightened of." Hacker.com (August 2022).

13 @FredFons1YouTube (April 2022). See also @salmollica1846, YouTube (May 2022); ballenf, Hacker News (Sept 29, 2020).

of contemporary culture's invisible information infrastructures, western cultural and historical patterns of classification are through biometric hands here afforded excessive algorithmic guise (Bowker & Leigh Star 2000).

In sum, through such reductions, extractions and classifications, the techno-logics of the biometric hand renders it existentially vacant. And yet, the body is never left without a mark in technological culture, subjected to various ideological claims and inscriptions within particular utopian and dystopian imaginaries. To further explore the significance of the existential crevice at the heart of biometric technologies, and to then examine their role in dis/abling bodies and shaping human value, there is reason to interrogate the relationship between bodies and mediation. We thus turn next to the cartesian legacies in the age of biometrics, and to what looks like a return of bodies at the same time.

The map and the terrain: Biometric representations and phenomenological dreams

Biometric hands are, as explained above, captured, encrypted, drafted while read "hygienically" and "securely". But what is actually the relationship between the map and the terrain here? This is a contentious scholarly discussion, in which we identify several different positions.

Some place emphasis on the fact that no technology can ever perfectly represent the body. Hence "… we need to understand biometric technologies as a map of the body, one that leaves much out and which fails to represent bodily complexity" (Magnet 2011:156). In other words, while the body itself can only be known through mediation, this does not mean that it exhausts its meaningfulness and textural and experiential richness: "the body is given through language, but it is not, for that reason, reducible to language" (Butler 2005:21). Others argue that today the ontology of body as information flattens out definite distinctions between the body and its representations: data selves and data doubles are thus enmeshed in the very definition and understanding of the body in digital existence (Haggerty & Ericson 2000). The stress is here also on the porousness of bodies and on bodies bleeding into machines. Or as Luna Dolezal explains, in her discussion on the usage of the prosthetic metaphor in cultural theory and posthuman discourse: "[T]he living body" is in this perspective "in a constant dynamic interaction with its social and material milieu, incorporating instruments, tools, and technologies as *prostheses* to generate 'new bodily capacities'" (2020:126). Hence, among posthumanists *prosthesis* has been invoked as a "metaphor for the technological extension of human capacities to overcome the limitations inherent to the 'natural' human body. In this vein, the prosthetic metaphor is also deployed to signify the body as inherently fluid, malleable, and dynamic" (ibid.). This brings to mind Marshall McLuhan's (1964) medium theory, which places the body centrally for understanding media, and sees technologies as universalist and generic *"extensions of Man"*. The biometric person would in this perspective be understood to be a new rendering of Donna Haraway's cyborg, a once progressive figuration, made more or less mainstream.

From within crip theory there are also representatives that stress that technologies may be essential "extensions" for people with disabilities, and that they can literally enable life (Forlano 2016, 2019). Dolezal (2020) also brings out that Merleau-Ponty's phenomenological project actually underwrites the technicity of the lived body, for example in his discussion of tool usage. He used the visually impaired person's cane as his case in point to claim that it had indeed ceased to be an object for the disabled person. He however also made a point about touch as key for these technologies of extension: "the cane's furthest point is transformed into a sensitive zone, it increases the scope and the radius of the act of touching" (Merleau-Ponty 1946 [2011]:144). This means the impaired person incorporates the body schema of the cane into his own lived experience and habitual extended touch. For Hamraie and Fritsch (2019) this is captured under the heading of "interdependence"; a deep crip relationality with technology. In this reading the touch-free trend may in some cases be assistive and can work in ways that can potentially be liberating, augmenting and enhancing for people with disabilities.

Yet others have been cripping such approaches as being too sanguine. The underlying assumptions in medium theory, expressed through its common use of prosthetic allegories of bodily extensions and amputations – often overtaken in mainstream cultural theory as well as in the history of computing – have been avidly problematised by critical disability studies as an expression of ableist ideology (Mitchell and Snyder 1997, 2001; Jain 1999; Sobchack 2006; Mills & Sterne 2017; Dolezal 2020; Petrick 2022; Butnaro 2023). Disability critics of the cyborg figure have also argued that disabled people often have an uneasy or "ambivalent relationship to technology" (Kafer 2013:119) and that "Haraway's approach to the cyborg takes for granted that disabled people easily meld into technological circuits, an assumption shaped by imperatives for rehabilitation, cure, independence, and productivity" (Hamraie & Fritsch 2019:13). The metaphorical usage of *prosthesis* also invokes the complexities that pertain to the cartesian imaginary which afforded little role to the body and saw it as a hindrance to objectivity, or as "the primary prosthetic: it is the machine-like 'technology' that is controlled and utilised by consciousness" (Dolezal 2020:126). Today, in a communication culture of automation that continues to downplay the body within this tradition, it is actually making a series of returns (Lagerkvist 2021).[14] For starters, biometrics and other incarnate, corporeal and sensory AI technologies[15] ostensibly recall us

14 In an essay that discusses hands, "How can I deny that these hands and this body are mine?" Butler has also pointed out that the cartesian modernist denial of the body was dependent upon media representations effectuated by the hand, which actually returned it through the very forms that sought to deny it. The body is in fact a limit case of *res extensa,* poised on the threshold between mind and matter. She demonstrates the centrality of the hand in Descartes' *Meditations*, in which he is famously setting forth a subtraction of the body, in the quest for certainty in the realm of the soul. But the practice that Descartes himself is involved in of *reasoning-cum-writing* (by hand), both returns the incontestable body and turns it into a specter (Butler 2005).

15 Examples include wearables such as health apps and biometric bracelets and watches; the fast

to the phenomenological acknowledgement of the reality of the sensing body as the source of our worldly being.

At first glance, it may thus seem that biometrics reconciles the body since it makes it central for knowledge in ways that dispel cartesian dualism and celebrates the corporeal. In other words, since bodies are so central to these datafication processes they thus seem at first value reclaimed. In this way there is something about these technologies that reawakens the phenomenological dream. But if we recall that for Merleau-Ponty the body – and the hand – guides and allows for an orientation toward others in the world, and thus for becoming an ethical subject, remote and touch-free biometrics affords the radical opposite of a relational and ethical mode of *being-in-and-with-and-for-the-world*, that searchingly and carefully senses and tries to make sense of and care for the world around them, with the help of their hands. Amazon One illustrates instead the problems of tying identities to bodies by effectively decoupling the body from phenomenological and situated experience.

So, in reality we argue, biometrics actually turns the body into an object anew. As Btihaj Ajana has stressed, the process implies that the *who* of a person (the irreducible biographic person) is reduced to the *what* (what can be known through the passport, name, metadata, biometrics, etc.) (2013). By turning the body into a stabiliser of identity, while converting the body itself into an object for indexing whatness, the question of identity shifts from the domain of narrative (the story or lived experience of who someone is) to that of reductive templates (hence, to the digital samples of one's biological data). Biometrics thus secures what Paul Ricoeur calls *idem* identity (what one has, what is permanent) as it evacuates the *ipse* identity (the embodied and lived self that one is, what is changing) (1992:2–3, 121). As the existential chasm opens up, the fundamentals of our unique physiology are immediately turned into something we possess: a face, a fingerprint, an iris, a palm, etc. It thus renders insignificant the existential body of human narration, perception and sense-making: the phenomenological reality of *being a body in the world.* The severing of mind and body in cybernetics is hence downplayed, but replenished by a severing of the biologically and geometrically measurable body from the phenomenological and diverse existential body. Biometrics here implies the transformation of the body into processable, storable and retrievable forms of information. Instead of being the container of the soul as in Descartes, the body is now regarded as the source of instant truth. In this way it gives supremacy to the body over the mind, and thereby actually reaffirms the dualism.

development of exoskeletons and sensory AI modalities that mimic the senses, for example olfactory sensory analysis. See: https://brainchip.com/real-world-ai-processing-all-five-senses/. In the realm of *psychophysics* we see designs of perception and sensing machines (Salter 2023).

The palm becomes in this process a medium of perfected correlation and of complete disambiguation. In the engineering of biometric systems there is "quite a general agreement" (Fairhurst 2018:8) about which criteria of human characteristics that should be chosen in creating a biometric data source: universality, uniqueness, permanence and collectability. These characteristics should be objectively measurable in a quantitative way, and there should be "no ambiguity about what is being measured" (ibid.). The criteria invoke immediate scrutiny. Overall, it seems ill-advised that living existential beings are mapped by the biometric system, as if they were universally recognisable *objects*. Crip sensibilities will also trace an inherent ableism to the very idea of the universal: bodies are different, and some of them matter and "function" within the system more than others. The straightforward *leaving out of complexity*, as stressed by Magnet, is however crucial and constitutes the very ableist crux of the problem: it is what fractures open the existential chasm.

To sum up, we maintain that even though people (with disabilities) co-evolve with, are enabled by or ambivalently live through technologies and media representations, a lived sense of embodiment will to some extent defy being fully inscribed or marked. The body is not reducible to an object, and yet as we stress here in relation to biometrics, this is in fact what is at risk of happening in this domain. As the realities of the embodied and vulnerable self are rendered invisible,[16] so is a fuller perceptual field of being human in diversity and disability. Turning bodies into measurable means thus implies that rich and varied forms of embodiment and experience are quenched and extinguished. What is more: as the technology instrumentalises and rationalises the body as mere function within a universalist machinery, this recalls eugenic hauntings in culture. Our argument is that the touch-less dimension is here key. When objectified the body is evacuated of phenomenological meaning, sensibility and sense-making, invoking our culture's darkest media histories of measuring human physiques – *eugenics* – and in the process distinguishes and reproduces the normal versus the abnormal, ability versus disability, human value versus trash. The dangerous link between contemporary biometric technologies and eugenics urgently calls for cripping the senseless machine. In the next section we shall turn to these practices of measuring bodies, with old and thorny roots, that resurface in today's conflicted environments of datafication. We will prod some of the lineages from eugenics to biometrics.

16 Or as John D. Peters put it "Information is knowledge with the human body taken out of it" (1988:15).

The techno-logics of measuring and defining human value – from eugenics to biometrics

> "I don't like the idea of a human body becoming synonymous with the amount of money they have."[17]

As a range of scholars in critical data studies have shown, datafication transforms human life and generates different kinds of normative figurations in the process of extracting *new forms of value* from data (Couldry & Meijas 2019; Burckhardt et al. 2022). In an analysis of Microsoft's Azure "Face Cognitive Service", which reads inner moods on the face through affect recognition (following seven "universal emotions"), Jeremy W. Crampton similarly argues that the implementation of biometrics has "taken surveillance beyond simply seeing and recognizing, to categorizing and inferring *a subject's innermost nature*". Importantly, he argues, this shift "from surveillance as epistemology (what is seen is known) to surveillance as ontology (what is seen as comes into being)" (2019:55, emphasis added) thus also informs what can be conceived to be existing at all. This is a superstitious techno-logics which sees data and algorithms as unambiguous, precise and clear-cut, with the ability to objectively determine and nail someone's existence, nature and future through "objective" measurements (Browne 2015; Kaminska & Grondin 2020:7). This immediately infers a particular form of value, and transforms in the process how we understand "human value". To further offer a crip reading of this, we must start where the problems begin: with the historical enlightenment legacies of defining "the Human", and with metrics as means of nailing human value.

It must be noted that there is increasing awareness both in engineering circles and critical AI research that biometrics has a long-standing political and historical lineage with powerful colonial and racial subcurrents (Valdivia, Serrajòrdia and Swianiewicz 2023). As Simone Browne has argued: "a critical biometric consciousness must acknowledge the connections between contemporary biometric information technologies and their historical antecedents" (2015:118; see also Maguire 2009). In this vein, media theorist Wendy Hui Kyong Chun has identified a series of similarities between twentieth-century eugenics and twenty-first century data analytics, as they depend on surveillance and enforce segregation. She argues that machine learning has "founded a revised form of eugenics today, in which discriminatory pasts, presents and futures coincide" (2021:66). Chun observes an inequitable eugenic logic of correlation at work in our time of datafication, as bodies are mapped by default through homophily. Correlation not only predicts but forges certain actions, within a broader process of "cultivating physical similarities in order to control the future" (ibid.:59). It is not the breeding of a healthy nation state, as in older eugenic projects, which sits at the heart of discriminating data, however, but *the person* and their preferences, through which

17 @LizzyAlexis (August 2022)

clusters of networked neighbourhoods are constructed and positioned antagonistically. Yet, she argues that the firm belief in eugenic solutions and the predisposition toward correlation of the past century, are replayed in this world of data science and predictive modelling.

One may complement Chun's astute observations, by zooming in on the straightforward and linked lineage of *metrifying the body* – or allowing the body to be measured or to be a measure[18] – across these projects. Measuring human beings and their bodies, and in turn, nailing their "nature" and "value" is never innocent and a historical practice in deep disrepute. Disability and race sit at the heart of the project. This is evidenced as drafting the body in eugenic-adjacent fields in the eighteenth and nineteenth centuries, was a practice characterised with an obsession with the abnormal, to be ascertained through the measuring of proportions of nose, mouth, forehead and the crane (Schaffzin 2020:37). *Anthropometry* was a technique for measuring the human individual for the purposes of understanding human physical variation, used in physical anthropology by for example Franz Boas in the late nineteenth century (Donnelly 2020, Olwig, Grünenberg, Møhl, & Simonsen 2019). It involved various attempts to correlate physical with racial and psychological traits. Similarly, *physiognomy* was a pseudoscience that connected facial traits to human character (Pearl 2010). A key figure in this field was the Italian professor of psychiatry, Cesare Lombroso, who measured skulls and other bodily proportions, in order to try to identify and classify criminal bodies. The history of biometry as an applied form of science thus has a strong link to ideas about biological foundations for criminal behaviour. This is exemplified also in the work the French policeman Alphonse Bertillon, who developed a categorisation system for criminal records, based on measuring different parts of the body.

In turn, these measuring practices informed the founding father of eugenics: Francis Galton. The classic project of eugenics was closely connected to heredity and improving the human material. It was a hybrid enterprise drawing on interdisciplinary qualitative anthropology, anthropometry and mythology. Within its more applied branches, as already mentioned, it employed biometrics by means of literally measuring skulls, etc. The project later transformed into reform eugenics in the 1930s, which began to rely more on statistics and quantitative medical science. The intervention in natural selection and the meddling with life and death were key and became part of the ideology in many welfare states. At the core of the project, valuable lives were pitted against less valuable lives: "Eugenics always had an evaluative logic at its core. Some human life was of more value—to the state, the nation, the race, future generations—than other human life, and thus its advocates sought to implement these practices differentially" (Bashford & Levine (Eds.) 2012:n.p).

Scholars today agree that "with the excessive use of biometrics" as media critic

18 Hands themselves have historically been connected to measurement. The breadth of the hand is an ancient unit of measuring length, standardised at 4 inches (10.16 cm) by a statute of King Henry VIII in 1540. It is still in use in Australia, Canada, Ireland and the UK, primarily for measuring the height of horses from the ground to the top of the shoulders.

Armand Mattelart puts it, "the old daemon of eugenic formatting has resurfaced in modern form" (cited in Kaminska & Grondin 2020:3). But how closely associated are these projects and how can their relations be analysed? We argue that the links are there, even as they may seem equivocal or indirect. While it may not be evident that palm reading can become discriminatory in the exact same and deeply crushing ways as in the practices of classical eugenics, its techno-logics of value ascription through measurement is still deeply problematic. Rob Heynen suggests the problem has to do with the forging of norms: "… contemporary biometric scientists share the nineteenth century desire to render bodies legible, to remake them as data; this raises a host of uncomfortable questions, not least around how biometric science *encodes normative conceptions of bodies*" (2020:110, emphasis added).

Today, such normative conceptions are visible, for example, in the aspirational practices for becoming an "optimal human" in self-tracking cultures (Lupton 2016:64–87). The current cult of measuring in mainstream culture is also fraught with ableism and scientific racism. And "prototypical whiteness, maleness, youth, and able-bodiedness" (Kaminska & Grondin 2020:7) are inscribed into biometrics of the past and the present. In this reading biometrics is a project involved in the fundamental normative forgings of who counts as being fully human, and what counts as human value. This is of course particularly painful in the case of people with disabilities. It invokes the entire debate about whether modernity will produce as Alison Kafer and others have discussed, a "future for crips" at all or, in effect, their eventual annihilation (cf. Kafer 2013; McRuer 2017; Garland-Thomson 2017b). Here our concerns echo those of Meredith Whittaker and colleagues who have argued that the very notion of ability is in itself "*defined (and redefined) through technologies of measurement and classification*" (2019:26, emphasis added). Furthermore, they show that determinations of "worth" and "ability" rely on "aberrance" which "is often used as a justification for disparate treatment, and connects AI's logics with *histories of exclusion*" (ibid., emphasis added). Hence, palm recognition has evident genealogical roots in the social and political histories of eugenics and contiguous fields – a legacy that is significant as it still acts upon our societies and affect people with disabilities.[19]

Yet, we also argue that this has vast and deeply problematic implications for all. It is not far-fetched to foresee serious repercussions of turning palm geometry into a primary signifier of identity – and of the practice overall of nailing (human) value to body features – in a no-touch future, in which bodies are obscured and thus cease to matter. Palm reading technology depends upon – while also cracking open and congealing – the existential–phenomenological chasm. Paradoxically, big tech companies try to address and perhaps cloak the chasm, by recurringly alluding to "your uniqueness".

19 The evident example is the excesses of eugenics within Nazism. Children with disabilities were the first to be sent off to the camps by the Nazi regime, and people with disabilities were part of a secret euthanasia program (Robertson, Ley and Light 2019). The sense in which this past is alive today has been addressed by for example David Pfeiffer (1994), Rosemarie Garland-Thomson (1997 [2017], 2017a, 2017b) and Olivia Banner (2019).

Or as Amazon One puts it: "No two palms are alike and the features of your palm change little over time making it *unique to you and you alone*." But it must be noted that the datafied hand as a representation is founded on innumerable other palms in anonymous sets of big data, and "[t]he data self can *achieve normality* relative to a statistical average profile based on users who share a similar data set within the various networks" (Horning 2012:n.p, emphasis added). While it has long been known that statistical averages never correspond to any one human being, they become realities as they act on beings in the world and bring them into being at the same time. Following Lennard Davies (1997), there is an ableist ideology at the heart of the project of statistics itself: "Cultural understandings of disability are intrinsically connected to the notion of normalcy. Normalcy is a historical and sociocultural construction that, in part, arose with industrialisation and the science of statistics where the average and the normal distribution became an imperative and was applied to ideal moral, intellectual, and bodily qualities" (Wälivaara and Ljuslinder 2020:80).

But it must also be noted that as a result of the straightforward overreliance on metrics and its neglect of the singular yet plural person, in all their uniqueness and extraordinariness, the senseless machine also produces an abject realm of unruly and ill-fitting disability. Biometrics thus forges a regulatory ableist matrix that defines and nails bodies and that produces a materialisation of norms in bodily formation. This in turn engenders "a domain of abjected bodies, a field of deformation, which in failing to qualify as fully human, fortifies those regulatory norms" (Butler 1993:xviii). Hence, with Butler "in hand", one may ask: What challenges are produced through those abjected bodies and hands? What if your hand does not follow the standards of normalcy? And what if you lack a hand altogether?[20] As Young observes: "[w]e have built a world that privileges and demands much of the hands that we otherwise take for granted. Such a world punishes hands that do not abide by the standards of normalcy that get designed into technical devices and networks." The differently-handed, he argues, are "shut out from many ecologies of making, shaping, and using" (2020: n.p.). On reflection, the differently-handed cannot grasp and shape the world as per Flusser's ideal, instrumental and able hand. Yet, Amazon One also disables his normate handling practices at the very same time. Hence, Flusser's grasping, productive, possessive hand is incapacitated by automation, which also illustrates that dis/ability is contextually dependent upon the technological environment, directing attention to how (digital) technologies are enabling and disabling humans at large on a continuum and in a variety of critical ways (Goggin & Newell 2003; Goggin & Ellis 2015; Adams, Reiss & Serlin (Eds.) 2015).

In sum: cripping the senseless machine means shedding sharp light on its technologics of metrification, classification and statistical probabilities, which distressingly

20 One voice in Amazon One's FAQ section illustrates the sense of not being recognised by the machine. The company explains the road to a functioning application in a way that reveals its ableist norms for a working hand that is steady and can hover, is not wearing any bandage, or obscured in any way. https://one.amazon.com/help

invokes the legacies of eugenics in western social, medical and political histories. Resituating these technologies of the "new" and glossy "AI era" in the context of these severe and shady circumstances, reveals how their techno-logics reforges ableist norms while (re)producing notions of human value. This occurs through its metric interventions into, extractions from and deep neglect of the existential body. Cripping, as we have proposed, allows for making visible the profound risks of connecting assets to body faculties. It also shows that biometric hands threaten the inherent inviolable value of each human being, and reformulate human value in deeply disturbing ways.

Conclusion: Offering alternatives by putting the finger in the wound

This article has focalised one form of biometrics: palm recognition technology that uses vein pattern recognition. It is a seemingly aberrant case, contravening the regular digital habits and modes of fingering and touching. The techno-logics of palm recognition is communicated through its touch-free mode and message. When turned into biometric data, the meaning of your sensing, fleshy and wrinkled hand – with bones, tendons, ligaments, veins and sensuous and highly sensitive, porous skin – is turned into measurable and reduced features that represent individual patterns for recognition. If your hand fits the data set, the device perpetuates swift movements that turn your will to purchase or to move about, or your projections into the future, into a fulfilment of that will. Your palm is a fortune teller in hand of sorts. The scanner is a "palm reader", reading value off your hand in more than one sense.

Your biometric hand – depending upon where and how you are situated in the social world – is thus revelatory not of "the end" of the world, but of the powerful regulatory matrix of bodies that matter or cease to matter or never mattered at all. Hence, beyond both its shimmering opportunities for easy shopping contra its potential wreaking of the Apocalypse – as reflected in the different utopian and dystopian modes of reception discussed earlier – Amazon One must be analysed against the deep background of ableist hegemonic automation, reliant on eugenic hauntings. If there is anything "beastly" at work here, it is in fact the mark of the insensitive and insensible – and even senseless – practices of default metrics, that reproduce the dangers of discriminatory datafication. Here, the media history of measuring and thereby normalising certain bodies while reducing others to lesser worth by pathologising deviance and disability, is massively recalled. The medium of palm recognition thus points to the future by reawakening hauntological dispositions of the past.

It is the instrumental forms of making and tinkering and a techno-logic of measuring and overcoming limits and weaknesses, that dominate the current socio-technical imaginary and by consequence, shape our relationship with emergent technologies. As has already been suggested, this is achieved by means of producing an existential chasm, and by giving short shrift to the existential body. But faced with the bleak picture of the hands of the future that we have ourselves purported – and which was offered also by Naomi Klein, Byung Chul-Han and Vilém Flusser – we are called upon

to offer alternatives. Two classic phenomenological interventions show the initial way. For Merleau-Ponty, importantly, a different world is possible through embracing and rediscovering that other body which we have called the existential body: "But by thus *remaking contact with the body and with the world,* we shall also rediscover ourself, since, perceiving as we do with our body, the body is a natural self and, as it were, the subject of perception" (1946 [2011]: 239). Beyond finding a richer form of subjectivity, this rediscovery also entails for us a move toward crafting more diverse imaginaries of bodies, selves, technologies and worlds. Following Merleau-Ponty, the post-phenomenologist Don Ihde stresses that "We are our bodies—but in that very basic notion one also discovers that our bodies have an amazing plasticity and polymorphism that is often brought out precisely in our relations with technologies" (2002:138). In Ihde's classic assessment of the human experience of technology, in terms of what he coined "human-machine relationality" (1974:267ff), he described experiences with machines as diverse and irreducible to a single principle. He further conceived of technologies as all-pervasive in our world, but also argued that the relation is essentially an *existential relation* that implicates our fate and destiny, but in an ambiguous way. This makes it essentially immune to the threats of an *absolute* mode of technocratic existence. He thus opens up for a possibility of a multiplicity of ways of living with technologies – and today we might add, with AI – in the world, and of conceiving of our future.

As we hope to have demonstrated in this article, an existential perspective in conversation with crip technoscience can take this one step further, while also invigorating sociological theories of the body. Simultaneously it may provide new forms of criticality infused with existential sensibility, for the field of critical data studies. Highlighting vulnerability as a lived, singular–plural experience rather than reducing it to a social construction, holds pathways to grasp cultural inscriptions on bodies in plurality, but also, to point the finger in the wound in order to reinform them. Embodiment is not a solipsistic project, but a locus of the sociomaterial world (Rogg 2024). To experience and change the world, we have to perceive it; a haptic capacity to care, comprehend, query and make a difference. Theorising *with* the body, and the disabled, impaired and vulnerable body in particular, offers crucial ways to critically intervene into a world which is overreliant on disembodied data and increasingly also on touch-free devices.

This means to reclaim the embodied and existential self, by shaping a sobering, more alive and discerning tale about the limits and offerings of biometric AI. Here hands are both recognised through the existential sensibilities of their sensing fingers, caring touch and perceptive skin, and as potentially differently constituted, or not there at all. Cripping the senseless machine ultimately means allowing the abjected hand to mess up and rip the hegemonic construct to pieces. From the vantage point of variously situated existential bodies, the tech is far from "smart" as in "making sense". From the position of crip sensibilities the "smart technology" is indeed a *senseless machine*. The senseless machine has no ability to make sense of life, yet it creates a divide between a domain of intelligible bodies, and what exists beyond it; the excluded and illegible domain of unthinkable and unlivable bodies that occupy its constitutive outside. It shrouds the injustices subtending that "accessible" tech world of value (Fritsch 2016),

and last but not least: it obfuscates the irreducibly messy and fleshy nature of human existence altogether. The chasm is not innocent but instrumental for these developments – and biometrics depends upon, breeds and incites it anew. Tying identities to bodies as data averages relies on effectively sequestering the depths and diversities of the phenomenologically experienced body. Palm recognition does away with the handling as well as the caring and hurting hand. This very neglect allows for opening floodgates of instrumentarian politics with eugenic genealogies, of measuring and nailing humans and their value. Its spurious correlations and contorted matchings of body data to particular features and futures, is devoid of deep relationalities, diversities and disruptions within existence.

In closing, touch-free systems like Amazon One need to be subjected to new forms of criticality, capable of reinventing also those powerful if ambivalent sociotechnical imaginaries that profoundly shape our day and age. Crip technoscience here resonates with the existential stress on limits and the refusal to comply with demands to fix, eliminate or cure disability. The task is to relentlessly keep pointing to the dangers of the eugenic and biometric marks on the body in digital existence, and to their reliance on the annulment of touch which brings about what has here been termed the existential–phenomenological chasm. A future for crips as well as for touch is the very foundation of any ethical and resonant future at all – with or without "intelligent" machines. Safeguarding the immeasurable value of the existential body and bringing it back from the chasm in its precious and honoured diversity, is therefore how to articulate a technological future – *with sense*.

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