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This journal represents an attempt to explore issues, ideas, and problems that lie at the intersection between the academic disciplines of social science and the body of thought and political practice that has constituted Marxism over the last 150 years. New Proposals is a journal of Marxism and Interdisciplinary Inquiry that is dedicated to the radical transformation of the contemporary world order. We see our role as providing a platform for research, commentary, and debate of the highest scholarly quality that contributes to the struggle to create a more just and humane world, in which the systematic and continuous exploitation, oppression, and fratricidal struggles that characterize the contemporary sociopolitical order no longer exist.

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Introduction

Marxist Transhumanism or Transhumanist Marxism?

James Steinhoff and Atle Mikkola Kjøsen
Guest Editors

This special issue of *New Proposals* explores how Marxism and transhumanism might be brought into conjunction. These two fields are rarely discussed together, and when they are, it is typically in the mode of one critiquing the other: Marxists against transhumanism (Rechtenwald 2013; Noonan 2016) or transhumanists against Marxism (Kurzweil 2012; Istvan 2018). We argue, contrary to this tendency, that there is much to gain from bringing these two fields together. Both of us have previously experimented with combining the two around a decade ago: by subjecting Marx's theory of value to a transhumanist vision of an android future (Kjøsen 2013; see also 2018) and by teasing out philosophical connections between conceptions of nature, humanity and machines in Marxism and transhumanism (Steinhoff 2014). More recently, with Nick Dyer-Witheford, we considered the future of artificial intelligence, a quintessential transhumanist technology, through a Marxist lens (Dyer-Witheford, Kjøsen & Steinhoff 2019). In this special issue, we sought to elaborate the idea that the opposition between Marxism and transhumanism is not necessary or inherent, but rather contingent and historical. While not all the papers collected here agree with this assertion, their various trajectories all orbit around a central question: could there be a Marxist transhumanism or a transhumanist Marxism?

Marxism is the vast body of work descended from Karl Marx. This being a journal explicitly devoted to Marxist scholarship, we leave it to the reader to define the field more precisely for themself. Transhumanism, however, requires some introduction amid the proliferation of similar terms such as antihumanism, metahumanism and posthumanism (for a disambiguation, see Ranisch and Sorgner 2015). Transhumanism is defined by its proponents as an "intellectual and cultural movement that affirms the possibility and desirability of fundamentally improving the human condition through applied reason, especially by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical, and psychological capacities" (Humanity+ n.d.). While this description says nothing about politics, most recent transhumanism has been deeply pro-capital following its techno-libertarian manifestation in 1990s "extropianism" (More 1990) and subsequent popularization by entrepreneur-futurist Ray Kurzweil (Kurzweil 1999). Because of this, the pro-

methean project of improving the human condition by technological means tends to be joined with, and confused for capital accumulation. Some of the most radical transhumanist thinkers tend to assume the continued functioning of capital amid cataclysmic, and even cosmic, socio-technological change. For example, although Kurzweil argues that the coming technological singularity (the moment when machines exceed human capacities in all respects) will irreversibly transform every aspect of human life, and even "death itself," he still expects there to be a need for "business models" (Kurzweil 2005, 7).

In addition to such explicit boosters of capital, contemporary transhumanism is tacitly represented in the operations of the world's most powerful capitalist firms. The turn to AI research since 2015 by all of the world's largest technology companies is emblematic of this practical transhumanism. Take for instance, the British company DeepMind (acquired by Alphabet/Google in 2014) which aims to produce human-level artificial general intelligence (AGI), or in their own words, "solve intelligence" for the betterment of humanity. Consider also Elon Musk's brain-computer interface Neuralink which was recently demonstrated to allow a monkey to play the video game Pong via an interface wired directly to its motor cortex (Flaig 2021).

However, while transhumanism today appears as a capitalist project, its historical lineage can be traced back to early twentieth century socialist thinkers such as the philosopher-physician Alexander Bogdanov and the biologists J. B. S. Haldane, and J. D. Bernal (Bostrom 2005; Stambler 2010; Hughes 2012). Marx himself has many what we might call *high modernist* moments in which he argues for overcoming human and natural limits and advocates the socialized use of technology to achieve freedom from necessity for all humans (see, for instance, Marx 1991, 958-959). The high modernist Marx can be read as a transhumanist. Despite this, and a history of Marxist technological fascination, by and large, contemporary Marxists show little interest in transhumanism. One prominent exception are the left accelerationists/postcapitalism theorists, who draw on transhumanist motifs, such as cyborg augmentation, terraforming and full automation (Srnicek and Williams 2015; Mason 2016; Bastani 2019). Left accelerationism has, however, picked up transhumanist motifs while dropping the capital/labour antagonism central to Marxist thought (Brown 2016; Gardiner 2017), glossing over much of the difficult question of how exactly capital is supposed to come to an end. We suggest that left accelerationism forgets its Marxist roots as it is blinded by transhumanist futures. "Accelerating the process" could, after all, lead to Kurzweil's dream of superintelligent business models. However, new varieties of left accelerationism continue to emerge, such as xenofeminism, which is held by some of the contributors to this special issue to be an ideal combination of Marxism and transhumanism, so perhaps our evaluation will need to be revised in the future.

In any case, our argument is that the issues central to transhumanism should not be the purview solely of the representatives of capital, nor of the left accelerationists. Neither should Marxist thought consider itself wholly distinct from the transhumanist movement. Instead, we hold that Marxist thought should seriously engage with transhumanism in order to "decouple it from its blindly capitalist trajectory, reflect on Marx's own high modernist tendencies, and delineate a social project to embrace or escape" (Dyer-Witheford, Kjøsen & Steinhoff, 2019, 161). To this end, we now present the following collection of papers, which present original and exciting views on the conjunction of Marxism and transhumanism.

The first section of the issue, "Towards a Marxist Transhumanism" includes papers which aim to produce a synthesis of Marxism and transhumanism or argue for the impossibility of that synthesis. Working towards a Marxist transhumanism, Sam Popowich problematizes existing transhumanist conceptions of identity and individuality and develops an alternative drawn from autonomist Marxism's notion of general intellect. Santiago Javier Armesilla Conde aims to develop a Marxist transhumanism by revealing actually-existing transhumanism as "transcapitalism" defined by a combination of anatomopolitics, thanatopolitcs, and biopolitics. Andrey Maidansky and Nikolai Biryukov examine historical connections between Marxism and transhumanism in the

Russian context. They argue that transhumanists have neglected Marxian and Russian cosmist precedents of their ideas, focusing especially on Marx's idea of the inorganic body and his materialist conception of human essence. James Steinhoff argues that Marxism is inherently transhumanistic because it entails a drive to de-reify nature, including the human being. He argues that Marxism necessitates a temporal inversion of its historical materialist perspective, entailing a transhumanist orientation towards the future of the human. Taking a contrary position to the above arguments, Jeff Noonan holds that there cannot be a Marxist transhumanism because these two fields have incommensurable goals; transhumanism aims to overcome the finitude of organic life, while Marxism aims to overcome the oppression of class society.

The second section, "Transhumanist/Marxist Explorations" contains papers which aim to cross-pollinate Marxist and transhumanist ideas. Iain Crinson questions whether transhumanism and Marxism's fundamental drives are really at odds via an interrogation of the ontological dualism between nature and the human. Lachlan Ross argues that transhumanist aspirations, including a blissful post-singularity life, are better understood via an adaptation of Marx's notion of real subsumption to the body of the worker and capital's desire to produce therein a state of "constant unremunerated value creation." Jens Schröter tackles the aesthetic dimensions of transhumanism and Marxism, considering Marx's notion of capital as the automatic subject as grasping the always-already transhumanist character of capitalism via several case studies of contemporary art.

The final section "Marxism + Transhumanism = Xenofeminism?" unsurprisingly contains papers which argue for the xenofeminist strand of accelerationism as a resolution of disjunctions between transhumanism and Marxism. Peter Heft positions xenofeminism as the fusion of Marxism and transhumanism and argues that it should be understood as the "corrupted heir" to what he terms "trans~~humanism~~." Paddy Gordon critiques the transhumanist subject of left accelerationism for its abstractness and argues for xenofeminism as a better way to engage with the transhumanist future in a grounded and historical way.

We would like to thank the contributors for their efforts and for their patient endurance of the lengthy, pandemic-beleaguered editorial process. We would also like to thank Charles Menzies, editor of *New Proposals*, for his guidance and essential work in bringing this special issue to completion.

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Compound Brain or General Intellect? Paolo Virno's Transindividuality

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ABSTRACT: This article argues that dominant perspectives on transhumanism maintain a commitment to the autarkic, self-determining, isolated individual subject. As a result, transhumanist conceptions which attempt to overcome individual isolation and alienation, such as J.D. Bernal's "compound brain," reinscribe liberal-individualist notions of subjectivity in a transhumanist future. A transhumanist Marxism would need to offer an alternative theory of identity-formation, and this article investigates autonomist Marxist Paolo Virno's conception of transindividuality both to critique transhumanist individualism and to offer an alternative way of understanding individual subjectivity. With Virno's transindividualist conception of subjectivity in hand, we are better placed to connect Marx's theory of the General Intellect with possible transhumanist futures.

KEYWORDS: Marxism, Transhumanism, Technology, Individualism

In the "Critique of the Gotha Programme" (1875), Marx notes that individuals "would not be different if they were not unequal" and so argues that in a communist society justice would have to take difference into account: "right instead of being equal would have to be unequal" (Marx 1978, 530-531). Transhumanist programmes often exalt this sense of individual difference. Nick Bostrom, for example, has argued that "transhumanists typically place emphasis on individual freedom and individual choice in the area of enhancement technologies" (Bostrom 2003a) with a goal of human flourishing and the overcoming of alienation.

Transhumanism's commitment to individualism *suggests* a tolerance for those who reject enhancement (Bostrom 2003b), but this pronouncement sits uneasily with transhumanism's legacy of eugenics and close relationship with capitalist socio-economic relations. In his discussion of in vitro selective breeding – "ectogenesis" – J.B.S. Haldane recognized eugenic selection's adverse social and psychological effects but nonetheless considered the social benefits to be clear: "had it not been for ectogenesis there can be little doubt that civilisation would have collapsed within a measurable time owing to the greater fertility of the less desirable members of the population in almost all countries" (Haldane 1923, 66-67).

Leaving transhumanism's eugenic legacy unchallenged would in itself entail reinscribing race-, gender- and disability-based inequality in the fabric of a posthuman future. But in addition to the eugenic component, capitalist transhumanism is marked by the need to reduce human labour to a homogenized, measurable, average.[1] From a subjective point of view, this would appear as competition

1 "The labour-time expressed in exchange-value is the labour-time of an individual, but of an individual in no way differing from the next individual and from all other individuals in so far as they perform equal labour." (Marx 1970, 32).

among (posthuman) workers, as "no-longer-human beings would make obsolete those who decline transformation" (Dyer-Witheford, Kjøsen, and Steinhoff 2019, 159). Difference of race, gender, sexuality, or disability would either be transformed out of the homogenized, average posthuman worker or those people would be left to die. Eugenics and capitalist logic go hand in hand.

This tension between the exaltation of individualism and the eugenic erasure of undesirable difference exposes a contradiction within transhumanist thinking based on a bourgeois conception of individualism itself. As a result, transhumanism is often marked by what Audre Lorde has characterized as a threatening necessity for interdependency (Lorde 1984, 111) which it tries to resolve through the (spurious) technologically-enhanced self-sufficiency of the individual as such (Graham 2002, 70). As a result, transhumanism's attempt at bringing about a post-human future free of capitalist alienation is doomed to recreate that alienation at a higher level unless a new conception of individuality is adopted. The social production of identity which is core to Marxist theory offers an alternative way of approaching the transhuman question of alienation, collectivity, and difference.

One typically Marxist way of understanding transhumanism is to see it as a form of left-accelerationism: the extensive development of technology as a means to overcome the alienation of post-industrial capitalism. The connection between accelerationism and transhumanism is often implicit, but sometimes rises to the surface, as in Ross Abbinett's remark that for accelerationists, "digital, artificial intelligence and biotechnologies are opening up a transhumanist future" (Abbinett 2018, 2). This dominant transhumanist tendency is linked to Enlightenment theories of subjectivity and the primacy of an autarkic, self-determining, free, and independent individual (Hughes 2013). As "the creation of new technologies of the virtual holds out the promise of deliverance from the limitations of existence in physical space" (Horner 2001, 71), transhumanist technologies seek to restore the dignity and power of the individual human being from the degradation capitalism has reduced it to (Bostrom 2005; 2007).

But this is not the only form accelerationism takes. According to Dyer-Witheford, Kjøsen and Steinhoff, Nick Land's formulation of accelerationism argues that the "mutual embodiment of capital and AI leads not to human emancipation from capitalism, but, on the contrary, to capital's emancipation from the human" (Dyer-Witheford, Kjøsen and Steinhoff 2019, 7). These two possibilities – emancipation of the human from capital or vice versa – are inscribed in Marx's account of automated technology in the *Grundrisse,* which we will look at below, and can therefore be considered part of the repressed unconscious of transhumanism, a repression that would need to be overcome by a Marxist transhumanism. The ambiguity of transhumanist thinking around accelerationism is not accidental but rather arises out of the contradiction between Enlightenment individualism and the collective fact of human life.[2] These contradictions can be clearly seen in the phenomenon of alienation which transhumanists claim to be committed to overcoming.

It is important to bear in mind the ways transhumanism, Marxism, and accelerationism are related, but distinct. The crude economic determinism of the "base and superstructure" model, especially as it is found in the earlier work of Marx and Engels (for example, in *The German Ideology* of 1846), was, with the rapid development of industrial technology at the end of the 19th century, transformed into a *technological* determinism which saw the development of technology as an automatic way to overcome the contradictions of capitalist society and produce a communist future. If Engels, as Stuart Hall has suggested, tried to challenge this view in the years after Marx's death, nevertheless the tendency towards "positive science" and economic determinism "was destined to be disastrously installed as the official version in the Second International" (Hall 2021, 72).

The accelerationist and transhumanist approaches can be understood as accepting and developing the orthodox Marxist form of technological determinism, and Ross Abbinett's description of accelerationism can be applied to both:

2 This contradiction is integral to Marx's theory of labour under capitalism in which collective, cooperative, social labour is always in tension with individual private ownership.

> If we are to transform the repetitive, drive-based forms of individuation that have come to dominate hyperindustrial society, then the ecstasies of disorientation, connectivity and self-expression to which they have given rise must be pushed to the point at which they produce counter-hegemonic events that are capable of transforming the acquisitive codes of the commodity form. (Abbinett 2018, 112)

Where accelerationism and transhumanism differ is in their understanding of the production of subjectivity and therefore of what constitutes alienation. For accelerationists, technological development creates a communist society for people who remain more or less unchanged. As Aaron Bastani put it in *Fully Automated Luxury Communism,* "liberal ends, specifically the individual being uniquely placed to determine their path in life, are impossible without communist means" (Bastani 2019, 194), which rejects certain Marxist ideas around the way economic and social relations produce individual subjectivity. In this way, the overcoming of alienation (say) involves the creation of a society appropriate to a pre-existing autonomous individual. Alienation is an *objective* mediation between the autarkic subject and the world. For transhumanists, on the other hand, individual subjectivity is itself transformed along with technology: "human beings … would no longer be subject to the inherent limitations of nature, somatic life or reflective inheritance" (Abbinett 2018, 114). Alienation in this view is a subjective ordering of the individual, and overcoming alienation means using technology to overcome the limitations of subjectivity as such.[3] However, both accelerationism and transhumanism remain committed, as we will see below, to the primacy of the self-determining individual.

Heterodox Marxisms, on the other hand, reject the premise of liberal individualism. Autonomist Marxists like Paolo Virno take seriously Gramsci's insights on capitalism as a civilization rather than just a mode of production, Western Marxism's interest in "superstructures," the lessons of postmodern philosophers like Deleuze and Guattari, and the work contained in the *Grundrisse*. And they have a more sophisticated approach to technological development and the production of subjectivity itself. Overcoming alienation, in their view, involves a social transformation of human subjectivity, and Virno's explanation of the way individuality itself is socially produced has major consequences for thinking a Marxist transhumanism.

In this article, I will briefly sketch in the problem of identity and individuality for transhumanism before turning to an alternative conception drawn from autonomist Marxism. After looking at the question of alienation and identity, I will explore the notion of the "compound brain" developed by J.D. Bernal in 1929. I will then connect this idea to Marx's conception of technology as reification of knowledge as well as of labour and the concept of the General Intellect as it appears in the *Grundrisse*. Finally, I will explore the ideas of the General Intellect and transindividualism in the work of autonomist Marxist Paolo Virno.

The Problem of Identity

Transhumanism's utopian programme seeks to abolish or overcome the three forms of alienation Marx identified in the *Economic and Philosophical Manuscripts of 1844*: alienation of the subject from themselves, alienation of the subject from their labour and nature, and alienation of the subject from other people (Marx 1977, 61-74). Transhumanism seeks to abolish the first of Marx's three forms of alienation, the alienation of an individual from themselves through the "augmentation of human intellectual, physical, and emotional capacities" (Bostrom 2005, 3) of human subjects, but also by removing what Marx saw as the cause of alienation – estranged labour – through the accelerationist abolition of labour itself. However, as James Steinhoff points out, the project of overcoming capitalist alienation while "leaving technological enhancement in the hands of profit-driven capitalist enterprise" is doomed to failure, since transhumanists are thereby "alienating the human that is to be transcended from itself" (Steinhoff 2014, 6). Transhumanism also seeks to eliminate the alienation of self from others through the construction of a "hive mind" or what J.D. Bernal has called a "compound brain." It is this last aspect of transhumanism that I will focus on in this article.

The contradiction between transhumanism's project to end alienation and the objective constraints on

3 Ross Abbinett provides a good overview of both right and left accelerationism, transhumanism, and Marxism from a Stieglerian perspective in the chapter on "Transhuman Networks" in *The Thoughts of Bernard Stiegler* (Abbinett 2018, chap. 4).

that project arise from its commitment to bourgeois individualism. James Hughes argues that transhumanism has inherited a conflicted view of human identity from the Enlightenment, a view which remained latent until the technological advances of the twentieth century. Hughes writes that

> The contradiction between the Enlightenment's concept of Lockean selfhood, foundational to liberal individualism, and the Humean empiricist recognition that the self is a fiction lay dormant until the twentieth century when neuroscience, another product of the Enlightenment, revived the debate. (Hughes 2013, 228)

For Locke, identity is founded on memory, reason, and reflection, and is the basis for self-determination and moral accountability. Hume, on the other hand, was skeptical that there was anything supporting identity but impulses, perceptions, and thoughts which our minds combine into identity in order to give us the illusion of self-determination and accountability.

> While for Locke memory was the core of personal identity, knitting together past and present self, for Hume memory was what created the illusion that there was some kind of continuity between past and present mental states. (Hughes 2013, 228)

The conflict between these two positions has long been recognized within transhumanist discourse, and the rise of both neuroscientific and postmodern perspectives on the fragmentation of the self raises the question of what, if anything, would remain of individual identity in a transhuman future. In her account of Ray Kurzweil's response to this question, Susan Schneider delineates four "leading theories" of identity: a pre-modern conception of the soul ("the ego theory"), a Lockean theory of psychological continuity, the materialism of neuroscience, and a Humean denial of the self at all (Schneider 2008, 5-6). Kurzweil himself adopts a neuroscientific conception of identity as "pattern," which can be successfully reproduced in digital machinery.

What is missing from this taxonomy is a social conception of identity. As a result, Schneider's list remains caught within the limits of bourgeois individualism. Either the self is a soul or some other kind of continuous psychological entity, or it is nothing but the reaction of cells to particular stimuli (perceptions). This dualism replays the tensions not only between the Lockean and Humean conceptions of identity, but between modernism and postmodernism, unity and fragmentation.

Under the influence of neuroscientific and postmodernist developments, the transhumanist discourse on identity has tended towards the "no-self" view exemplified by Derek Parfitt, for example in *Reasons and Persons* (Parfitt 1984). However, the end result of this circumscribed view of identity is – unsurprisingly, given the tight connections between transhumanism and high-technology capitalism – the erosion of any kind of collective project and of social relations themselves. Hughes writes that "if there is no real self and no real humanity then we are left with the question of whether we want to collectively pretend that we do exist, and if so, to what ends" (Hughes 2013, 232). This conclusion reinforces the bourgeois-liberal social theory that unless society is composed of atomistic individuals, then society cannot exist. In this way, transhuman discourse remains tightly bound to the atomism of social contract theory and libertarianism, and the no-self theory reinscribes the neoliberal fracturing of social relations themselves.

If a possible transhuman future did not do away with classes and class antagonisms, then it would necessitate a properly transhumanist Marxism. Such a Marxism would have to insist on the necessity of social relationships, as Marxism does now, in the face of the ideological insistence on pure individual agency. At no time in human history have there been individuals without collective existence. This notion, which Marx critiqued extensively in much of his work, privileges bourgeois individualism by denying the need for social relations themselves. As a result, a transindividual theory of identity, such as that proposed by autonomist Marxists, could serve to found a collective, post-capitalist vision of a transhumanist, non-alienated future, a Marxist transhumanism.

J.D. Bernal and the Compound Brain

In *The World, The Flesh, and the Devil* (1929), J.D. Bernal identified three arenas of human struggle: "the massive, unintelligent forces of nature" (the world), the human body, health and disease (the

flesh), and human "desires and fears … imaginations and stupidities" (the devil) (Bernal 1929, 4). For Bernal, overcoming the limits of the natural world conformed to a kind of Promethean productive-force determinism common to socialists of the period. Indeed, such determinism conforms to Bernal's (and Haldane's) orthodox Marxism, as noted above.

Bernal, though, also envisaged the liberation of humanity from the constraints of earth by the exploration and colonization of outer space through the construction of self-sustaining mechanical globes. For Bernal, such globes constitute the dream of a socialist future akin to the New World colonies of Robert Owen. Bernal writes that in his globes "there would probably be no more need for government than in a modern hotel: there would be a few restrictions concerned with the safety of the vessel and that would be all" (Bernal 1929, 11). We will see later how Virno's conception of the multitude aligns with Bernal's sense of these self-sustaining, non-hierarchical communities.

Liberation from the flesh poses a greater problem, in Bernal's view, than liberation from the world. Human beings have been altering the natural world through labour for millennia, and while Bernal recognizes that evolution has changed the human body, this process is too slow and undirected to liberate us from the necessity of the flesh. He contrasts the eugenic approach of J.B.S. Haldane with his own "direct approach" through the technological combination of the human organism and tools. Echoing Engels' essay "The Part Played by Labour in the Transition from Ape to Man" (1876), Bernal writes that "when the ape-ancestor first used a stone he was modifying his bodily structure by the inclusion of a foreign substance." However, tools and other external appliances are temporary and do not alter the requirements of the flesh itself.

> They all … have the quality of being outside the cell layers of the human body. The decisive step will come when we extend the foreign body into the actual structure of living matter. … Here we may proceed, not by allowing evolution to work the changes, but by copying and short-circuiting its methods. (Bernal 1929, 14)

However, Bernal foresees that the physical augmentation of human capability would require a corresponding augmentation in cognitive capacity. The development of a cognitive apparatus adequate for the new physical one, Bernal argues, constitutes a fundamental break in human development. The connection of brains by means of machinery would at first simply improve communications, but gradually "connections between two or more minds would tend to become a more and more permanent condition until they functioned as a dual or multiple organism" (Bernal 1929, 19). Bernal does not see this cognitive linkage as a threat to individuality: "the mind would preserve a certain individuality … each brain being chiefly occupied with its individual mental development and only communicating with others for some common purpose." Bernal subscribes to Locke's view of identity and argues that the "compound brain" would at least in some sense support "the continuity of the self" as "the memories and feelings of the older members [transfer] themselves almost completely to the common stock." Just as the Promethean conquest of the world overcomes the alienation of humanity from labour/nature, so the compound brain overcomes the individual subject's alienation from the collective. Bernal writes here in a vein of utopian ecstasy:

> The individual brain will feel itself part of the whole in a way that completely transcends the devotion of the most fanatical adherent of a religious sect. … Whatever the intensity of our feeling, however much we may strive to reach beyond ourselves or into another's mind, we are always barred by the limitations of our individuality. Here at least those barriers would be down: feeling would truly communicate itself, memories would be held in common, and yet in all this, identity and continuity of individual development would not be lost. It is possible, even probable, that the different individuals of a compound mind would not all have similar functions or even be of the same rank of importance. Division of labor would soon set in: to some minds might be delegated the task of ensuring the proper functioning of the others, some might specialize in sense reception and so on. Thus would grow up a hierarchy of minds that would be more truly a complex than a compound mind. (Bernal 1929, 19-20)

Bernal, too, is limited by a bourgeois-liberal conception of individuality and identity. The way to overcome the alienation of individuals is to bring them externally together until such time as they somehow become a single complex organism in which, nonetheless, individuality is not lost. Bernal remains beholden to the social-contract idea that individuals are primary, that they pre-exist social relations, choose to enter social relations, and that they can exist without social relations. The alienation that is a *result* of capitalist development is, as Marx notes in the 1857 "Introduction" included in the English edition of the *Grundrisse*, presented for ideological purposes as the original state of human life itself. The notebooks that make up the *Grundrisse* were not published in German until the late 1930s and in English until 1973 and it is interesting to read Bernal now, in the light the *Grundrisse* sheds on Marx's conception of technology, the future, and human knowledge.

The General Intellect and the Question of Labour

In the section of the *Grundrisse* known as the "fragment on machines" Marx appears to predict a transhumanist future in the context of his own critique of political economy. Instead of the subservience of machinery to human growth and development, Marx sees the entire assemblage of fixed capital developing into an "automatic system of machinery" (Marx 1973, 692) to which the human subject must be subordinated. The worker is an automaton who merely sets the machinery in motion. With the development of such systems labour ceases to be a human activity which uses tools, but instead becomes a system of production in which machinery performs the act of production and the worker only "supervises it and guards against interruptions" (Marx 1973, 692). Marx writes,

> It is the machine which possesses skill and strength in place of the worker, is itself the virtuoso, with a soul of its own in the mechanical laws acting through it. … The worker's activity, reduced to a mere abstraction of activity, is determined and regulated on all sides by the movement of the machinery, and not the opposite. (Marx 1973, 693)

This dystopia of machine labour, in which human activity becomes subordinated to the use of fixed capital in the production of value, seems a world away from Bernal's utopian view. But for Marx, the reduction of human labour power to the bare minimum has grave consequences for capitalist profitability itself. As we know from *Capital*, only human labour is capable of producing new value. All fixed capital can do is to transmit previously stored-up value into the commodity. As automatic systems of machinery take hold – as they have done, for example, in the current conjuncture of high-tech financial capitalism – human labour time, the measure of exchange value itself, is reduced to the minimum. However, "as soon as labour in the direct form has ceased to be the great well-spring of wealth, labour time ceases and must cease to be its measure, and hence exchange value [must cease to be the measure] of use value" (Marx 1973, 705). The very ability to produce surplus-value is thereby called into question and capitalist production and exchange themselves break down.

For Marx, this breakdown lays the groundwork for the emancipation of labour and the flourishing of human potential, and he describes

> The free development of individualities, and hence not the reduction of necessary labour time so as to posit surplus labour, but rather the general reduction of the necessary labour of society to a minimum, which then corresponds to the artistic, scientific, etc., development of the individuals in the time set free, and with the means created, for all of them. (Marx 1973, 706)

Once the breakdown occurs, fixed capital can go back to being a tool of human development, as it is with Bernal. But here Marx offers an important insight into the nature of technology. We already know from *Capital* that machinery is the embodiment or reification of human *physical* labour. But Marx suggests an awareness of technology as also the embodiment of cognitive and intellectual labour. Just as the microscope embodies theories of optics, lenses, etc., so too does the vast system of industrial machinery need to be understood as "the power of knowledge, objectified" (Marx 1973, 706). The development of fixed capital at every stage of economic development

"indicates to what degree general social knowledge has become a direct force of production and to what degree, hence, the conditions of the process of social life itself have come under the control of the general intellect and been transformed in accordance with it" (Marx 1973, 706).

The general intellect is an indication of one way in which human social relations of knowledge, understanding, and wisdom can provide a transindividual matrix for individuality itself. The embodiment of human knowledge in machinery determines who we are as individuals, and the conditions of production produce subjectivity itself. We can understand this embodiment as a particular kind of reification with specific affordances. In the *Critique of Dialectical Reason*, Sartre calls these reified objects and structures the "practico-inert," which Fredric Jameson describes as "matter which has been invested with human energy and which henceforth takes the place of and functions like human action." Jameson argues that while "the machine is of course the most basic symbol of this type of structure. … It is really only a physical symbol of it, and in concrete daily life the practico-inert most frequently takes the form of social institutions" (Jameson 1972, 244-245). This correspondence between machinery and social institutions, united by the concept of reification, is an important one to which we will return below.

Earlier in the *Grundrisse*, Marx notes that a human being is quite literally a political animal, "an animal which can individuate itself only in the midst of society" (Marx 1973, 84). This insight was hugely influential on Italian autonomist thought (see Dyer-Witheford 1999) and, combined with the encounter with Spinoza on the part of Antonio Negri, Paolo Virno, and others, provided the basis for a transindividual theory of identity which is extremely suggestive for a properly Marxist transhumanism.

The core of Marx's insight can perhaps be summed up in the following remark: "Production by an isolated individual outside society – a rare exception which may well occur when a civilized person in whom the social forces are already dynamically present is cast by accident into the wilderness – is as much of an absurdity as is the development of language without individuals living *together* and talking to each other" (Marx 1973, 84). We will see in the next section how questions of language and technology combine in Virno's work to offer us a powerful transindividual social theory.

Paolo Virno and the Word

The theories of identity and individuality mentioned above all assume that subjects are always-already individual. The only question is what constitutes their individuality. The pre-modern concept of soul has a divine origin, while the Lockean conception of individuality is tightly linked to the state of nature in social contract theory. Virno takes a completely different approach, one which does justice to Marx's claim that a subject "can only individuate itself in the midst of society." For Virno, the question is not what constitutes an individual subject out of nothingness, but what is the "principle of individuation" for a subject born into an existing structure of social relations.

Virno, born in 1952, was like Negri arrested and jailed in 1979 under suspicion of being connected to Italian left-wing terrorist groups. Also like Negri, Virno's encounter with Spinoza was highly influential on his work, especially *The Grammar of the Multitude* (2004; *Grammatica della moltitudine*, 2003). For both thinkers, the concept of the *multitudo* as it appears in Spinoza provided a communist social formation as an alternative to the state authoritarianism of the Soviet Union and China and the traditional working-class institutions, the Communist Party and the unions.[4] Distrust of these traditional institutions, the development of new social movements in the 1960s, and especially the uprisings of 1968 in the name of social justice and the liberation of desire, fit into the idea of workers' autonomy, the self-directed form-of-life of the working class independent of the strictures of capital that had developed in Italy since the 1950s. For autonomist Marxists, the irrepressible, self-determining constituent power of the multitude is an always present and vital force, and many of them have adopted the multitude as the conceptual apparatus most appropriate to this idea. Besides Virno's *Grammar of the Multitude*, Negri's *Insurgencies* (1999; *Il potere costituente*, 1992)

4 Negri has described the encounter with Spinoza in the 1960s by himself, Gilles Deleuze, Pierre Macherey, and others as "affirming democratic thought and … encouraging struggles open to the desire for happiness" (Negri 2020, vii). For an account of automatism and the extra-parliamentary left in Italy, see Wright (2002).

and Hardt and Negri's *Multitude* (2004) explore the concept most deeply.

In philosophical terms, the encounter with Spinoza gave both French and Italian thinkers a way to engage with process, development, and change without having to accept the teleological closure of the Hegelian dialectic. Spinoza's immanent account of the productivity of nature and of human beings' place within that totality provided a framework for a non-teleological, open-ended political theory which nonetheless avoided the pitfalls of the static logic and politics of liberal thought. The closed authoritarianism of parliament, political party, and union, as well as the anti-colonial uprisings of the 1950s and 1960s (and the work of anti-colonial critics of Hegelianism like Franz Fanon) forced autonomist Marxists to seek out an alternative to dialectical closure which they saw as deeply implicated in Promethean technological theories as well as oppressive imperial politics.

In *When the Word Becomes Flesh* (2015; *Quando il verbo si fa carne*, 2003), Virno explores the relationship of language to individuality, drawing mainly on the work of Ludwig Wittgenstein, child psychologist Donald Winnicott, and philosopher Gilbert Simondon. Simondon's philosophy of individuation, in particular, was highly influential on Virno's account (for an overview of Simondon's philosophy, see Bluemink 2020). Virno begins by offering an account of language adequate to a Spinozan social and political theory. Speech, Virno argues, is a performance, like playing an instrument, and in a very real sense, speech is the height of praxis. Virno writes:

> The way a cellist or dancer operates is neither strange nor marginal. It is, on the very contrary, the iconic recapitulation of all the characteristics that define human *praxis* in general. Contingency, instability, absence of purpose, inseparability between the 'product' and the actions that realize it, necessary institution of a public sphere [the audience]: all of these define ethical and political conduct. (Virno 2015, 23)

Human speech, Virno argues, is not work because language-use is not a tool to an external end; its end is immanent to itself: "verbal praxis is not dependent on extra-linguistic goals, just as a memorable piano *performance* is not dependent on the pianist's desire for riches" (Virno 2015, 25). Virno, drawing on Winnicott, argues that language is a "transitional phenomenon" like play itself. Winnicott described transitional phenomena as necessary for the child to accustom itself to an external reality that is not constructed to satisfy its needs. At first, whenever the infant needs something, the mother is there to change reality to conform to the need. The development of the individual personality – separate from the mother and separate from external reality – utilizes transitional objects and transitional phenomena in order to effect this individuation (Winnicott 1953). For Virno, language is the most widespread and important of these transitional phenomena, because language is "the biological organ of public [i.e., ethical and political] praxis" (Virno 2015, 32).

Virno links Winnicott's concept of transitional phenomena with Simondon's principle of individuation to argue that it is the fact of speech, the emergence of actual speech from an infant's nonsensical, babbling monologues (and therefore the emergence of a speaking subject) that individuates subjects from their social matrix. This supposes, in a manner foreign to the identity-theories of Kurzweil and others, a pre-individual set of relations out of which an individual is formed. Virno uses the "maternal language"[5] as a classic example of pre-individuality:

> It belongs to everyone and no one; it is a public and collective dimension. It shows with great clarity the preliminary sociality of the speaker. Egocentric language individuates (actually, it is the very principle of individuation) precisely because it allows us to detach ourselves from our language in the only possible way: emphasizing the generic ability to speak. … In the external monologue, the child behaves as a translator, not because he passes to a different natural-historical language, but because he or she becomes familiar with the precondition that makes such a passage possible: the partial detachment from the impersonal amniotic liquid of the maternal language and the manifestation

5 The gendered quality of the "mother tongue" is important here as Virno connects it with the "transitional objects" that mediate between the body of the newborn self and the body of another ("Winnicott thinks that the first transitional object coincides with the mother's breast") (Virno 2015, 145). However, there is no need to bind the notion of "mother" to a particular sex or biological essence; it is perhaps helpful to think of "mother" in this context as a non-gendered verb ("to mother") rather than as a gendered noun.

> of the linguistic faculty. It is thanks to that detachment and that ability that the speaker can achieve his or her own *individuation.* (Virno 2015, 65)

Virno's reliance on Wittgenstein's later philosophy is clear. For Wittgenstein, all language is inculcated into individuals by the social relations into which they are born. The relationship between words and things is not objectively necessary or natural but neither is it purely arbitrary. Rather, it is the result of historical, social, and cultural unfolding which produces language-games at a given moment and produces subjects who know the rules of those games.[6] Spinoza, Wittgenstein, Winnicott, and Simondon all fit together to support Virno's radically democratic, radically open political thought.

Reification, Technology, and Language

The problem with capitalist/accelerationist transhumanism is that, in striving to overcome alienation, it places the solution in external things, even if those external things are absorbed within the human body. As a result, transhumanism risks the fetishism that Marx describes in the early chapters of *Capital*: the technological modifications of the human body mistake problems of human social relations for problems of things themselves; new technologies, new organs, new bodies will somehow overcome the problems of social relationships. The dominant transhumanist discourse reinforces and reproduces capitalist structures of oppression by fetishizing the technology intended to liberate us.

In Marxist discourse, fetishism and reification are often treated interchangeably. Virno, however, draws a strict distinction between fetishism and reification proper. The first mystifies social relations by offering up a thing (commodity, technology) to take their place; the second is a real embodiment of subjective, social energy into a public, objective phenomenon. When Marx describes the general intellect embodied in a system of machinery, that is a concrete reification which may – depending on the social and political situation – also be fetishized. But the two processes are not the same, and Virno argues that we need a nuanced understanding of reification to fully comprehend the emancipatory potential of both language and technology.

Fetishism, as described in *Capital*, stands for a particular form of alienation: the objectification and externalization of subjective and social experience. Marx writes, "The mysterious character of the commodity-form consists … simply in the fact that the commodity reflects the social characteristics of men's own labour as objective characteristics of the products of labour themselves, as the socio-natural properties of these things" (Marx 1976, 164-5).

Compare this with the following passage from the *Economic and Philosophic Manuscripts* on the estrangement of labour:

> The object which labour produces – labour's product – confronts it as *something alien*, as a *power independent* of the producer. The product of labour is labour which has been embodied in an object, which has become material: it is the *objectification* of labour. Labour's realization is its objectification. Under these economic conditions this realization of labour appears as a *loss of realisation* for the workers; objectification as *loss of the object and bondage to it;* appropriation as *estrangement*, as *alienation.* (Marx 1977, 63)

If fetishization and reification are the same thing, reification is just as complicit in the process of alienation as fetishization is. And yet Virno makes the claim that "reification is the only antidote for the dispossession caused by alienation" (Virno 2015, 137). If the project of transhumanism is actually to overcome and abolish the alienation of capitalist society, rather than simply to reproduce it in a more technologically advanced form, then by Virno's logic we will need to embrace reification while avoiding fetishism:

> The difference between these two ways to satisfy the same need [to externalize subjective phenomena] is radical, as is the contrast between fetishism and reification as alternatives to alienation. If we don't understand this contrast and we assimilate the two terms to the point of treating them as synonyms, we will fatally end up defending from reification the alienated interiority just to keep fetishism at bay … I believe that a total reification of human nature … could stop the infinite proliferation of the fetish. (Virno 2015, 138)

6 Wittgenstein's later philosophy is deeply marked by his encounter with Marxist ideas through conversations with the economist Piero Sraffa (Sen 2003).

The difference between fetishism and reification can be understood in terms of the difference between the fetishized commodity and fixed capital. In the commodity, as we have seen, relations between people appear in the form of relations between things. The relations between people are mystified and obscured by this objectification: fetishism exacerbates alienation by cutting us off from our social relations. By contrast, fixed capital is the *real* objective and public form of cooperative labour and scientific knowledge. Rather than mystifying social relations, in Virno's view reified fixed capital makes the labour-capital relationship and the work and knowledge embodied in that relationship objective and therefore graspable, tractable, and transformable. It is in this sense that we can understand Virno's mention, which must appear utterly outlandish to an orthodox Marxist, of "the crucial role that reification could play in a truly unrepentant materialism" (Virno 2015, 135). We can anticipate, here, a possible conclusion: Bernal's compound brain is fetishized cognitive technology; Marx's general intellect is a properly reified set of social relations. Virno writes:

> Reification does not concern the people entering the relation, but the relation itself. This is what is manifested as *res*, as an array of objects and sensible phenomena. The relation among men, which can never be reduced to mental representation, is incarnated in the *objects of the relation.* This is very different from its fetishistic transformation in a *relation among objects*. Reification operates on the relation, fetishism on the participants. (Virno 2015, 143)

In Bernal's compound brain, communication, emotion, thoughts, all these remain individualized; the compound brain facilitates communication between already-constituted individuals. The general intellect, on the other hand, is an objective expression of pre- and transindividual relationships. This way of understanding the general intellect brings us to Virno's conception of language and technology as reification processes *par excellence*.

Drawing on Winnicott's perspectives on language and Simondon's on technology, Virno elaborates a concept of reification immediately suggestive for a Marxist transhumanism. According to this concept, reification acts on the idea of "among" (*il "tra"*), which Virno suggests is often overlooked in discussions of social relations. The "among"

> does not define a single individual, but precisely what, in each human animal, goes beyond the individual, pertains to the species and is shared by all before the emergence of the single "I." The "among" preceding individual consciousness appears as sensible *res*, and insofar as it becomes an external object, what precedes the "I" ceases to dominate it. (Virno 2015, 144)

Both language and technology, as pre-individual matrices of individual subjectivity, constitute this "among." In contrast to the conceptions of individuality dominant in capitalist theories of the transhuman, Virno's position sees social and natural relations – Bernal's "world" – as not constituted by already-individuated, already-constituted subjects, but as a preindividual and transindividual space, common and public. It is this sense of the pre- and transindividual that gives rise to individuality, whether through Winnicott's transitional objects or Simondon's principles of individuation, the most powerful of which are language and technology.

In order to avoid the technological fetishism inherent in capitalist transhumanism, we need to understand how technology can reify the "among," how it can stand as a principle of individuation.[7] For Simondon, the principle of individuation is never total. "The 'subject' transgresses the limits of the 'individual' because it contains a non-eliminable component, that is, a certain measure of undetermined pre-individual reality, unstable and yet full of potential" (Virno 2015, 146). The competing outcomes of the automatic system of technology underline this instability and potentiality; Nick Dyer-Witheford has remarked that in Marx's "fragment on machines" a bourgeois nightmare lives inside the bourgeois dream (Dyer-Witheford 1999, 4).

The preindividual, for Simondon, is never fully assimilated by the individual (as it must be in liberal social thought), but coexists with it, and thereby makes collective experience possible. The

7 In this way, the potential for what Maurizio Lazzarato has called "machinic subjection" can also be avoided. See Lazzarato (2012).

collective, transindividual experience arises out of the preindividual matrices of language and technology. Virno neatly sums up his view of reification in terms that resonate with the transhumanist imagination:

> The machine gives a spatio-temporal dimension to the collective, species-specific aspects of human thought. The preindividual reality present in the human subject, unable to find an adequate expression in the representations of the individual consciousness, is projected in the external world into systems of universally receivable signs, intelligent machines, logical schemes made *res*. We find again a crucial philosophical issue: thanks to technology, we can see what precedes the individual in the external world. (Virno 2015, 148).

It is precisely this concept of the preindividual that is lacking from the theories of identity pronounced by Kurzweil and Schneider. As a result, the transindividual capability of technology is blocked, and the transhuman is constrained to repeat the isolated, alienated individualism of bourgeois society. To put it in terms of the dialectic, Bernal's compound brain constitutes only an external relation between individual minds; the transindividual network of machinery under the rubric general intellect is a true internal set of interrelationships, a real "among."

Conclusion: Towards a Marxist Transhumanism

In order to "decouple [transhumanism] from its blindly capitalist trajectory" (Dyer-Witheford, Steinhoff and Kjøsen 2019, 161), three aspects need to be challenged. Firstly, transhumanism's individualism needs to be replaced with transindividualism, collective experience and action; secondly, transhumanism's fetishism of technology needs to be replaced by a reification of technology; and finally its legacy of eugenics and its reputation for the erasure of difference[8] needs to be squarely addressed.

A properly transindividual understanding of technology and the way it produces subjectivity can help us avoid the temptation of individualism and the resulting fetishism of technology. Only if we do that can capitalist alienation be overcome. However, this cannot remain a merely conceptual exercise. A Marxist transhumanist future would have to result from a real, material transformation of social relations. Accelerationism is not the answer: a transhuman Marxism must remain revolutionary. With technology as a reified "among" the technological component of a real collective revolutionary movement can be recuperated. Rather than fear contemporary fetishized technologies like artificial intelligence, currently used for surveillance and the reproduction of capitalist structures of oppression, reified technologies can be put to revolutionary purposes to build a transhuman future. This process, I think, helps to address the first two objections to capitalist transhumanism.

The question of difference is perhaps more difficult. We can see first-hand how difference is both repressed and subjugated under capitalism while at the same time celebrated and promoted in its consumerist and ideological modes. The legacy of eugenics and the attendant erasure of difference must be combated by a fully antiracist, antisexist, antiableist transhumanism. With this in mind we can conclude with a few remarks on the place of difference within Virno's conception of the multitude.

Virno argues that those who take the individual as a starting-point – like Bernal and Kurzweil, for example – are unable to see collectivity as anything but a threat to individuality. However, if – following Simondon – we understand individuality to emerge from the preindividual and to be constituted by transindividual relationships, then "contrary to what our deformed common sense might tell us, collective life is the opportunity for a further, more complex individuation" (Virno 2015, 234). The multitude, the social formation of the "many as many," irreducible to a singularity such as people, nation, or class,

> reaches its highest level in common action, in the plurality of voices and, finally, in the common sphere. Collectivity does not prevent or diminish individuation, but it continues it in a more powerful way. (Virno 2015, 234)

8 Transhumanism is often seen as celebrating difference through the flexible customization of human bodies, but I would suggest that when these differences are fetishized rather than reified then they serve to homogenize difference rather than celebrate it. Every tattooed person is tattooed even if every tattoo is different.

The oppressive hierarchies of race, gender, sexuality, and disability can only be properly challenged if we reject individualism in favour of "collective individuation" and the non-representative democracy of the multitude. It is here that Bernal's socialist prognosis – the outer-space globes with no need for government – has a chance of being realized. But this requires enshrining real difference within the reified structures of technology and difference not simply as a mental or linguistic exercise but through real social transformation. Virno concludes *When the Word Becomes Flesh* with a comment on the significance for democracy of real difference within the multitude:

> Since the collectivity is the stage for an emphasized singularization of experience, constituting the place where what is incommensurable and unique in every human life can express itself, nothing in it can be extrapolated or, even worse, "delegated." But let's be careful: the collectivity of the multitude, as individuation of the general intellect and the biological basis of the species, is the opposite of any form of naïve anarchism. … The collectivity of the multitude doesn't enter into any covenant, nor does it transfer its right to a sovereign, because it is composed of individuated singularities: the universal is not a promise but a premise. (Virno 2015, 236)

"The multitude doesn't enter into any covenant" is reminiscent of Audre Lorde's rejection of white feminist pluralism in "The Master's Tools Will Not Dismantle the Master's House." Lorde writes that

> advocating the mere tolerance of difference between women is the grossest reformism. It is a total denial of the creative function of difference in our lives. Difference must not merely be tolerated, but seen as a fund of necessary polarities between which our creativity can spark like a dialectic. Only then does the necessity for interdependency become unthreatening. Only within that interdependency of different strengths, acknowledged and equal, can the power to seek new ways of being in the world generate, as well as the courage and sustenance to act where there are no charters. (Lorde 1984, 111)

Capitalist transhumanism still sees the necessity for interdependency as a threat, valorizing the radical individuality of the cyborg even in the fetishized context of the hive mind or the compound brain. A properly Marxist transhumanism, founded on a properly transhumanist Marxism, can only be achieved through the radical transformation of social relations with a view to "acting where there are no charters" and the institution of the creative, unruly, irrepressible constituent power of the multitude itself. Only in this way can transhumanism's project of overcoming alienation in a form adequate to a just, sustainable, high-technology future be accomplished.

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A Marxist Transhumanism?

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ABSTRACT: Transhumanism is a philosophical, cultural and political revolutionary movement. It proposes a radical transformation of the human being and the society in which it develops. Transhumanism is revolutionary on a philosophical level because it collects ontological traditions of the past that posed this transformation, from British Marxist and non-Marxist left-wing thinkers of the 19th and 20th centuries to Soviet and Russian cosmism. But going further back one can find proto-transhumanist proposals from Christian theologians and Enlightenment philosophers. And it is revolutionary at a political level because it can be traced back to proto-transhumanist ideas in political revolutionaries of the past. The revolutionary doctrine par excellence of the 19th and 20th centuries is Marxism. Marxism also influenced certain transhumanists authors, although there are no transhumanist movements that claimed to be Marxist themselves, because none of them put into question capital as the basic social relation of capitalism. In the texts of Marx, Engels and Lenin there can be found proto-transhumanist ideas. Philosophical connections between Marxism and transhumanism are numerous. But beyond this, in this article we suggest that it is possible to develop a Marxist transhumanism movement that exceeds the actual individualistic and pro-capitalist prism on transhumanism. Also, we suggest transhumanism can serve to revitalize Marxist materialism in this 21st century and for the future. Marxist transhumanism would comply with the definition of communism of Marx and Engels, and it could even be said that Marxism is, essentially, transhumanist in its foundations, even when it defines posthumans as New Men, or Men Made In Property. And it could even be said that transhumanism is, in essence, Marxist. In this article, we present a historical cartography of inherent class relations in techno-scientific development and try to show the ideological impact that these relations made on transhumanists. We describe actual transhumanism as transcapitalism, and analyze its theoretical influences, proposing a theoretical itinerary for Marxist transhumanism, from Marx to more contemporary authors that would pave its political and philosophical roots. In addition, we define transcapitalism as BTA-Politics – biopolitics, thanatopolitics and anatomopolitics – in the sense of Michel Foucault. Finally, we propose that it is precisely the inherent contradictions of current Transcapitalism that set the paths for the construction of Marxist transhumanism.

KEYWORDS: Transhumanism, Marxism, biopolitics, capitalism, communism.

Introduction

On May, 25 to 27, 2016, the 8th Beyond Humanism Conference was held, in Spain, at the Complutense University of Madrid's College of Philosophy. The conference´s subtitle was "Posthuman Studies and Technologies of Control." This international transhumanist and posthumanist congress is organized every year by Metabody, a postmodernist pan-European organization managed by Spanish contemporary artist, musician and writer, Mr. Jaime Del Val.

Every year, a huge number of philosophers, sociologist, media artists, etc., from all around the globe, join together to offer their own ideas about the problems of the use of high technologies with sophisticated scientific advances on many fields on contemporary societies. And everyone tries to bring "solutions" to those problems. But not everyone has the same intellectual background, and this is the most important reason for the plurality of their efforts. But, mainly, the vast majority of the solutions to the problems of the unstable relations between *human nature*, the development of societies and the spectacular techno-scientific development in recent years, were ethical and moral solutions based on individualist ontological foundations. Most transhumanists and post-humanists

theoreticians are defenders of individualist and subjectivist philosophical postulates. And when these people try to connect their transhumanist and posthumanist views with politics, economic theories and political philosophies, also the vast majority of their proposals follow the ideological range that goes from libertarianism to liberalism (in the North-American meaning, European contemporary social-democracy or labourism in the United Kingdom), or even more, some offer transhumanism from a religious point of view (Christianism, Islam, Mormonism and Buddhism are some of the known religious fields that have been mixed with transhumanism at some point) (Hughes 2004). In an economic theory sense, many transhumanists are following Austrian economics, monetarism, agorism, Keynesian-Neokeynesian-Postkeynesian economics, collaborative economics, and so forth. (Hughes 2002). But all those efforts, all those proposals, have one thing in common: they don't question capital as a social relation between people in political societies.

Why does this matter? When a religious, political and/or economic ideology doesn't question capital as the fundamental social relation in capitalism, as the basis of capitalist mode of production, this ideology cannot analyze, for example, economic crisis as an essential phenomenon for the recurrent rotation of the capitalist economic system. Because those ideologies understand economic crisis as a result of wrong decisions on economic policies: problems of monetary expansion, liquidity problems, problems arising from the monetary monopoly of State Central Banks, problems arising from budget balances, problems arising from the excess of State control of markets or, on the other hand, arising from the lack of State control of markets, and so on. Every single school of economics, from Austrian to neoclassical, believes that crisis could be stopped if their recommendations were taken seriously. But none of those schools understand economic crisis as an essential historical phenomenon of the capitalist mode of production. And what does this have to do with contemporary transhumanism? Most transhumanists think that the derived problems of resource allocation in the economic field, also the technological and scientific resources for everyone, depend on the implementation of the cited economic actions. So, for them, transhumanists have nothing to say about capital as a social relation and try to defend that their most beloved ideas could be implemented following the "invisible hand" of markets or, if market problems should be solved with some regulation, those must follow liberal Keynesian points. Or, even, only political development of religious ethics, or laicist ethics as the theory of justice by late John Rawls (Bailey 2009). In short, the transhumanist agenda could avoid the imbalances arising from the economic crisis following the recommendations of Neoclassical – or Austrian – economics.

These points of view were the vast majority of the speakers at the 8th Beyond Humanism Conference too, an illustrative symptom of what the so-called international transhumanist movement advocates in our times. However, some conservative analysts noticed some connections between transhumanism and Marxism, but as something pejorative, as we will see below. On the other hand, some progressive transhumanists established those connections in positive way. As we said at the Conference, and as we are going to develop in this essay, the strong connections between transhumanism and Marx's historical materialism could allow us to defend the argument that if transhumanists want to carry out their plans to their last consequences, they must embrace Marxism. Because transhumanism, until now, is only another ideology that justifies capitalist social order and the unequal appropriation and development of productive forces. Thanks to the amazing advances in science and technology, everything can be transformed into productive forces, even humans. Transhumanism focuses on that, also Marxism. So we propose transhumanist Marxism would be the definitive transhumanist proposal, and also the ultimate Marxist battlefield.

State of the Art of Transcapitalism: The Search for Immortality of the Great Bourgeoisie

In 2002 Peter Thiel, founder of PayPal, sold his company to eBay for US $1.5 billion (Ayuso 2016a). Since then, he has dedicated himself to several investment funds with a single aim: to avoid death. He is not an isolated case. Like many of his contemporary bourgeois, Thiel invests huge amounts of his capital in anti-aging industry. According to Global Industry

Analysts (Global Industry Analysts 2016), anti-aging businesses move nearly €60 billion per year, despite the fact that many of their products are even intangible and unsaleable. Thiel, and others, think that the advances of biotechnology will be an unprecedented revolution in the History of Mankind. In his own words: "It is possible, and necessary, to eradicate aging, or even death." These capitalists invest hundreds of millions of dollars in anti-aging companies with the hope that they might reconstruct, regenerate and reprogram vital organs of the human body, and even the DNA, in order to live better and longer.

The following news is thus perhaps not surprising. Italian surgeon, Sergio Canavero, is planning the world's first head transplant – in reality, first body transplant – reanimating human corpses. He told the *Daily Mail* (Naish 2016) that many elder capitalists and trillionaires phoned him interested in being his patients. Achieving immortality is an obsession for many capitalists, and hence the money that investment funds invest in people like Canavero.

Another example. Dimitry Itskov, bourgeois founder of New Media Stars and the 2045 Initiative, in order to implement *cybernetic immortality*, is planning to create cyborgs that could store human consciousness after organic death and allow "living" without biological lashings. Itskov, as Thiel, is convinced that "it is possible and necessary to eliminate aging or, even, death, as well as to exceed the limits currently set out by the restrictions of the physical body" (Ayuso 2016a). Like Thiel and Itskov, Larry Ellison, founder of software company Oracle Corporation, has donated more than US$4 billion to research on anti-aging. What he wants is to avoid his own death, because he really believes death could be avoided. Another *Transcapitalist* (the mainstream transhumanist ideology) is Bill Maris, neurologist and founder and ex-CEO of GV, first known as Google Ventures, specialising in funding high technology companies. He invests more than US$4 billion per year on anti-aging. Since 2014, GV investment in health business increases 135 per cent. Maris' bedside book is *The Singularity is Near: When Humans Transcend Biology*, by Ray Kurzweil (Kurzweil 2006), co-founder of Silicon Valley's Singularity University and one of the best-known transhumanist thinkers. Kurzweil is followed by Maris, Ellison, Itskov and Thiel. For Kurzweil – and, in this, Itskov follows Kurzweil to the letter – around 2045 the capacity of computers will surpass human brains, and the only way we could overcome that critical moment is to improve our human biology. The Singularity University's individualistic and neoliberal philosophy can be seen on its official webpage, where Peter Diamandis is quoted: "Creating abundance is not about creating a life of luxury for everybody on this planet; it's about creating a life of possibility."

Diamandis, author of some transhumanist books (Diamandis and Kotler 2012), is also, founder of nonprofit technological development organization the X Prize Foundation, co-founder and executive chairman of Singularity University, vice-chairman and cofounder, with pioneer of DNA decoding Craig Venter, of Human Longevity Inc., ex- CEO of Zero Gravity Corporation, vice chairman of Space Adventures Ltd., co-founder of asteroid mining Company Planetary Resources and co-founder of International Space University, whose Chancellor is astronaut Buzz Aldrin. As Spanish Marxist economist Diego Guerrero has said: "If some day, in the future, capitalists could dominate the Moon or other planets, powerful interplanetary associations of capitalists would exist" (Guerrero 2010).

For Kurzweil, as the ideologist of transcapitalism, the investment of huge amounts of money by futurist bourgeois visionaries will allow a tremendous technological advance that improves physical, intellectual, psychological and, even, *spiritual* human capacities. So the human of the future, and the future transhuman persons – for them, the next step of Mankind, if the transhumanist agenda would be implemented from their ideological worldview – will have a younger appearance, smarter, stronger and better than us. The bourgeoisie, embracing transhumanism, could be free of biological limitations, because they're not simple mortals. So they need to control and expand the development of synthetic biology and neuroscience. That is the reason why Diamandis, Maris, Ellison, Itskov, Thiel and others, like Elon Musk, a physician, inventor, investor and co-founder of PayPal, Space-X, Tesla Inc. and OpenAI (former economic adviser of the 45th President of the United States of America, Donald Trump) are investing in Kurzweil, Canavero and other start-ups, initiatives and companies that

want to "change the World." As a social class in relation with means of production, the bourgeoisie now needs to live long enough not to die.

Every day there are more biotech companies. They spend a lot of time and money in risky investments. They have agreements with companies specialized in clinical trials and pharmaceutical companies. But it is not a question of investments to see results in the short term. Could we see those libertarian bourgeois as the definitive philanthropists of the twenty-first century? While another bourgeois, Bill Gates, focuses his philanthropic efforts on offsetting, in part, the health conditions of people in developing countries, the Transcapitalists do something else in connection with the neo-liberal extreme individualism that reigns today, specially in the so-called "Western World": seek to improve their own lives to levels only imagined in earlier periods of history. Silicon Valley bourgeoisie are more focused on becoming immortal than on fighting hunger, epidemics, the absolute and relative poverty or social inequalities of the planet. Even more, they deepen it. And they don't think about a better technological and scientific development. They want a faster development, focused on individualist philosophies. Sean Parker, co-founder of Napster, suffers from a terminal autoimmune food disease. That is the reason why he invests millions of US dollars in research fields about his disease.

Such investors are reflected in Ridley Scott's 2012 film *Prometheus*, in which billionaire Peter Weyland is shown as the founder and CEO of Weyland Corporation, which recurs in the *Alien* series' universe. Portrayed by Australian actor Guy Pearce, the elder Weyland funds scientific expeditions across space in order to find the Engineers, a very developed alien civilization, only in order to ask them to extend his life-span.

For bioethics professor at Northwestern University, Laurie Zoloth, and for the director of Gerontology at Harvard Medical School, Preston Estep III, Transcapitalist investment is based, not only in egoism and individualism, but also on pseudosciences that scientists can't take seriously (Ayuso 2016a). Probably, Transcapitalists think that their investments will be allowed to all mankind in the future, after they avoid their own biological death. But the main reason behind this belief is the same we discussed above: the allocation of resources on the economic field is entrusted to institutions that do not question capital as the basic social relation of production. It means that transhumanism, for them, is the coherent ideology of the next step of capitalism. And it is even coherent with capitalism itself.

Political Power and Transcapitalism

The investment operations of great companies on anti-aging and anti-death research programs have multiplied over the years. And, of course, the interweaving between capital movements in this field and political and military power has increased. One year after the 8th Beyond Humanism Conference, in Madrid, David Roberts gave a speech to the Rafael del Pino Foundation, a non-profit private organization dedicated to promoting the formation of company leadership, entrepreneurship, improvement of health and life conditions of Spanish citizens, knowledge of the history of Spain and the protection of its national heritage and to drive and promote individual initiatives on business and on civil society, the principles of free market, free business and free companies (Ayuso 2016b). Roberts was a special agent of the Intelligence service and honoured officer of the United States Army. Now he is the vice-president of the Singularity University and one of the ideologists of Silicon Valley's transcapitalism, future social tendencies guru and expert on *Disruptive Technologies*, those technologies that allow radical changes of productive processes in companies. These are, in summary, the technologies that Marx studied in *Capital* – Machinery, Great Industry – applied to transform agriculture, cattle raising, feeding and human biology itself (Marx 2013, 261-357).

Roberts focuses his recent research and studies not only on the mentioned *Disruptive Technologies*, but also on education and health. The mission of the Singularity University, in his own words, is to make the world a better place for everyone, following the governmental rationality of (neo)liberalism as Foucault said:

> This, it seems to me, is what characterizes liberal rationality: how to model government, the art of government, how to [find] the principle of rationalization of the art of government on the rational behavior of those who are governed. (Foucault 1979, 312)

Neoliberalism understands governmental rationality and individual rational behaviour with the same basis, and always considers rational behaviour the same way Max Weber understands marginal utility theory, beyond its relation with Weber-Fechner laws of psychophysics, related in the nineteenth century to magnetism and phrenology, and used today to explain the increasing levels of public expenditures:

> Marginal utility theory, in order to attain specific objects of knowledge, treats human action as if it ran its course from beginning to end under the control of *commercial calculation* –a calculation set up on the basis of *all* conditions that need to be considered. It treats individual "needs" and the goods available (or to be produced or to be exchanged) for their satisfaction as mathematically calculable "sums" and "amounts" in a continuous process of bookkeeping. It treats man as an agent who constantly carries on "economic enterprise," and it treats his life as the object of his "enterprise" controlled according to calculation. The outlook involved in commercial bookkeeping is, if anything, the starting point of the constructions of marginal utility theory. Now, does its procedures rest upon the Weberian-[Fechnerian] law? Is it an application of any propositions concerning the relationship of "stimulus" and "sensation"? For its purposes, marginal utility theory treats the "psyche" of all men (conceived of as isolated entities and regardless of whether they are involved in buying and selling) as a *merchant's soul*, which can assess quantitatively the "intensity" of its needs as well as the available means of their satisfaction. It is in this way the theory attains to its theoretical constructions. But all this is certainly *opposite* to the procedure of any "psychology"! (Weber 1975, 31-32)

Following these individualistic philosophical roots, Roberts, Kurzweil and others at the Singularity University want to solve what they called the "Global Grand Challenges," which are the following:

1. Feeding the growing world population;
2. Bringing education to all corners of the Planet;
3. Ensuring access to potable water throughout the world;
4. Monitoring global security;
5. Ensuring basic health services;
6. Promoting a sustainable access to energy;
7. Caretaking of environment;
8. Putting an end to poverty.

Of course, these are approached always from the perspective of corporations and executives and/or startups and entrepreneurs. Speaking to the Rafael del Pino Foundation, Roberts assured that those "Global Grand Challenges" will be resolved in the next twenty years, following the Transcapitalist agenda of the Singularity University. How? Creating interesting and innovative technology companies that make money, that could resolve any of those "Grand Challenges," because those "Challenges" are Huge Markets.

According to Roberts, the end of poverty and illiteracy will help to adjust the global demography to a population growth of zero, as it already is the case in western capitalist democracies. And this will be achieved because billions of people will connect to the Internet in the next two decades. And for Roberts, billions of people connected to the Internet represent billions of new business ideas, and billions of new buyers of those ideas. This will make the universities unusable, except for those who want to educate themselves by paying large sums of money. The Massachusetts Institute of Technology (MIT) has already put online all their subjects of teaching. And in several capitalist countries the children of working class families have seen how university fees have tripled, as in Spain since 2012. Roberts believes that initiatives such as Udacity, a company specializing in Massive Open Online Courses (MOOC), that is to say, *microundergraduate programs*, that will be sufficient to form "high quality workers." This new Transcapitalist international division of labour requires *more specific learning than academic formation*, which will be a luxury. University learning is already expired by the time of graduation, according to Roberts. And therefore, the academy, in the Platonic sense of the term, has its days numbered for free and open access to the majority.

Roberts has very much in mind the meaning of the development of the productive forces on a historical level. According to Moore's Law, by Intel-Inside cofounder Gordon Moore, every two years the number of microchips on computers are doubling their number and capacity. Roberts applies Moore's Law also to diodes, valves, and in fields like biotechnology and synthetic biology, the design of biological systems that

don't exist in nature but will have functions as micro-computers. The development of productive forces in the post-Fordist production model interweaves integrally with Moore's Law applied to every techno-scientific research project:

> Flexible accumulation doubles as a synonym for post-Fordism and there are flexible workgroups, flexible manufacturing systems, flexible work schedules, and flexible market responses. The burst of innovation spurred by the high-technology boom in the late twentieth century and the parallel explosion of communications and media resulted in a volatile market environment. Technology competition keyed a circuit of almost instantaneous obsolescence in all things digitally electronic. The master commodity here was the computer chips. As firms raced to produce faster chips, each generation of proprietary chips was eclipsed at a rate that approximated Moore's Law – the prediction by Intel's co-founder Gordon Moore that the number of transistor on each chip would double every two years, and with that doubling would come exponential increases in computing power. A proprietary chip, under the conditions of intellectual property law, remained the exclusive domain of the company that introduced it for a limited time. When the protection ends, the proprietary chip becomes a commodity and profit margins erode dramatically as competitors copy the design. Proprietary chips drove higher stock prices while commodity chips drove commodity prices down and ushered in wider patterns of consumer adoption. The integrated circuit of production technologies and licensing agreements drove a dialectic of adoption and obsolescence. The promise of budding consumer markets drove stock prices higher while the actualization of consumer adoption could never sustain growth rates for long. From the marketing side the explosion of sign values attached to short-lived digital commodities created a clutter that posed a major hurdle for advertisers. (Goldman and Papson 2013, 36)

The same processes would be applied in other techno-scientific fields, following Roberts. For example, when Craig Venter and Peter Diamandis, of Human Longevity Inc., decoded DNA, it cost more than US$500 million. In 2017, it cost no more than US$800, and its costs of production will be less and less expensive through the years. If we could impress DNA with 4D-Printers – allowing the impression of auto-transforming objects – biotechnology and synthetic biology companies would expand their capital and their businesses more than actual computer, pharmacy or neuroscience companies, interweaving all these industries creating new interdisciplinary companies. This is the basis of transcapitalism: capital as the engine of the merger between biological life and technology. The *photoshopping* of life, that will allow us to write, copy, and edit our own DNA to make older-younger human beings or to paste it in other places, to impress virus's DNA to study its properties in order to cure diseases, and to copy and edit seaweed DNA and put it into a cat's DNA, making it glowing in the dark. Or, even, use seaweed DNA properties to change city lightning from electricity to powerful bioluminescence. As Marx and Engels said:

> The bourgeoisie cannot exist without constantly revolutionising the instruments of production, and thereby the relations of production, and with them the whole relations of society. Conservation of the old modes of production in unaltered form, was, on the contrary, the first condition of existence for all earlier industrial classes. Constant revolutionising of production, uninterrupted disturbance of all social conditions, everlasting uncertainty and agitation distinguish the bourgeois epoch from all earlier ones. All fixed, fast-frozen relations, with their train of ancient and venerable prejudices and opinions, are swept away, all new-formed ones become antiquated before they can ossify. All that is solid melts into air, all that is holy is profaned, and man is at last compelled to face with sober senses his real conditions of life, and his relations with his kind. (Marx and Engels 1848, 16)

When we mentioned above the business opportunities Roberts has seen in the universal expansion of the Internet to everyone, the meaning of his hope for the worldwide expansion of the Internet is based, of course, on capital as the basic social relation of production of capitalism. People living in absolute poverty, on Roberts' futurology, will leave this situation thanks to virtual reality, synthetic biology, etc. The social division of labour, and therefore, social classes, won't disappear, but the Third World will leave absolute poverty thanks to the increase of political power and

wealth that Transcapitalism will ensure to the Great Bourgeoisie. In spite of this, for Roberts, technology can benefit everyone, as long as it is something decided as a species. But, who can lead a species that is divided into classes, states, professional labour, gender, or religion? Those who have economic and political power, and the easiest access to the techno-scientific benefits of Transcapitalism. This can be seen in Neil Blomkamp's 2013 film *Elysium*, which shows a state-class struggle between a Space Station-State called Elysium, populated and governed by transhumans, and an overpopulated Earth, with a vast majority of mortal cyborg proletarians.

Roberts wants to avoid poverty, but he wants to do it, in fact, following an idea for eradication of poverty which was already discussed by, among others, Michel Foucault:

> I think we should make a few remarks about absolute poverty. It should not be understood, of course, as a sort of threshold valid for the whole of humanity. Absolute poverty is relative for every society, and there are societies which will have a fairly high threshold of absolute poverty and other, poor societies where it will be much lower. So, the threshold of absolute poverty is relative. Second, and this is an important consequence, you can see that this reintroduces that category of the poor and of poverty that all social policies, certainly since Liberation, but in reality all the policies of welfare, all the more or less socializing or socialized policies since the end of the nineteenth century, tried to get rid of. All these policies – the German state socialist type of policy, a welfare policy like that programmed by Pigou, the New Deal policy, and social policy like that in England or France after Liberation – did not want to know the category of the poor, or, at any rate, they wanted to ensure that economic interventions were such that the population was not divided between the poor and the less poor. Policy was always situated in the spread of relative poverty, in the redistribution of incomes, in the play of the gap between richer and poorer. Here, however, we have a policy defining a given threshold which is still relative, but which is absolute for the society and which distinguishes between the poor and those who are not poor, between those who are receiving assistance and those who are not. (Foucault 1979, 205-206)

Foucault defined the governmental neoliberal rationality as *biopolitics*, and the one prior to neoliberalism as *thanatopolitics*. Before the eighteenth century, Focault explained, the *anatomopolitics*, based on the human body itself, changed into *thanatopolitics* in the nineteenth century, throughout classical liberalism, the colonial expansion of the United Kingdom, United States of America, France, Belgium, and Germany, and the popularization of eugenics and social Darwinism. The turning point of *thanatopolitics* happened in Germany, 14 July 1933, when the German National Socialist parliament passed the Law for the Prevention of Hereditary Diseases. As a technical device of political power, *biopolitics* came into the twentieth century with an essential difference with respect to *anatomopolitics* and *thanatopolitics*:

> This new technique of disciplinary power does not apply to the lives of the men and, even, is intended, so to speak, not man/body but to the living man, the man living being; in the limit, if they prefer, the man/species. (Foucault 1976, 208)

Contemporary transhumanism, in the specific sense, Transcapitalism, is, at the same time: 1) *biopolitics*, a disciplinary technique of the human species; 2) *thanatopolitics*, which ends with the individual human being and its specificity, not killing him or her, but transforming it into an alleged superior species; 3) and also *anatomopolitics*, which manages the human body in an individualized manner by means of the "invisible hand" of the capitalist market. The contradictions of Transcapitalism are the same that Marx and Engels pointed out on the capitalist mode of production, with the addition of the *bio-thanato-anatomo-political* dimensions (*BTA-Politics*, for short) that techno-scientific progress has entailed. That is what Foucault noticed. But the political implications of transcapitalism are not only these.

Prestigious universities such as Cambridge, Oxford or MIT, have created specialized departments in "existential risks." Cambridge has a department called the Centre For Study of Existential Risks, co-founded by Estonian physicist and programmer Jann Tallinn, also co-founder of Skype, one of the creators of FastTrack/Kazaa P2P protocol, and also co-founder of MetaMed, a company specialized in personalized medical research

services. MetaMed was co-founded, along with Tallinn, by Michael Vassar, ex member of Singularity University. Jann Tallinn is also founder of the Future of Life Institute at Oxford University, with members such as the previously mentioned Elon Musk, North American actors Alan Alda and Morgan Freeman, British physician Stephen Hawking, and Swedish transhumanist philosopher at Oxford University Nick Böstrom, among others. The mission of these centers is to anticipate situations to which the technology can take us in the coming decades, trying to avoid what they understand as *wrong ways*. Their main concerns are Artificial Intelligence, nanotechnology and bioengineering. And they are concerned that the improper development of the same could put in question the established order up to the human species itself. They are, therefore, BTA-Political think tanks. That is to say, Transcapitalist think-tanks. Tallinn has invested in both institutes over US$2 million.

A very influential book on these BTA-Political think tanks is Bostrom's *Superintelligence: Paths, Dangers, Strategies* (Bostrom 2014). In this book, Bostrom warns about the danger that AI could surpass human intelligence, turning itself into the dominant species on Earth, causing even our extinction. There is no way back in this techno-scientific development, and everything depends on the political-economic domain of the AI. And not only on it, but also on issues such as bioterrorism, climate change, etc. Apart from Tallinn's investments, these BTA-Political think tanks receive annual investments of over US$4 million, coming from both public and private sources.

Alienation and Transcapitalism

Nevertheless the BTA-Politics of Transcapitalism only focuses on issues that put in danger human species in its relation to the improvement and care of the individualized bodies and existential risks in our biosphere. Transcapitalism never questions the socio-economic order that would allow, according to them, the nurture and improvement of individualized bodies that make up the human species. But it always questions all that doubt of the socio-economic and BTA-Political order, which is equivalent for it, to doubting the future of the human species. Here lies the importance of the utopian speeches on the science of tomorrow and the civilization of the *Übermensch* for the neo-liberal society, a misunderstood *Carpe Diem* (Echarte Alonso 2012, 37-51). BTA-Politics are effective strategies to control human actions related to the Marxist term, alienation. Not only in Hegel's and Marx's sense of alienation, as *Entfremdung* (estrangement) and *Entäuserung* (expropriation) of the human being through the enhancement of value through the capital, but also in Foucault's sense, social alienation as a condition of mental alienation in the Late-modern Period (Samuel Huntingon's Great Divergence period, from the nineteenth century till now), or what the Spanish Marxist philosopher Gustavo Bueno called *Floating Individuals*, the product of the acute crisis of the connection between the individual purposes and plans or programs of the Society (Bueno 1981, 12-39). Floating individuals in a Transcapitalist age, victims of the new habits of consumption of the psychopharmacological society and its generation of passivity, are not matters for BTA-Political think tanks.

The identity of human nature cannot be adversely affected by a technological change of the body. Not even by technology itself. We can operate on ourselves, something shown by the historical evolution of our societies and our socio-cultural habits. The same is true for the improvement of the body, such as medicine has historically shown. Our body participates actively in the reception of modifications, this being the essence of both the idea of *homo faber* and the idea of Aristotle's *zoon politikon*. The central nervous system is plastic, that is true. The configuration of the brains of different people is not the same at all. But that does not imply that the human brain is a *tabula rasa* that allows us to do everything with (and on) it. Yet this is what Transcapitalists think, in aiming to make every little atom of our body a productive force. Because in Transcapitalism, as the actual phase of the capitalist system, and coherent with Marx's analysis, everything that can be manipulated by men, from quantum foam to large sets of antimatter in the observable universe, are potential productive forces. And in a philosophical materialistic sense, to manipulate is to operate, and the observation of a phenomenon and its classification in a scientific discipline is already an operation (Bueno 2013). Here lies the great power, and the great danger, of the Transcapitalist phase in which we have entered.

The offered options of individual depersonalization in transcapitalism are varied, and as important as surrogate pregnancy, organ trade or human trafficking. An example:

> Imagine a person who has been offered five million euros with the condition that, forgetting who he was, he should adopt a new personality, a new family, a few new habits. Who would accept the treatment? The offer may be even more radical: what if the money is in exchange for a transformation that clear limits that make us belong to the human species? (Echarte Alonso 2012, 40)

In this particular case, this *negative eugenics* would happen when someone, considering himself or herself less suitable, agrees to destroy himself or herself because of that. However, at the same time, it is a case of *positive eugenics*, because this process allows the emergence of someone, or *something*, considered by himself or herself, or by society, by capital and/or by state, more suitable. So:

> Self-eugenics commits who is [for nothing, or for money] destroyed to favor the advent of someone better, which does not yet exist and that will never be known (Echarte Alonso 2012, 40).

The problem with the BTA-Politics of transcapitalism is that they want not only to improve mankind using science and technology. Not all manipulation of nature is a manipulation of the identity of mankind. The point is that the BTA-Politics of transcapitalism will create a minority of very economic and political powerful beings, proud of their way of living, apart from the rest of human beings with less improvements, only developed to maintain capitalist property appropriation, capitalist division of labour, capital as the basic social relation of production of capitalism and, last but not least, to maintain them, us, as floating individuals with cyborg implants. It is easier, for Transcapitalist thinkers, to take a pill, or to have a robotic new arm installed, than to leave a job or a habit harmful to oneself or others. And it would also be easier to robotize or cyborgize productive processes of the relations of production before suffering strikes. Marx was not an enemy of robotization, as we will see later, but he never stood for it in the sense in which it would be defended by the Great Bourgeoisie. Therefore, one of the tasks to undertake is to expose the charlatans of the Transcapitalist *scientific fundamentalism*, those who believe that science will solve all the problems of mankind – even sexual problems (Preciado 2008, 20-90), without ever questioning capital. This is because the BTA-Politics of transcapitalism reduces human life to nature, something as dangerous as reducing human life to culture, like certain postmodern schools in the social sciences and humanities do. We are both nature and culture, and the disjunction between the two, functional as abstraction, is fictional in reality.

Variable Capital on Transcapitalism

The body transplantation proposed by Sergio Canavero, cited above, is not the only example of the renewal of variable capital in Transcapitalism. In 2015, Oskar Aszmann, at the Medical School of the University of Vienna, cut off unused members of some patients to replace them with new bionic members. These bionic arms are connected to the muscles and allow the cyborgs the opening and closing of their new hands just by thinking about it. The new arm is already operational six weeks after the implant. Although some colleagues of Aszmann think that there should be alternative ways to recover and repair biological tissues, even malformed or destroyed in an accident, the voluntary amputation that Aszmann offers seems to be the best alternative for patients, because they prefer to end years of unnecessary surgeries that end up leaving them as they were (Aszmann *et al*. 2015, 2183-2189).

This type of renovation is not confined to the motor operation of individuals. Spanish neurosurgeon at San Carlos Clinic Hospital in Madrid, Juan Antonio Barcia, and Spanish neuropsychologist Paola Rivera, have applied a new technique in five patients with brain tumours with which they have moved brain functions from one place of the brain to another, in order to operate and remove a higher percentage of tumour tissues. The doctors intervene at first to see how much of the tumour can be removed, and then place a blanket of subdural level electrodes in the areas where it can affect brain functions. In the following three or four weeks they implement a progressive process in which the blanket produces electric shocks of artificially increasing intensity to virtually override the

function, allowing the brain to transfer this function to adjacent areas. Through intensive rehabilitation, the patient exercises continuously that function, and returns to the same functional capacity. Only this time, the function has moved to new areas of the brain and groups of neurons not affected by the tumour. Once this is done, the surgeon can return to operate and remove the affected area, which no longer deals with its natural functions. The idea occurred to Barcia and Rivera by observing the effects of the tumour itself on brain plasticity in patients. For example, when cancer damages brain areas for speech, scientists observe how the adjacent areas are assuming these functions as they move the damage. This process shows that the brain's primary areas are not predetermined. Ergo the interweaving between brain areas is quite plastic (Barcia *et al*. 2016, 1-11).

Of course, these types of medical advancements have an undeniable ethical and moral connotation of perpetuation and improvement of the quality of life of individuals. But in Transcapitalism and its BTA-Politics, these advancements are associated with the social division of labour, the private ownership of the means of production and the relationship of these with the prolongation of life. The constant renewal of the productive forces, as we have defined above, requires the constant renewal of the labour force and of the reserve army of labour. This renewal is no longer just generational, through new births or through migration, but also through the improvement of the physical, psychological and biological abilities and properties of the cyborg worker, which can be cured of a brain tumour by moving the plastic brain functions at the same time he or she has deployed a new bionic arm. This includes, as a parallel process and interwoven with it, the perpetuation of biological life through the merger of cyborg-human DNA with animal or vegetable DNA, such as that of the Greenland boreal shark, the most long-lived vertebrate of the planet, with a life expectancy of up to 400 years (Nielsen *et al*. 2016, 702-704). Or maybe DNA for plants such as llareta, a very dense shrub relative of the parsley that lives in the Atacama Desert, in Chile, for up to 3000 years. Or maybe bacterium like Siberian Actinobacteria, the oldest organism on Earth, that for some 500,000 years has been constantly repairing its DNA while living under permafrost (Willerslev *et al*. 2004, 9-10). Or maybe copying and editing human DNA with parts of the DNA of very elder and endurable animals, such as the American lobster that can live for 140 years, the planaria flatworm that can restore lost tissues or become a fully independent organism when it is divided, tardigrades (amazing eight-legged microscopic organisms that can survive in any condition: from intense radiation, low pressure from the depths of the sea, temperatures ranging from -50°C up to 250°C, live in deserts or jungles or survive the cosmic void; they can monitor and stop the metabolism, drain almost all of the body water content and stay dehydrated for almost ten years), tortoises that can live more than 200 years, hydra that have stem-cells characteristics (if we grab a hydra and cut it into several parts, each part will regenerate a head in its original apical side and one foot in his side basal), or the *turritopsis nutricula*, a kind of hydrozoa that can evolve to a polyp in its sexual reproduction stage and then use a process of differentiation by which it relives the cycle over and over again, repeating the process indefinitely when it gets older. Although it can die because of illness, the *turritopsis nutricula* is the first living being known that, because of the process described above called transdifferentation, is biologically immortal (AnAge: Animal Ageing and Longevity Database). For transhumanism, biological immortality can be combined with techno-scientific immortality – another test of the fictitious disjunction between nature and culture. The examples in the previous paragraph, concerning the copy and editing of combined human-animal DNA, can be combined, or added, to other ways to promote longevity and avoid death. And all of these can be combined with transplants, bionic limbs and brain plasticity for curing tumours.

A last ditch option to avoid death is cryonics, that is, preserving people whose lives can no longer be maintained through the current technological-medical means with the goal of resurrecting them in the future. There are already several companies dedicated to the cryonics business, such as Alcor Life Extension Foundation, based in Scottsdale, Arizona. Already Alcor has 69 customers in cryonic suspension, and 773 on the waiting list (in the whole world, in 2019 there were 300 people in cryonic suspension). Whole body preservation at Alcor costs US$200,000. The president

and CEO of Alcor is the libertarian British philosopher Max More, founder of The Extropy Institute, a Transcapitalist think tank that defended extropianism,[1] a Transcapitalist ideological family that combines utilitarianism (Benthamism), optimistic views on future and the defense of free capitalist markets as the best way to reach *extropy*, an antonym to entropy, the degree of irreversibility reached after a process that involves the transformation of energy. Max More, now is more a mainstream liberal than a libertarian extropianist.

Cryonics can be applied only when the person is clinically, and legally, dead. Only when they have ceased to have any signs of life they may be frozen, always in liquid nitrogen and at -196ºC. And there is no guarantee that, once thawed, the person can be revived. It all depends on future technology and scientific advances. No animal that has been frozen has been returned to life.

There are alternatives to cryonics, such as scanning the brain to make a copy of it and uploading it into a hard drive of a computer; a kind of "virtual immortality," in which a copy of our consciousness is inserted into a computer simulation. The problem is that the copy of the consciousness, although created to be self-consciousness of the individual, is not. The individual may be biologically alive, frozen, or already dead. Companies like GV, dedicated to mind uploading, do this with a view of the so-called *neuro-economics* and *psycho-economics* neuronal studies applied to marketing economics (Caballero de la Torre 2013, 4), in order to gain a foothold in the market when planning the distribution of certain products among consumers (Walton 2010). This is an attempt to give scientific sustenance to the theory of marginal utility (Armesilla 2015).

Surely, the only viable way to extend life indefinitely has to do with what is mentioned above about biology and DNA. In all healthy organisms every day millions of cells die. This is a biological mechanism of survival to avoid, among other things, death from cancer. However, sometimes there are cells that refuse to die, like cancer cells, because they put their own survival above the survival of the organism in which they are located. With cancer, cells begin to grow out of control, without dying, and, by reproducing, give rise to new cells that also refuse to die. Cancer cells have the ability to divide indefinitely because they can keep their telomeres forever young. Telomeres are the ends of chromosomes whose function is to protect the genetic material from deterioration. When the telomeres of a living being are spent, their cells begin to grow old. This process concludes either with degenerative diseases that end up being lethal, or with death by old age. Telomeres of all living organisms are spent little by little, but without ever stopping. However, the cancer cells avoid this process, thanks to telomerase. Telomerase is found in cancer cells, but also in germ cells (the precursor of the gametes, that is to say, egg cells and spermatozoa), in foetal tissues and in some stem cells. Is not found in the rest of known cells. Their function is to keep the telomeres young. If it were possible to turn on, in a controlled way, telomerase in human cells, these cells could avoid the deterioration of the telomeres, and could lengthen the life of people to indefinite limits, thus achieving the biological immortality in the human species. And if telomerase could be turned off, cancer could be eradicated. Through treatment of telomeres with telomerase, Spanish molecular biologist María Blasco managed to increase the life of mice by 40 per cent (Blasco *et al*. 2012, 691-704). This technique could be applied to humans in a few decades, depending, of course, on the price of the treatment.

The possibilities offered by the development of the productive forces that current sciences and technology enable were unimaginable before, except in science fiction. Such developments redefine the relationship between man and nature that Marx saw in *Capital*:

> Labour is, in the first place, a process in which both man and Nature participate, and in which man of his own accord starts, regulates, and controls the material re-actions between himself and Nature. He opposes himself to Nature as one of her own forces, setting in motion arms and legs, head and hands, the natural forces of his body, in order to appropriate Nature's productions in a form adapted to his own wants. By thus acting on the external world and changing it, he

1 Extropianists believe that transhumanism is the best tool to reverse the entropy of matter and energy, but always in a Transcapitalist way (More 1996, 1-7). Although More has evolved from libertarianism to social-liberal thought, many extropianists are, still libertarians, such as professor of Law at University of Tennessee, Glenn Reynolds, or CATO Institute philosopher, Ronald Bailey. The most famous client of Alcor is late baseball player Ted Williams. But only his head, because many cryonic companies have available the possibility to preserve only the brain, something that is cheaper to preserve than the whole body.

> at the same time changes his own nature. He develops his slumbering powers and compels them to act in obedience to his sway. (Marx 2013, 127)

Variable capital, support of the labour force, is at the same time constant capital. Or better said, each of its formal-anatomic parts (body parts, tissues) and of its *material*-atom parts (telomeres, rhizomes, atoms) are productive forces, as well as any living organism, such as before any material entity:

> An instrument of labour is a thing, or a complex of things, which the labourer interposes between himself and the subject of his labour, and which serves as the conductor of his activity. He makes use of the mechanical, physical, and chemical properties of some substances in order to make other substances subservient to his aims. (Marx 2013, 128)

The process by which the productive forces are reconfigured through the operations of the workers is described with such mastery by Marx that his description is valid for any historical mode of production, including the current Transcapitalist phase that is being born:

> A particular product may be used in one and the same process, both as an instrument of labour and as raw material ... whether a use-value is to be regarded as raw material, as instrument of labour, or as product, this is determined entirely by its function in the labour-process, by the position it there occupies: as this varies, so does its character. Whenever therefore a product enters as a means of production into a new labour-process, it thereby loses its character of product, and becomes a mere factor in the process. If then, on the one hand, finished products are not only results, but also necessary conditions, of the labour-process, on the other hand, their assumption into that process, their contact with living labour, is the sole means by which they can be made to retain their character of use-values, and be utilised. Labour uses up its material factors, its subject and its instruments, consumes them, and is therefore a process of consumption. Such productive consumption is distinguished from individual consumption by this, that the latter uses up products, as means of subsistence for the living individual; the former, as means whereby alone, labour, the labour-power of the living individual, is enabled to act. The product, therefore, of individual consumption, is the consumer himself; the result of productive consumption, is a product distinct from the consumer. In so far then, as its instruments and subjects are themselves products, labour consumes products in order to create products, or in other words, consumes one set of products by turning them into means of production for another set. (Marx 2013, 129-130)

But Transcapitalist BTA-Politics continues to operate with some bases, conjugated with legal-political superstructures, which can tell us where the pathways of the productive transformation looming in transcapitalism will go. A phase of capitalism in which every single productive force could produce disruptive technologies, and every element that biotechnology could operate with it could help to produce value and surplus value:

> The labourer works under the control of the capitalist to whom his labour belongs; the capitalist taking good care that the work is done in a proper manner, and that the means of production are used with intelligence, so that there is no unnecessary waste of raw material, and no wear and tear of the implements beyond what is necessarily caused by the work. … The product is the property of the capitalist and not that of the labourer, its immediate producer (Marx 2013, 131).

In Transcapitalism, and with its BTA-Politics, everyone, especially those who are not of the Great Bourgeoisie, will be, at the same time, owners of labour-power and sellers of productive forces from their own bodies.

About the Possibility and the Necessity of a Marxist Transhumanism

We have commented above on some of the families of transhumanism, such as Transcapitalist extropianism or libertarian transhumanism. There are several works that have studied these various families (Cardozo and Meneses Cabrera 2014, 68-88), so here we will adhere to articulating them:

1. Democratic transhumanism or Technoprogressivism: left-wing Transcapitalists supporters of the Welfare State, social-democracy and progressive liberal ideas (such as American sociologist James Hughes and Max

More; on this tendency it is possible to find postmodern leftist activists, like Queer activists, futurist feminism activists, LGBTI activists, social justice activists, *Third-Worldism* activists, cyberpunks and biopunks, Free Software activists, World Basic-Income activists, etc.; many of them are called *anticapitalists* but not many of them in a Marxist way);

2. Extropianism: Transcapitalist supporters of the supposed *spontaneous order* of capitalism, the counter-entropy and anarcho-liberalism (early Max More and Glenn Reynolds and Ronald Bayley);
3. Christian transhumanism: including its varieties of Protestant, Catholic or, even, Mormons, this family of transhumanists defends the compatibility between spiritual transcendence and techno-scientific progress, seen as a divine gift by God (there exists a Christian transhumanists Association, led by Protestants, like American programmer Micah Reding and Reverend Christopher J. Benek);
4. Singularity transhumanism: supporters of the union between machines and biological organisms in order to produce what they call *post-biology* (Ray Kurzweil);
5. Technogaianism: ecologist transhumanists;
6. Posthumanism: transhumanists that argue that transhumanism is only the transition between the human and the post-human;
7. Overhumanism: the fascist Transcapitalist tendency, born in Italy, that mix transhumanist ideas with Nietzsche's Übermensch theory, futurist arts and radical nationalism, even racism. Overhumanism is heavily influenced by French neofascist philosopher Alain de Benoist and his philosophical school called "Nouvelle Droite" and the Italian neofascist Giorgio Locchi. The most important contemporary author of overhumanism is Italian author Stefano Vaj (IEET 2009).

These are all the main transhumanist tendencies right now. None of these tendencies are Marxist, and none of them puts into question the social relations of production derived from capital. Some of them even are, in essence, anti-Marxist, like overhumanism, Christian transhumanism, extropianism, and even tecnogaianism and techno-progressivism. On the opposite side, however, there are the anti-transhumanists, the majority of whom are in the conservative ideological spectrum. Anti-transhumanist conservatives associate transhumanism with Marxism. But there is no Marxist transhumanist school of thought. Some associations of this type have been made by Joshua Fox (Fox 2011), who says that, despite the similarities, transhumanism cannot be socialist, even less Marxist. Or by Wesley J. Smith (Smith 2013), who claims that, despite the future fact that transhumanism won't ever create post human species, the values underlying the movement require conservative opposition because, like Marxism, transhumanism is philosophically materialist, rejects human exceptionalism, claims to be based on eliminating suffering, seeks to supplant true spiritual values of organised religions (in this argument Smith agrees with Timothy Winter, dean of Cambridge Muslim College, who converted to Islam with the name of Abdal Hakim Murad, Muslim Shaykh) and with Peter Lawler (Lawler 2013), who affirms that transhumanism and Marxism are destructive forms of scientificism that will never achieve anything they fancifully describe for the future of Mankind, but are still *ideologies* to fear.

But there are other interesting analysts of the convergence of transhumanism and Marxism, like that of British sociologist at Warwick University Steve Fuller (Fuller 2015). For Fuller, Marxism and transhumanism have always and forever will try to implement their goals in a maximalist sense. But the bourgeoisie, or the economic and political establishment, will take the parts of both that could be used for them in order to preserve their social preponderance and their political dominance. Otto von Bismarck, in Germany, did it with Marxism, implementing in the last quarter of the nineteenth century the basis of the Welfare State, collaborating with social democrat parties and trade unions. That strategy was copied by national bourgeoisies of many west European countries, but failed in Russia, because of the coming into view of the Bolsheviks and Leninism, which led to communism as an established political movement and gave a definitive *plot-twist* to Marx's thoughts. Anyway, for Fuller, transhumanist thoughts and thinkers will develop

into something similar to Bismarck's appropriation of Marxism. How it will happen is explained by Fuller as follows:

> The Bismarckian move in the face of this dialectical tension is the precedent set by the US National Science Foundation's 2002 'Converging Technologies' agenda, which established a programme of anticipatory governance, whereby social researchers would attempt to gauge the likely public response to the realization of these predictions. The tools of anticipatory governance are drawn from market research but raised to a new level, since the products in question remain speculative. … The effect of such research is to create a demand for broadly 'transhumanist' products while neutralizing the worst fears surrounding them. So, even if the current transhumanist projects do not turn out as planned, a culture is being nurtured that wants them to be true and hence is willing to support their continued funding. ... A Bismarckian move to short-circuit the transhumanist narrative might involve, say, channelling the modest advances made across the relevant sciences and technologies into mainstream healthcare, education, production systems, etc. – while cutting off funding for the more visionary projects. After all, even such modest advances amplified across the entire economy might result in a step change in the standard of living that might cause people to forget about the Singularity, especially if it does not involve a massive disruption of lifestyles already seen as desirable. (Fuller 2015)

But how does Fuller recommend avoiding neo-Bismarckian policies against Transcapitalism? By taking a more positive attitude towards military business and technologies:

> One way to make the connection between the military and Transhumanism tighter would be by casting the transhumanist biomedical agenda as a matter of national security. … Many mass medical innovations – from public hygiene reform to vaccinations – were introduced with this sense of 'civilian preparedness,' with the likes of Louis Pasteur and Robert Koch emerging as 'national heroes' of their respective countries in the Franco-Prussian War. In more general historical terms, major public funding for adventurous research has typically been done against the backdrop of a sustained external threat or 'permanent state of emergency' (think of the US v. USSR in the Cold War). A political party that says living 200 years is an inherently nice idea is not as persuasive as one arguing that living 200 years is necessary to maintain our position in the world. The activities of China's Beijing Genomics Institute can help focus the mind on this issue. This public-private partnership aims to sequence the genomes of thousands of high-IQ people to find interesting transferable molecular patterns. … The focus on the military would help shift tenor of transhumanist political discourse from one of personal freedom to one of geopolitical necessity. (Fuller 2015)

Bismarckian politics helped greatly capital accumulation, allowing Germany to become a colonial power. France, the United Kingdom, the United States of America and Russia copied, more or less, this model, which helped strengthen financial capital and its exports, the concentration of production in associations of capitalists and the World division among them and among the States of which those bourgeoisies were the ruling class. Bismarckian politics also helped capitalism to evolve into imperialism, as Lenin defined (Lenin 1917). So Steve Fuller's recommendations would allow transcapitalism to evolve into something that can be defined as *transimperialism*.

As for feminism and environmentalism, transhumanism shares with them common elements, but is also at loggerheads with both, whose origin is bourgeois. As with feminism and environmentalism, the roots of transhumanism go deep in history, before modern ages. As everybody knows, British biologist Julian Huxley (Aldous Huxley's brother, the author of science fiction classic novel *Brave New World* (Huxley 1932), a book that could be described as a *Transcapitalist dystopia*) was the first person who used publicly the term transhumanism (Huxley 1957). But centuries before we could find forerunners (Cardozo and Meneses Cabrera 2014, 75-79), like Italian medieval-Renaissance humanist Pico della Mirandola (1996), French philosopher and mathematician René Descartes (Descartes 1628), the *Marquis de Condorcet* (Condorcet 1794), American politician and one of the founding fathers of the United States of America, Benjamin Franklin (Bostrom 2005, 3), French atheist

Julien Offray de la Mettrie (La Mettrie 1748), among others.

We can find examples of what could be defined as *Marxist transhumanism* after Marx. One example was British geneticist J. B. S. Haldane (Haldane 1923). Haldane was a member of the International Brigades during the Spanish Civil War and was an active militant of the Communist Party of Britain since 1942. Halden was also a Marxist-Leninist and a fervorous partisan of Dialectic Materialism, the Soviet official philosophy. Another is Irish philosopher of science and physicist John Desmond Bernal (Bernal 1929), member of the Communist Party of Britain since 1933. In the Soviet Union, thanks to the background of the tradition of Russian Cosmism initiated by philosopher Nikolai Fiodorovich Fiodorov (Fiodorov 1990), there were a lot of communist thinkers that could be called Marxist transhumanists, like Vladímir Vernadsky, inspirator of the idea of *noosphere* (set of beings endowed with intelligence) (Vernadsky 1998), but in a materialist sense, adapted from the idealist notion of French Jesuit priest Pierre Teilhard de Chardin. Another example was Soviet pioneer of astronautics Konstantin Tsiolkovsky who affirms:

> Even now a Man hopes not only to subdue nature, but also to travel among planets and stars of the Universe, so how inconceivably high will his real power be – and, the more so, power of mature planetary creatures? (Tsiolkovsky 1939, 1)

In the Soviet Union, men's evolution thanks to science, technology and socialism-communism was a recurrent idea of *Diamat* philosophy (Esquinas Algaba 2015). Soviet philosophy was, because of its materialism, totally dependent on technology and science. Most examples of people who could be considered *Soviet transhumanist communists* were scientists. Two more examples: astrophysicist Nikolai Kardashev, author of the so-called *Kardashev Scale* (Kardashev 1964, 217-221). In this scale, Kardashev theorizes on the possibility of classifying civilizations according to their techno-scientific development according to the amount of energy and matter produced and consumed. Power is a measure of energy transferred through time, and is expressed in watts (W). In the year 2014, the total world consumption of energy was 17.54 terawatts (TW). This means that, at present, our civilization would, according to Kardashev, be in stage 0.7, still far away from the beginning of his Scale.[2]

One of the latest efforts to mix Marxism with transhumanism was the one made by Canadian philosopher James Steinhoff (Steinhoff 2014, 1-16), who warns, "I suggest that the advance of technology, if divorced from human self-determination, may not present revolutionary opportunities, but rather the opposite" (Steinhoff 2014, 5).

With elaborate arguments, Steinhoff shows how Marxism and transhumanism possess substantial similarities. It could be argued, even, that Marxism is inherently transhumanist, and at the same time, true transhumanism has to be, essentially, Marxist. Steinhoff's Marxist transhumanism asserts: "The human is the animal whose nature is to change its own nature" (Steinhoff 2014, 6).

Indeed, transhumanist arguments can be found in Engels (1996) and Marx himself, in such essential writings as the *Grundrisse* (Marx 1858). Marx explains in *Grundrisse* the essence of transcapitalism a century and a half before its birth:

> The whole process of production, however, does not appear as subsumed under the direct ability of the worker, but as technological application of science. Give to the production a scientific nature is, therefore, the tendency for capital, and work is reduced to a mere moment of that process. As it happens with the transformation of value into capital, in a more precise analysis of the capital can be seen on the one hand that this presupposes a certain development of the productive forces, historically given – and between these productive forces also science-, and on the other hand, driving it forward. (Marx 1858, 221)

2 Based on this, Kardashev established a three-type civilization scale, extended by others after him (Barrow 1999, 133): Type I) Capable of producing an energy of approximately 1016 W of power, which is equivalent to exploiting the energy available in the entire planet Earth, including antimatter of the Van Allen belts; Type II) Capable of producing an energy of approximately 4 x 1026 W of power, which is equivalent to exploit the energy available in its own Sun and its solar system, maybe building a Dyson Sphere (Dyson 1960, 1667-1668); and Type III) Capable of producing an energy of approximately 4 x 1037 W of power, which is equivalent to exploit the energy available in one entire galaxy, surpassing the 1040 W of power produced by quasars. This controversial scale is, notwindstanding, coherent with Diamat's ontological combination between purpose and teleology, expressed in literature by Soviet transhumanist and paleontologist Iván Efrémov, on his classic science-fiction milestone Andromeda: A Space Age Tale (Efrémov 1957), describing on it a distant future beyond communism.

In this process, Transcapitalist workers are merely parts of the chain of the productive process, and therefore they enter in conflict between each other, between cyborg workers and organic workers, and, even, against hypothetical *machine workers*. All of this implies alienation and fights between floating individuals:

> The appropriation of living labor by capital gains in the machinery, is also in this sense, an immediate reality. ... What allows machines to execute the same work as before the worker is the analysis and the implementation – which derive directly from science – of mechanical and chemical laws. The development of the machinery in this way, however, only is verified when great industry has already reached a higher level and capital has been captured and put at its service all sciences; on the other hand, the same existing machinery provides it great resources. The inventions then become branches of economic activity and the application of science to the immediate production itself becomes a criterion that determines and encourages this. … That way is the analysis through the division of labor, which transforms yet into mechanical the operations of the workers, increasingly, so that at some point the mechanism can be introduced in place of them. The particular mode of work, therefore, is presented here directly transferred from the laborer to capital in the form of the machine, and in virtue of this transposition, it devalues their own ability to work. Hence the struggle of the workers against the machines. … The appropriation of labor by capital, the capital in terms of that which absorbs itself living labor – "which if it had in the body the love" – is opposed to the worker so brutally evident. (Marx 1858, 226-227)

But in this process, from a Marxist transhumanist perspective, Marx find positive news:

> Productive forces and social relations – one and other aspects of the development of the individuals – appears to capital … not more that means to produce on the basis of its narrow base. In fact, however, constitute the material conditions to blow up. (Marx 1858, 229)

Conclusion

The contradictions of Transcapitalism present the conditions for a Marxist transhumanism, that is to say, to give transhumanism its proper adjective, like Marxist to feminism. Maybe, Transcapitalism is the social formation that would close *prehistory of human society* (Marx 1859, 8). Lenin said communism was "soviets plus electricity." Future communism would be *soviets plus immortality*.

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Remolding the Human: The Transhumanist Ideas in Marx and Russian Marxists

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ABSTRACT. Transhumanism is a young ideology, and its creators have hazy and confused notions of their forerunners and philosophical roots. The authors attempt to show that some of the ideas and concepts of Karl Marx and some Russian Marxists meet the aspirations of transhumanists to radically transform the human body. This is, first of all, the idea of the revolutionary role of labour and technology in the history of mankind, along with the concepts of the "inorganic body" of man and the essence of man as an "ensemble of social relations."

KEYWORDS: transhumanism, bioconservatism, inorganic body, human essence, human identity, freedom, labour.

Introduction

Those who aspire to glimpse into the distant future should, as Newton advised, climb onto "the shoulders of giants." For an ideology as newborn and as unfledged as transhumanism is,[1] it is vital to lean on firm points of support in the history of human thought. So far, transhumanists have failed in this task, nor have they displayed any particular interest in undertaking it. They have been more passionate about the technological side of the matter, viz. androids, cyborgs, nootropic drugs, etc. Nick Bostrom's effort to identify the ideological roots of the transhumanist movement can hardly be considered a serious contribution to the history of science (Bostrom 2005). This is more a bird's-eye overview than an in-depth analysis of the topic.

Christian theologians' excursions into the background of the problem, from Francis Bacon to Pierre Teilhard de Chardin,[2] have been more impressive, but remain a view from the outside, not the kind of self-critical introspection transhumanism requires as, for that matter, any other ideology or research program does.

Following is an attempt to see whether and how a Marxist philosophy of history can help solve the problems on the transhumanist agenda.

Marx as a Precursor of Transhumanism

The cornerstone of transhumanist thought is the idea of the infinite human being. Philosophers have been familiar with it since the time of Heraclitus: "By setting off you would never find out the ends of soul, though you should travel along every path: so deep a measure does it have" (B 45 DK). Plato, too, stressed the difference between the infinity of the soul and the limited capacities of the human body. He would even call the body the prison of the soul. As Plato writes in

1 This movement emerged in the late twentieth century, and in 1998, philosophers Nick Bostrom and David Pierce founded The World Transhumanist Association.

2 See Chapters 2–3, by Michael Burdett and David Grummett, in Cole-Turner (2011).

Phaedo (82e), "the lovers of knowledge are conscious that their souls, when philosophy receives them, are simply fastened and glued to their bodies: the soul is only able to view existence through the bars of a prison, and not in her own nature" (Plato 1873, 411).

Transhumanism tries to resolve this contradiction of classical metaphysics in its own way. It seeks to *transform the human body* by means of technologies, endowing it with countless degrees of freedom, overcoming, indeed, death itself, and thus forcing open the door of the "prison" of our corporeality.

Marx was the first to point out the revolutionary role of technologies in the history of mankind. Incidentally, Bostrom enlisted Marx in the party of "bioconservatives," without a shadow of a doubt and without a single argument.[3] Marx showed how technological development changed the structure of society, creating new social classes and forms of property. "The hand-mill gives you society with the feudal lord; the steam-mill, society with the industrial capitalist" (Marx 1973, 95). And earlier, Marx wrote about man's universality "which makes all nature his inorganic body." Plants, animals, stones, air, etc., that "constitute theoretically a part of human consciousness, ... in the realm of practice ... constitute a part of human life and human activity" (Marx 1988, 75-6).

The human, therefore, has not one body, but two. He constructs his second, inorganic, body by his own labour from the material of external nature. All human "programs" of behaviour, including habits and norms of everyday life, rules of language, moral and legal imperatives, dogmas of religion, etc., are "recorded" in this man-made body. Labouring man can turn any natural thing or any phenomenon of nature into a "meta-chromosome" that stores information about his personality, the character of his thought and behaviour. It is this technology of "programming" man's own vital activity with the help of external things that is the human race's major advantage over other living species: it gives us *freedom*. Every time man changes the surrounding world, he changes himself, and in this improves the common "genotype" of mankind. Man is both a subject and a product of his own labour: "*The entire so-called history of the world* is nothing but the creation of man through human labor" (Marx 1988, 113). Marx called this conceptual novelty a materialistic understanding of history.

Marx, to be sure, understood "the human essence" to be "the ensemble of the social relations" and, by no means, an "abstraction inherent in each single individual" (Marx 1976, 4). There is neither a trace nor a shadow of "biosocial" dualism in this definition. The essence of man is one hundred percent social. As to the body, it is a violin the "ensemble of social relations" plays.

The "Bio-Conservative" Objections

Critics of transhumanism put the concept of human "biological nature" at the forefront of their argument. This is precisely the concept Marx rejected with his formulation of the "abstraction inherent in each single individual." The guarantee of our human identity is seen as some anthropological constant or in the human genome, technological interference threatens to destroy both "our generic-ethical self-understanding," and "the necessary conditions for an autonomous way of life, and universalistic understanding of morals," Francis Fukuyama writes (cited in Žižek 2008, 435).

From Marx's point of view, the "biological nature" of the human is but a *naturalistic myth* rooted in the misunderstanding of human practical life, of the fundamental difference in the way of life of man and animal. If so, the entire line of reasoning of the opponents of transhumanism is beside the point, and this applies not only to the rationalist arguments of enlightened "bio-conservatives," such as Fukuyama, but also to anathemas from the lofty perspectives of "theological anthropology." The latter discipline depicts the human body and mind as *imago Dei* or the perfect creations of the Lord God. A prime example of such an argument can be found in Vladimir Kutyrev's writings.

> Transhumanism is an anthropo(humano)phagia, a direct challenge to the identity of the human, as we know him, as we know ourselves having evolved over millions of years in the tempos of reason living and born on that basis or having been created by God 'who saw that it was good.' (Kutyrev 2011, 24)

The nature of the human body or, for that matter, the nature of any other body is no obstacle to labour. Practical transformation of nature, including and pri-

3 James Steinhoff (2014) showed that Bostrom's assessment of Marx is clearly inadequate.

marily the nature of the human body, is the "generic activity" of the human. To attempt to impose any kind of anthropological taboos on our practical abilities would be both senseless and useless. Labour has long since changed our natural body and changed it irreversibly, has straightened our spine vertically (despite a whole bunch of adverse health effects), has transformed the anthropoid's upper limb into that "tool of tools" we call the human hand. The modernization of the body will doubtless go on, no matter what its opponents say. Actually, the human body is transformed every time human work transforms the surrounding world.

> [Man] acts upon external nature and changes it, and in this way he *simultaneously* changes his own nature. He develops the potentialities slumbering within nature, and subjects the play of its forces to his own sovereign power. (Marx 1982, 283; italics ours)

Whatever humans do boomerangs backs onto them, affecting their bodies and minds, not to mention their social life. Transformation of environment and transformation of human nature are not two different processes, but *two sides of one and the same process of social labour*. If Bostrom and other transhumanists learned that lesson of Marx, they would be on much firmer ground in their polemic against bioconservatives.

In general, transhumanism should not be portrayed as an *alternative* to classical humanism. The "hard core" of the humanistic worldview, as shaped in the age of the Renaissance, remains safe and sound: *the human is the ultimate goal, the end in itself of any human activity*. The human's self-perfection, including that of his body, mind and social relations, is the principal vector of world history. It is not difficult to find this basic provision in the transhumanist manifestos provided they are read without prejudice and with a minimum of scientific honesty.

There may be theorists and practitioners of transhumanism, of course, who might try to destroy this core, but any research program must be judged by its *best, advanced* developments. Marxism, it will be remembered, did not avoid being deformed and discredited by some of its adherents already during Marx's lifetime, prompting Marx to refuse to identify himself as "a Marxist" (see Engels 1975, 22).

Human Nature and the Problem of Freedom

For Marx, human freedom is directly proportional to man's command of nature, including command of his own biological nature. Command of nature depends, in turn, on the development of productive forces, i.e. tools and technologies: "People won freedom for themselves each time to the extent that was dictated and permitted ... by the existing productive forces" (Marx and Engels 1976, 431). Freedom is, therefore, a dimension of sociohistorical, not individual life. The paradox of history is that societies have developed enormous productive forces at the expense of crippling bodies and minds of men of labour. Some social classes have expanded their freedom by enslaving others. Marx called this paradoxical development *alienation*. A great social revolution was needed for the progress to cease to resemble a pagan idol drinking the nectar of freedom from skulls of the slain.

What does this mean as far as the problem of transformed human corporeality is concerned? Technological progress is a necessary, but far from sufficient, condition for liberating the body. Human bodies cannot be free unless human society is free. In situations of alienation, freedom of some implies bondage of others. This deplorable fact is virtually ignored by transhumanists. As James Steinhoff correctly observes,

> most transhumanist thought tends to place little emphasis on the social nature of the human – and this is where transhumanists should take a point from Marx. The transformation of the human seems to be regarded by most transhumanists as a process undergone by atomistic individuals who each exist in no more than a loose aggregate with others. (Steinhoff 2014, 9)

Since the human body is an element of the productive forces – indeed, their primary, key element – development and transformation of the human body has to and will continue. From this standpoint, bioconservatives' protests are hardly more than Luddite-type naïveté devoid of any historic sense. But bioconservatives are right to highlight potential threats and risks that new technologies might entail for living individuals. In the world of alienation these threats are more than real because capital prioritizes valorization over human well-being. However, new

technologies entail not only threats; they promise new possibilities and thus, greater freedom. Would this not justify the risks?

In his time, Marx drew attention to the pernicious nature of "the factory system," the harm it did to the health and, indeed, the very lives of labourers, especially child labourers. Unlike contemporary bioconservatists, however, he saw the remedy for technological threats in *development of technologies themselves* and transformation of the social working conditions. So,

> as Robert Owen has shown us in detail, the germ of the education of the future is present in the factory system; this education will, in the case of every child over a given age, combine productive labour with instruction and gymnastics, not only as one of the methods of adding to the efficiency of production, but as the only method of producing fully developed human beings. (Marx 1982, p. 614)

This idea of combining productive labour with physical and intellectual training, already present in the writings of Charles Fourier, became the foundation of the early Soviet concept of "labour school" (by Pavel Blonsky and others).

Russian Cosmism and Consciousness Engineering

Transhumanism had a precursor in the person of Nikolai Fyodorov.[4] This Russian *supramoralist*[5] seems to have been the first to charge science and technology with the task of "overcoming nature" implying putting an end to the biochemical restraint on human existence. No human could be considered a genuinely free person, Fyodorov argued, while he had something in him that he had received from nature for free, "be it even a cell not owed to his own toil" (Fyodorov 1982, 430).

In contrast to transhumanists, the ultimate goal was for him universal brotherhood in labour rather than individual immortality. In this he was an irreconcilable adversary of that "unbrotherly" social order, and was close ideologically to Marx and communism.

All Russian cosmists, from Fyodorov's *Philosophy of Common Cause* to Ilyenkov's *Cosmology of the Spirit*, sought to understand the import of human presence in the universe. They shared the belief that humanity had a mission of cosmic magnitude and developed sublime deontologies that went as far as humankind's collective self-sacrifice to prevent the heat death of Mother Nature.[6] The reader interested in these issues should consult the recently published anthology starting with the Editor's Introduction "Russian Cosmism and the Technology of Immortality" (Groys 2018).

A contemporary human is unfit for the cosmist task. Therefore both their body and their mind are to be transformed to match the scale of the challenge. The ancient imperative *gnothi seauton*, 'know thyself,' is to be substituted with the new one: *poiei seauton*, 'create thyself.' This is obviously something every transhumanist will endorse. However, one can create oneself only if one understands what one *must be/become*. And this implies a deontology of a kind, even if vaguely grasped. Otherwise the human's android self-portrait will prove to be inadequate or, worse still, "unbrotherly."

Marxists' and Cosmists' visions of men of the future were quite different, of course. However, we have good reasons to bring them into line with one another, because they all sought the transformation of human nature by means of science and technologies.

> Russian Cosmists inherited and radicalized the Marxist shift from divine grace to secular technology. ... Fyodorov goes even further than Marx in his project of achieving immortality and resurrection of the dead through technology and rational social organization. ... And Fyodorov believed just as firmly in technology: because everything is material, physical, everything is technically manipulable. (Groys 2018, p. 5)

According to Groys, the principal difference between the project of Marx and that of the Cosmists lay in their attitude to death. Cosmists advocated the "biopolicy of immortality." Fyodorov would consider Marx's communism as an exploitation of the dead in favour of the living. Marx thinks of technology in terms of historical progress, whereas Fyodorov directs technology toward the past. Technologies are to change

4 See, for instance: Cole-Turner 2011, 25–8. Or consult the Wikipedia articles on Transhumanism (English, Russian, French).

5 Fyodorov called "supramoralism" a demand for the consolidation of all living people towards the common cause of resurrecting our dead ancestors by means of science and technologies.

6 See Ilyenkov, 2017.

mortal into immortal, very much like art does it. As to the state, it is to become a museum of humankind. It is not a metaphor, but a philosophical amplification of the concept of museum (see Fyodorov's work "The Museum, Its Meaning and Mission").

The idea of "remolding" the human circulated widely in post-revolutionary Soviet Russia. This was understood as, first and foremost, development of a "new consciousness," thus bringing psychologists ("engineers of human souls," as Stalin called them in a private conversation) to the foreground. The young psychologist Lev Vygotsky wrote in 1927:

> In the new society our science will take a central place in life. "The leap from the kingdom of necessity into the kingdom of freedom"[7] inevitably puts the question of the mastery of our own being, of its subjection to the self, on the agenda. In this sense Pavlov[8] is right when he calls our science the last science about man himself. ... When one mentions the remolding of man as an indisputable trait of the new mankind and the artificial creation of a new biological type, then this will be the only and first species in biology which will create itself. (Vygotsky 1997a, 342)

Referring to Kautsky and Trotsky, Vygotsky formulates his ideal of the reforged human. This will be a person who bends his emotions, instincts and unconscious psychic processes to his will, turning his behaviour and his very life into artworks. He will become a true Superman, but different from Nietzsche's concept thereof, only when compared to his ancestors, not to his neighbours. Such a person will be great not among the crippled dwarfs, but great among the great, and will act in alliance with the equal, striving for a common goal.

> Not a new biological breed, but a socially organized Superman, enlightened through and through, in every cache of the most elemental forces of the body, freed from the most terrifying slavery – enslavement to the self – and from the most bitter dependence – on one's own nerves and psyche – by subordinating to himself the play of the body's inner forces as he does the outer forces of nature. (Cited in Zavershneva 2012, 56)[9]

Molding new humans, like melting new metals, are the kind of experiments better performed under laboratory conditions. Right after his arrival in Moscow, Vygotsky stated on an application form that he would like to work with deaf-blind children. Deaf-blindness is a kind of natural anomaly that makes the educational process more dependable on and totally controlled by the pedagogue, especially at initial stages. In the absence of laborious and purposeful educational effort, a deaf-blind child is utterly incapable of mental development. It is the educator's art that is to make a human person of him. Vygotsky was convinced that if a deaf-blind child's central nervous system is undamaged, such a child has the same "limitless possibilities for development and education" as normal children (Vygotsky 1987, 181).

In 1963 Alexander Meshcheryakov, a representative of the next generation of the Vygotsky school, established a Boarding School in Zagorsk that housed some 50 deaf-blind children. This boarding school would subsequently be called the "Synchrophasotron of the science of the human." The philosopher Evald Ilyenkov took an active – both theoretical and practical – part in the Zagorsk educational experiment. As he asserted, in the final analysis, we were left with no doubt whatever that

> a scientifically organized process of education, even with such a seemingly insurmountable obstacle as complete absence of sight and hearing at once, can lead the child to the path of full-blooded human development and form ... a mentality of the highest order, opening him access to all the treasures of human spiritual culture and bringing him up a universally developed, truly talented person. (Ilyenkov 1977, 69)

Forming the Ideal Human

Transhumanist literature presents no common model of a posthuman. While hedonistic utilitarianism á la Helvétius and Bentham sees minimization of suffering and maximization of pleasure as the criterion of perfect human existence, other authors find this criterion too human and argue that the posthuman mind is to be free of the affects of joy and sorrow. A person enclosed in an immortal electronic body (or rather data carrier) will be rid of such biological behaviour regulators as affects.

7 The phrase is from Anti-Dühring by Frederick Engels.
8 van Pavlov, the author of the theory of conditioned reflexes.
9 This archival paper has not yet been published. Zavershneva's translation is slightly refined.

The "liberal eugenicist" Nicholas Agar invokes Isaiah Berlin and John Rawls to call for leaving post-humans the right to choose freely between modes of life and forms of body. Everyone has his own taste, so let all flowers flourish. This common sense truism underlies Agar's "pluralistic view of human excellence," or otherwise, a "pluralism about human flourishing" (Agar, 2005).

Marx's idea of the human ideal was as old as the world, too. Marx shared it with most Renaissance humanists. It was simply that of a harmonious person: clever, kind, healthy, diligent, and endowed with a subtle sense of beauty. The communist movement's historic goal was to form

> the rich individuality which is as all-sided in its production as in its consumption, and whose labour also therefore appears no longer as labour, but as the full development of activity itself, in which natural necessity in its direct form has disappeared; because a historically created need has taken the place of the natural one. (Marx 1978, 249)

The concluding expression "natural necessity has disappeared, etc." sounds like a catchphrase from a Transhumanist Association manifesto, does it not?

The problem, however, is that the division of labour and private property form personalities of a totally different type, that of a narrow specialist chained to the wheelbarrow of his trade, to use Ilyenkov's expression. The division of labour swells common productive capacity, but cripples individuals: "the individual has been turned into a fraction" (Vygotsky 1994, 179). The concrete fullness of human development is achieved at the expense of curtailed personal, individual development, at the expense of turning most individuals into living abstractions. Both Diderot and Marx branded this type of human development as *idiotisme du métier*. Are transhumanist technologies to immortalize a professional cretin, incapable of passions and hence lacking compassion and, with it, the totality of affects hitherto identified as "human"?

Alas, our time does not favour a universally developed, harmonious personality. The division of labour grows ever deeper, and there seems to be no end to it. It also appears that human personality is to be endlessly and infinitely fractionalized, like the number π. All that remains to Marxists nowadays is to elaborate theories about how to educate universal humans and test those theories under laboratory conditions if chance appears.

As to the question whether it is time for us humans to aim our technological weapons at wicked Thanatos, Marxists, it seems, have to answer it in the negative – for reasons that are concrete-historical, not bioconservative. Humankind is still far from historic maturity, the *akme* of world history is yet ahead. Efforts to immortalize the present underdeveloped type of human personality hardly deserve approval.

What precisely are the conditions required for the formation of the communist Superman? Vygotsky reflected intensely on this question in his *Educational Psychology* (1926). Chapter X gives an outline of the system of molding new humans by means of a peculiar labour education. The current approach fostered *professionalism*, while the new system should foster *polytechnism*.

Despite the exact meaning of the term, polytechnism should not be taken to refer to any sort of "multi-craftsmanship," i.e., the combination of several specialties in a single individual, but rather a familiarity with the general foundations of human labour, with the "alphabet" from which all its various forms derive, or, figuratively speaking, the extraction of a common factor consisting of all these forms outside a pair of brackets. It goes without saying that the educational value of this form of labour is infinitely great, since it signifies the highest flowering of technology, which itself is realized in step with the highest flowering of science. (Vygotsky 1997b, 188).

In short, polytechnic labour is *applied science*. Polytechnic education of children is made possible and feasible only in highly automated industry, when the powers of nature replace human physical force. Vygotsky judged that at his present, there were still neither proper material conditions nor a mass social demand for a new type of personality. The process of polytechnization of labour

> cannot be considered complete in the slightest degree, even in ... America, and even less so here in Russia. Thus, polytechnism is a truth for some future day towards which the school must be oriented in its own efforts. ... We have to understand the sense of professionalism that has to be fostered by our schools as a concession to the real world, as a bridge from

> public education to everyday praxis.[10] (Vygotsky 1997b, 201)

As long as "everyday praxis" (of the divided labour) demands *professionalism*, any attempt at mass production of the Superman is doomed to failure. Humanity has a long historical road of the automatization of labour ahead, before polytechnic education becomes a pressing issue. By this time, the new, relevant pedagogical theory should be ready: "Questions of education will have been resolved when questions of life will have been solved. ... It is then that pedagogics, as the creation of life, will assume the foreground" (Vygotsky 1997b, 350). Vygotsky tries to discern the *truth for tomorrow*; he draws a *pedagogical ideal* of the human freely creating his own lifestyle. But he takes this ideal not from mere speculation, as utopians do. He retrieves it from reality, from very material "life." The transformation of social production into applied science and the ensuing "polytechnization of labour" is a real, ongoing process that will sooner or later overpower the process of the division of labour. This historical moment will become a melting point for human nature.

Conclusion

For all their apparent differences, Marxist and transhumanist theoretical programs turn out to be blood relatives, at least, in a number of aspects. However, we have no intention to present Marx as an apostle of transhumanism. The scope of this paper forces us to limit ourselves to highlighting one or two points of their divergence, focusing on the points of affinity of Marx's understanding of human nature and technology with the implicit, still not properly understood, premises of the transhumanist project.

What should both parties do? In the authors' humble opinion, Marxists should, to the best of their ability and in all available ways, promote the polytechnization of labour (instead of proletarian dictatorships). And transhumanists should ponder the question of what kind of personality they would like to catapult into eternity. Otherwise, technologies might create an eternal hell instead of a scheduled earthly paradise. The human being is a product of its own labour, an artistic and artificial creature, from head to toe. Humans are creators of their own identity, "and this is good," as the author of the book of Genesis said.

10 This passage is cited with the two terminological refinements: "professionalism" (professionalizm, in the Russian original) instead of "vocational career," and "praxis" (praktika) instead of "experience."

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The Oppression of Nature and the Latent Transhumanism of Marxism

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ABSTRACT: In this paper, I argue that Marxism is inherently transhumanist because it entails a drive to de-reify nature, including the human being. I argue that the logic of Marxism also requires the temporal inversion of historical materialism, and its projection into the future. This is the transhumanism of Marxism. It is predominantly latent today. Marxists have largely been reluctant to conduct the temporal inversion of their historical materialist perspective, and in doing so have accepted an arbitrarily reified notion of the human. Transhumanists have not. I link Marxism and transhumanism through an ontological concept of suffering. Suffering encapsulates the materialist ontological relation between nature and the human. By tracing how suffering is articulated in both Marxism and transhumanism, I argue that we can get an idea of how to fully work out Marxism's temporal inversion and revive its latent transhumanism.

KEYWORDS: Transhumanism, Marxism, suffering, nature, futurism, materialism, posthumanism, pessimism

Introduction

In this paper, I argue that Marxism is inherently transhumanist because it entails a drive to de-reify nature, including the human being. From a Marxist perspective, nature ought to be, like religion and capital, considered a barrier to human self-production. This does not mean that Marxism should devalue the natural realm (i.e. ignore ecological concerns). It means that as a historical materialism, Marxism has no time for essences and is dubious of putative facts of nature; it insists that such facts are historically-specific, arising within particular social (geographic, economic, technological) contexts. Marxism thus denies, for instance, the truth of the early political economist Adam Smith's (1961) claim that the division of labour in capitalism exists because of a "propensity in human nature … to truck, barter and exchange one thing for another" (29). Marxism argues that this propensity to exchange was historically produced and is in no way a fact of nature. With this sort of critique Marxism enacts both its historicism and its materialism. I argue, however, that the logic of Marxism also requires the temporal inversion of historical materialism, and its projection into the future. This is the transhumanism of Marxism. It is predominantly latent today. Marxists have largely been reluctant to conduct the temporal inversion of their historical materialist perspective, and in doing so have accepted an arbitrarily reified notion of the human. Transhumanists have not.

I have argued previously that Marxism and transhumanism have substantial parallels in terms of some of their central philosophical categories, including those of the human, nature and technology (Steinhoff 2014). This is not a position widely held by Marxists or transhumanists. Transhumanist Nick Bostrom (2005b) describes Marx as a major historical contributor to a contemporary "bioconservative" movement, by which he means "transhumanism's opposite." From a Marxist perspective, Jeff Noonan (2016) argues that the parallels I draw between transhumanism and Marxism are "superficial" because the orientations of

the two frameworks are programmatically opposed (41). Against Bostrom, I argue that bioconservatism is inconsistent with Marxism and against Noonan, I hold that the similarities between the two run deep. Here I focus on one particular similarity: the concept of suffering. While I link Marxism and transhumanism through the concept of suffering, it is not primarily from an ethical standpoint, but rather an ontological one. Suffering encapsulates the materialist ontological relation between nature and the human. By tracing how suffering is articulated in both Marxism and transhumanism, I argue that we can get an idea of how to fully work out Marxism's temporal inversion and revive its latent transhumanism.

First, I show that suffering, for Marx, derives from both social relations (e.g. class, exploitation) and nature (the finite, corporeal human mode of being).[1] I argue that despite Marx's example, Marxists have, with few exceptions, tended to concern themselves with suffering derived from the social, rather than natural, domain. Then I consider two exceptions to this rule: the Bolshevik revolutionary and theorist Leon Trotsky (1957) and the Italian Marxist philologist Sebastiano Timpanaro (1975; 1979).[2] Trotsky presented an explicitly transhumanist understanding of communism, founded on a pessimistic comparison drawn between capital, religion and nature as anti-human, oppressive forces. Five decades later, Timpanaro appraised nature in similarly pessimistic terms, though unlike Trotsky, he did not believe that communism could overcome the suffering imposed by it. Timpanaro discerned the transhumanism of Marxism but refused to embrace it. This, I suggest, was because his materialism was incompletely ramified. Unlike Trotsky, and Marx himself, Timpanaro did not extend the logic of the Marxist, materialist conception of the human into the future.

Next, I extract from transhumanist writers a conception of transhumanist suffering, which is centrally concerned with the future. Transhumanist suffering validates a whole domain of nature-inflicted suffering which is largely off limits for Marxists, for whom it should be stoically accepted, or ignored, while focusing on socially-inflicted suffering instead. Transhumanist suffering suggests how Marxism could, and I argue should, augment its struggle against capital and religion with the struggle against nature. In the concluding section, I consider Marx's notion of ruthless criticism and Werner Bonefeld's notion of a wholly negatory critical theory as theoretical grounds for this expanded struggle.

Marxist Suffering

What is a Marxist conception of suffering? Ashok Vohra (1983) reads Marx through Buddhism and understands Marx as holding that the cause of suffering is greed. Marx's great contribution is, however, to have shown precisely that capital is more than a mere collection of greedy capitalists. Capital is rather a system which continually reproduces itself by selectively eliminating social relations which do not advance the valorization of value. Greed is a surface level manifestation of the immanent drive of capital to valorize. As Michael Heinrich (2004) puts it "the fact that the individual capitalist constantly attempts to increase his profit is not rooted in any psychological trait like 'greed.' Rather, such behaviour is compelled by the competitive struggle among capitalists" (88). Marx was no Buddhist, yet he was not unconcerned with suffering, which is a major theme in Marx's *Capital*. Suffering is central to the so-called immiseration thesis, or the notion that the enrichment of capital tends to entail the immiseration of labour. In his discussion of the "General Law of Capitalist Accumulation" Marx asserts that the "accumulation of misery [is] a necessary condition, corresponding to the accumulation of wealth" (Marx 1990, 799; see also Benanav and Clegg 2018). Suffering is also central to Marxism according to scholars who read Marx as an ethical thinker. According to Andy Merrifield (1999) "Marx's concept of suffering takes the point of view of those who do suffer and who, under an alternative social system, might suffer and feel differently" (85). On this reading, the idea that under communism people might suffer differently is "the central philosophical tenet upon which Marx's

1 It is probably impossible to categorically demarcate the natural and non-natural. As John Durham Peters (2015) notes, it is "hard to say where nature begins and artifice ends" (33). Indeed, my argument, and Marxist thought generally, hinges on this distinction being, at the minimum, fuzzy. The distinction will ultimately be overcome in the course of the argument.

2 Other explicit exceptions that could be cited include the Irish scientist J.D. Bernal (1929) and the Russian philosopher-scientist Alexander Bogdanov (1922). Less explicit, but suggestive, options include Lukács (1971), Mészáros (1970), Vogel (1996), Schmidt (2014).

mature critique of political economy is founded, and it remains implicit in his later writings" (Merrifield 1999, 85). Similarly, Eugene Kamenka (1969) attributes to Marxism a negative utilitarian ethics, based on the notion "that all men want to remove suffering" (51).

However, as already noted, I am not pursuing an ethical argument here, and I do not believe that was Marx's intention either (see Heinrich 2004, 35-36). Rather I am interested in how suffering is implicated in a Marxist perspective at a foundational ontological level. My concern is with suffering deriving from nature, an underestimated, though I suggest fundamental, aspect of Marx's materialist theorization of the human. Focusing on this aspect casts Marxism as a kind of philosophical pessimism. Pessimism is characterized by the belief, in the words of arch-pessimist Arthur Schopenhauer, that "human life is dispositionally incapable of true happiness, that it is essentially a multifaceted suffering and a thoroughly disastrous condition" (2010, 349). For pessimists, suffering is broadly conceived and is not eradicable; all "efforts to banish suffering do nothing more than alter its form" (Schopenhauer 2010, 341). Pessimism is generally not well regarded. As Eugene Thacker (2015) notes, it is considered "the lowest form of philosophy, frequently disparaged and dismissed, merely the symptom of a bad attitude" (3). In both Marxist and transhumanist circles a dim view is taken of pessimism. Indeed, both are more likely to be associated with an excess of optimism.[3] But both materialist perspectives, by placing suffering deriving from nature in a place of ontological priority, take up a pessimistic orientation. In Marx's case, this is most apparent in his youthful writings on the relations between the human and nature.

In *The German Ideology*, Marx and Engels wrote that a materialist analysis should begin with consideration of "the corporeal organisation of human beings" although they never elaborated precisely how to do so (quoted in Fracchia 2005, 39). There is a clue, however, in the *Economic and Philosophic Manuscripts of 1844's* description of the human as possessing a dual aspect. The human is a "natural being" made up of two aspects: it is both "an *active* natural being" defined by "tendencies and abilities" as well as a "corporeal, sensuous, objective ... *suffering*, conditioned and limited creature" (Marx 1978a, 115). The latter of these, the conditioned, suffering nature of the human, is a result of the fact that the "essential" objects of human need "exist outside him, as *objects* independent of him" (Marx 1978a, 115). This privational formulation of the inherent human dimension of suffering can be compared to Schopenhauer's (2010) assertion that: "All willing springs from need, and thus from lack, and thus from suffering" (219-220). The human exists on the basis of the "material substratum furnished by nature without human intervention" (Marx 1990, 133). However, the human exists in a state of suffering because the material substratum does not immediately meet its needs.

The tendencies, abilities and needs which define the human are not essentially fixed but change as the human adapts to new material conditions and transcends its previous ways of existing (Mészáros 1970, 119-120). Marxism thus conceives of the human as "a bootstrapped, self-reinforcing loop of social cooperation, technoscientific competences and conscious awareness" which through "social activity transforms its natural basis" (Dyer-Witheford 2004, 6). Human nature is a historical process of change. The human is a natural, biological creature but also a historical and social being. This does not, of course, mean that nothing remains constant in the human. As Marx (1993) puts it in *Grundrisse*: "Hunger is hunger, but the hunger gratified by cooked meat eaten with a knife and fork is a different hunger from that which bolts down raw meat with the aid of hand, nail and tooth" (92). Humans must intake energy to survive, but that energy may come in various forms: "if some people refuse to eat what others consider a delicacy, the fact is that both have a minimum caloric requirement" (Fracchia 2005, 37). The basic suffering nature of the human remains over time, although it is modulated differently in different contexts, and some modulations seem preferable to others. While suffering is not going to be eliminated, it may be to some degree ameliorated.

By considering suffering in light of its amelioration, we look towards the future, and from a Marxist perspective, to communism. In a famous passage from *Capital* Volume III, Marx suggests that communism

3 See Verdoux (2009) for a rare argument for a pessimist transhumanism.

consists of humans collectively and consciously taking control of their relations with nature:

> The realm of freedom really begins only where labour determined by necessity and external expediency ends; it lies by its very nature beyond the sphere of material production proper. … Freedom, in this sphere, can consist only in this, that socialized man, the associated producers, govern the human metabolism with nature in a rational way, bringing it under their collective control instead of being dominated by it as a blind power; accomplishing it with the least expenditure of energy and in conditions most worthy and appropriate for their human nature. But this always remains a realm of necessity. The true realm of freedom, the development of human powers as an end in itself, begins beyond it, though it can only flourish with this realm of necessity as its basis. (Marx 1991, 958-959)

Communism, the "development of human powers as an end in itself," has as its precondition the control of the contingencies of nature, under collective human volition, presumably primarily via the application of technology.[4] Marx's relationship with technology as a whole is ambivalent, but such passages show a promethean dimension to his thought, where technology is an essential aspect of revolutionary thought and practice (Wendling 2009, Chapters 3 and 4). Since the human is part of nature, the governance of the human metabolism with nature must also include the human being itself and its passive, suffering aspect. Yet, Marx never addressed how that aspect of the human is to be regarded in relation to the "true realm of freedom." This connection would be taken up by Soviet Marxists.

Self-Harmonization

Soviet Marxism amplified the technological promotheanism present in certain moments of Marx's writings. In 1918, after Lenin signed the Brest-Litovsk treaty with the Central Powers, ending Russia's participation in the first industrialized war, he mused that "without machines … it is impossible to live in modern society. It is necessary to master the highest technology or be crushed" (quoted in Bailes 1978, 49). Lenin also considered that without "grasp[ing] all the science, technology and art, we will not be able to build life in a communist society" (quoted in Bailes 1978, 52).

For Trotsky, technology was essential not only to combat capitalist imperialism and organize communist society, but to overcome the contingencies of nature via what E.O. Wilson (1998) would later call "volitional evolution" (299). According to Trotsky (1957): "Communist life will not be formed blindly, like coral islands, but will be built consciously, will be tested by thought, will be directed and corrected." An analogy is drawn here between the contingency of nature and the invisible hand of the market, which the Soviets aimed to replace with a centrally planned economy. Trotsky, however, referred to conscious control not only of an economic system, but also of the human body. In his account, we can see a more developed conception of the corporeal, needy aspect of the human that Marx outlined. Trotsky suggests that under communism:

> Man at last will begin to harmonize himself in earnest. … He will try to master first the semiconscious and then the subconscious processes in his own organism, such as breathing, the circulation of the blood, digestion, reproduction, and, within necessary limits, he will try to subordinate them to the control of reason and will. Even purely physiologic life will become subject to collective experiments. The human species, the coagulated *Homo sapiens*, will once more enter into a state of radical transformation, and, in his own hands, will become an object of the most complicated methods of artificial selection and psycho-physical training. (Trotsky 1957)

Ultimately, communist humanity will reproduce itself as a "higher social biologic type" (Trotsky 1957). Marxists commonly deride capital and religion for holding back the potential of human beings, but something else is going on here. Trotsky's contemporary human is described as "coagulated," its changing nature bogged down not only by capital and religion, but by nature itself. Trotsky is not referring only to the changing manifestations of persistent material needs, such as hunger. While he recognizes there are "necessary limits" on the extent to which the human

4 For a very different, ecological reading of Marxian passages such as this (and a truly remarkable book overall) see Foster (2000).

may be changed, these seem to be quite far off. Even "purely physiologic life," presumably referring to physical processes occurring in the body below the level of consciousness, are within the purview of communist revolution. Communism would need "technical means" to achieve this aspect of revolution: "ancient man, clear in thought but poor in technique, was confined. He could not as yet undertake to conquer nature on the scale we do today, and nature hung over him like a fate" (Trotsky 1957).

Trotsky's transhumanist pronunciation is motivated by a pessimistic view of the corporeal, needy aspect of the human. He speaks of the human's "extreme anatomical and physiological disharmony" and the "extreme disproportion in the growth and wearing out of organs and tissues" (Trotsky 1957). Biological frailty imparts to humanity "a pinched, morbid and hysterical fear of death, which darkens reason and which feeds the stupid and humiliating fantasies about life after death" (Trotsky 1957). Volitional evolution is positioned in the same historical register as social revolution: "The human race will not have ceased to crawl on all fours before God, kings and capital, in order later to submit humbly before the dark laws of heredity and a blind sexual selection!" (Trotsky 1957). Here social and natural factors are equated as barriers to communism. Like religion and capital, nature is an oppressive, anti-human force.

While Trotsky should not be interpreted as representative of Marxism as such, his transhumanist perspective is one expression of the notion of the communist new man, which was once widely popular in Marxist circles. The notion of the new man derives from the fundamental Marxist notion that "the mode of production of material life conditions the social, political and intellectual life process in general" (Marx 1978b, 4). The basic idea is that once humans were free of the system of capital, which limits their development, a wholly new type of collectivist human could be created through practices of education, labour and direct technological intervention. For the Soviet psychologist Lev Vygotsky (1994), following the social liberation of humanity from capital, the species "undoubtedly will rise to a higher level and transform [its] very biological organization," producing a "new man" which will "resemble the old kind of man … in name only" (182-183). The Argentine revolutionary Che Guevara (2005) proclaimed that "We will make the human being of the 21st century. … We will forge ourselves in daily action, creating a new man and woman with a new technology."

As Yinghong Cheng (2009) puts it, the new man represented "a new stage in human evolution" in the Marxist imaginary (3). While the notion of the new man was undoubtedly advanced as an ideological counterforce to the hegemony of capitalist individualism, it also included a plan for the physiological revision of the human being. The new man has largely disappeared from Marxist discourse along with the transhumanism of Marxism. The underlying pessimism which motivated it, concerning suffering imposed by nature, did not, however, entirely disappear along with it.

Marxist Pessimism

The path I want to trace towards a revived transhumanism of Marxism proceeds via an idiosyncratic reader of Marx, the philologist Sebastiano Timpanaro, whom Anderson (1989) suggests is "more finally pessimistic, with a classical sadness, than ... perhaps any other socialist thinker of this century" (92).[5] Timpanaro points the way towards the transhumanism of Marxism by arguing for its impossibility. His work is distinctive because it trenchantly insists that suffering imposed by nature should be a central Marxist concern. He described his intent as elaborating "an ever more accurate definition of the links between the struggle for communism and the struggle against nature – without, however, identifying the two in a simplistic way" (Timpanaro 1975,

5 A different kind of Marxist pessimism was developed by Frankfurt School theorists such as Theodor Adorno, Max Horkheimer and Herbert Marcuse. Perry Anderson (1989) holds that between 1920 and 1960 these thinkers lost confidence in a revolutionary future; in its place developed a "pervasive melancholy" (89) and "subterranean pessimism" (88). The increasingly hegemonic reach of capital led the critical theorists to believe that their contemporary capitalism was a "completely administered, integrated, one-dimensional society" which no longer offered any possibilities for revolution (Postone 1993, 85). Technology was no longer the means by which communism would ameliorate the suffering imposed by nature. Speaking of Adorno and Horkheimer, Anderson (1989) argues that it became a dubious idea that "man's ultimate mastery of nature" would lead to a "realm of deliverance beyond capitalism" (89). The central object of pessimism was no longer nature, but attempts to dominate nature, which, the critical theorists held, would lead to the domination of the human, whether in capitalist or socialist hands.

11-12). Class struggle and the struggle against nature are connected by a theoretical orientation he dubbed "materialist pessimism" (Timpanaro 1975, 20). This is not, however, a pre-existing pessimism that is run through a Marxist wash and comes out materialist. On the contrary, it is a pessimism which derives, according to Timpanaro, from the fundamental premise of materialism: that all that exists is composed of matter/energy and nothing else. He defines materialism as:

> above all acknowledgement of the priority of nature over 'mind', or if you like, of the physical level over the biological level, and of the biological level over the socio-economic and cultural level; both in the sense of chronological priority … and in the sense of the conditioning which nature *still* exercises on man and will continue to exercise at least for the foreseeable future. (Timpanaro 1975, 34)

The primacy of the physical does not mean Laplacian determinism or crude mechanistic Marxism in which superstructure is strictly determined by economic base. It refers to the suffering aspect of the human, or "the element of passivity in experience" which obtains regardless of the social relations humans exist within (Timpanaro 1975, 34). Recognition of this, Timpanaro (1975) said, "remain[s] somewhat in the shadows in Marxism" (21). He argued that fundamental natural forms of suffering such as illness, decay and death ought to be recognized by Marxism as "nature's oppression of man" (Timpanaro 1975, 67). In his argument for this we see once again the comparison of social and natural forces:

> Marxists put themselves in a scientifically and polemically weak position if, after rejecting the idealist arguments which claim to show that the only reality is that of the Spirit and that cultural facts are in no way dependent on economic structures, they then borrow the same arguments to deny the dependence of man on nature. (Timpanaro 1993, 75)

According to Timpanaro, Marxists have evaded the problem of natural suffering in two contradictory ways. Some have held that under communism, "sickness, old age and death, although they will continue to exist, will no longer be experienced as ills. Man will be stripped of his own individualism and feel at one with society, eternal through it" (Timpanaro 1975, 17). This is the notion of the new man as ideology. Other Marxists have argued that once scientific and technological progress is no longer immured in the logic of capital, it will experience a new flourishing that will mitigate or eliminate such problems (Timpanaro 1975, 18). This is the notion of the new man as a technological-scientific project, as expressed by Trotsky.

Timpanaro was dubious of both responses. He held that while the first was a "noble wish" it "belongs to a pre-Marxist, a stoic and idealist way of overcoming physical ill, which instead of eliminating it in practice denies it in the realm of ideas" (Timpanaro 1975, 17). His forceful riposte is that if this is an acceptable response, there is no reason for it to not also apply to "social ills," including the ignominy of capitalist class society (Timpanaro 1975, 17). In reply to the second response, he asserts simply that the passive element of the human cannot be entirely eliminated:

> While it is possible to foresee a future in which man's oppression by man will be eliminated (even if one cannot afford any idle confidence in the certainty of this prospect), one cannot imagine a future in which the suffering caused by the disparity between certain human biological limits and certain human aspirations … can be radically eliminated. Of course, many individual diseases will be cured, the average length of the human life will be prolonged, technical means will be developed which increase man's power in particular areas. … But these will always be reformist, and not revolutionary, forms of progress. Man's biological frailty cannot be overcome, short of venturing into the realm of science fiction. (Timpanaro 1975, 61-62)

Passing over the suggestive reference to science fiction for now, we see that for Timpanaro, while a struggle against natural suffering is entailed by Marxism, it is not forecasted to be a successful struggle. Marxism is opposed to suffering derived both from social relations and nature, but nature poses an insoluble problem. A gap between biological limits and human aspirations will always remain:

> Old age remains a highly unpleasant fact. And no socialist revolution can have a *direct* effect on the fundamental reasons that account for its unpleasantness. … Communism does not imply, in and of itself, a decisive triumph over the biological frailty of man, and it appears to be excluded that such a triumph ever be attained (unless one wishes to indulge in science-fiction speculation). (Timpanaro 1975, 63)

The dissolution of capital, the disappearance of wage labour and the value-form and the establishment of conditions for the free development of all humans will not make the natural processes by which muscles atrophy, lungs collapse, bladders fail and brains degrade any less unpleasant. While new medical techniques will be invented and more and more problems ameliorated, the fundamental fact remains that ultimately, humans will continue to suffer. Nevertheless, the suffering imposed by nature "must be confronted ... materialistically – if Marxism is to be not simply the replacement of one mode of production by another, but something far more ambitious: the achievement of the greatest possible degree of happiness" (Timpanaro 1975, 21). Marxism entails the technological revision of nature and the effort to mitigate the suffering imposed by it. Even though this project cannot be completed, a trajectory towards reconfiguring suffering is required. Marxism must accept the suffering of nature as ineluctable even as it struggles against it. It is a doomed project; a prometheanism so pessimistic it becomes fatalistic.[6]

But where exactly should the line be drawn between the technological overcoming of nature and science-fictional speculation? Timpanaro does not specify, but senescence and death are certainly presented as inevitable. Of course, the line between technological reality and science fiction is always moving. Science fiction becoming reality is a foundation of transhumanist thought. So why does Timpanaro draw his line short of, say, radical life extension or mind uploading? Obviously a person's technological imagination depends on all kinds of subjective and contextual factors. But we can also point to a theoretical reason.

Kate Soper rejects Timpanaro's materialist pessimism because she sees it as treating the biological as an "ontological category, and tends to identify materialism with the recognition of this ontological realm" (Soper 1979, 93). Soper's problem is with how Timpanaro asserts, as a materialist, the primacy of matter over mind. This is problematic, holds Soper, because the "effects [of nature] never exist concretely in a pure natural or biological form but only in the content given them by socio-economic relations" (Soper 1979, 92). Her contention is that, if one accepts Timpanaro's point of view, "it is all too easy to say of human society at any point: 'that is the human condition,' and thereby to naturalize it, to collapse the difference between natural and social determinants operating within the social order" (Soper 1979, 95-96). Soper's point is that since all knowledge of nature is mediated by a given social context, there is no way to establish directly the facts of nature. Therefore, Timpanaro's pessimism is based on a false objectivity and all his perspective can offer is a particular view of nature from a specific time and place.

On the other hand, Soper asserts that Timpanaro is right to counter idealism by "pos[ing] the question of the extent to which Marxism either inherently or in its contemporary 'distortions' supports a false reduction of natural to social determinants" (Soper 1979, 72). Here we might think of György Lukács' (1971) claim that: "nature is a social category" (130). Soper thus wants to avoid both naturalizing social factors and socializing natural factors. How is one to do this? Her solution is to appeal to the historical dimension of historical materialism. From a historical perspective, "human culture comprises a single order in which one never discovers purely 'natural' or purely 'social' elements instantiated concretely" (Soper 1979, 62). Against Timpanaro's "givens" which are actually "never given as such," Soper endorses an ontological blurring which applies even to death, which "though it comes to all … comes in a thousand different ways" (Soper 1979, 95). Timpanaro's pessimism is thus evaluated, like other

6 Robert Dombroski (2001) argues that Timpanaro's pessimism "flaws his objectivity" because materialism should "remain an activity grounded in the relational conditions of reality. It passes from science to ideology the very moment it represents a political and ethical viewpoint" (342). Here we see precisely the first Marxist response to the suffering imposed by nature, calling for stoicism and ideological overcoming of nature, which Timpanaro dismissed. For Dombroski, a Marxist ought to be completely neutral concerning illness and death. Timpanaro's riposte that the same logic should then also apply to social conditions producing illness and death stands as an effective rebuttal.

pessimisms, as pathological, and particularly so in the Marxist context because it ignores historicity and thus the inextricable sociality of nature.

But what happens if we temporally invert Soper's historicizing logic in which natural and social factors are inextricably fused? Timpanaro precisely grasps Marx's passive aspect of the human, pessimistically highlighting the suffering that nature imposes on the human. But, as Soper correctly points out, Timpanaro underestimates the extent to which the natural is social and thus he posits particular sufferings, such as senescence and death, as more or less essential, more or less facts of nature. Soper refuses to essentialize particular sufferings because they are, while certainly natural, inextricably tied up with social relations. Her critique of Timpanaro is thus implicitly futural. What is the particular influence of the social on the natural phenomenon of death today? What about in 500 years? For Soper, it is impossible to say. It is impossible, from a Marxist perspective (or any perspective not committed to essentialism) to establish the necessity of particular sufferings imposed by nature because one must always remain open to the future conversion of putative natural facts into social ones. It is unlikely that Soper's critique was intended to persuade Timpanaro to accept the science fiction scenarios he derided. Yet, I argue that this is precisely what her argument, and a Marxist logic, entails. The historical dimension of historical materialism contains its temporal inversion, extrapolating its logic of social/natural interpenetration into the future as well as the past.

Consider Marx's materialist theory of the human, which recognizes the interpenetration of the natural and the social; the human is a recursive process, not an essence. He thought this out primarily via the historical dimension. The substratum furnished by nature is reproduced differently over the course of human history as technologies, cultures and modes of production change. This processual view of the human entails a potentially infinite process, which is impossible to plot in advance. The significance of this impossibility is visible in Marx's musings on a communist definition of wealth. Once the "limited bourgeois form" of wealth is "stripped away" it will be possible to think of wealth in a much broader sense, including the "full development of human mastery over the forces of nature, those of so-called nature as well as of humanity's own nature" (Marx 1993, 488). The mastery of nature is the precondition for another definition of communist wealth as the "absolute working out of [humanity's] creative potentialities, with no presupposition other than the previous historic development, which makes this totality of development, i.e. the development of all human powers as such the end in itself, not as measured on a predetermined yardstick" (Marx 1993, 488). The human has no fixed essence, so its future incarnation remains unknowable and unpredictable, obscured beyond an event horizon constituted by possible interpenetrations of the natural and social yet to come. Wealth in this communist sense is what humans *do not* have now and what they *might* have in the future. It is impossible to say for certain what the development of all human powers as an end in itself would look like. Timpanaro's materialist pessimism is thus not materialist enough. Timpanaro's project of struggle against nature should not have halted at an arbitrary point determined by his present day technology. The struggle against nature opens onto an uncertain future.[7]

Most Marxists have been reluctant to conduct the temporal inversion I have extracted from Marx and Soper. One no longer hears about a new communist human being. Accelerationism comes closest in recent Marxian discourse, and includes transhumanist themes, including technological augmentation of the body. While some accelerationist work, such as Srnicek and Williams (2015), leans towards transhumanism, it does so while omitting discussion of the necessity of class struggle (Brown 2016). Xenofeminists, on the other hand, clearly recognize the oppression of nature: "If nature is unjust, change nature!" (Laboria Cuboniks 2018). Admirably, they do so while also recognizing the necessity of class struggle. Regardless, this paper focuses on explicitly Marxist works and cannot include adequate discussion of the accelerationist current.

The point I wish to make is that unlike Marxists, transhumanists have conducted the temporal inversion I have suggested, and have been readily working out its consequences. Drawing on their ruminations, we can

7 This does not mean replacing a pessimistic appraisal of nature with a triumphalist technological optimism, as I argue below.

sketch a notion of transhumanist suffering which illustrates how to think materialistically about the future of suffering. Transhumanist suffering may then function as a guide for rebooting Timpanaro's pessimistic appraisal of nature into a revived transhumanism of Marxism.

Transhumanist Suffering

Transhumanism refers to a variety of positions united by an interest in "fundamentally improving the human condition through applied reason, especially by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical, and psychological capacities" (Transhumanist FAQ, nd). Transhumanism is compatible with diverse political and philosophical views, though it has been predominantly associated with libertarian and liberal democratic politics and materialistic and scientistic philosophical views (Hughes 2012).[8] Transhumanists sometimes describe their goal as the human species obtaining control over its own evolutionary trajectory (Huxley 1957). In addition to enhancing human capacities and increasing lifespans, many transhumanists have even more ambitious goals, including overcoming "involuntary suffering, and our confinement to planet Earth" (Humanity+ 2009).

For transhumanists, the locus of suffering is primarily the natural, rather than the social, realm and it derives centrally from the human body. Transhumanists argue that "aging is a disease" (Vita-More 2020) and that "in some ways, human minds and brains are just not designed to be happy" (Transhumanist FAQ, nd). The amelioration of suffering is expected to come primarily from technological progress. Few transhumanists would disagree with the idea that the "extensive suffering that remains in the human world" can and should be "alleviated through sustained scientific advance" (Kurzweil 2005, 396). As Hughes (2007) puts it, transhumanists "generally believe that most forms of suffering, such as mental and physical illness, unwanted death, cruelty and poverty can be overcome with human technological mastery and the advance of liberal democracy" (15). Thus, transhumanism can be understood as a project of the aggressive technological revision of nature, primarily routed through a market economy.

Transhumanism is not, as many critics make it out to be, aimed at achieving some kind of perfection (Idhe 2010; Mahootian 2012; Noonan 2016; Tirosh-Samuelson 2018). James Hughes (2007) correctly calls the criticism concerning perfection "specious, since no proximate transhumanist project of transcendence would leave posthumans without any challenges or limitations" (15). An exception here is Ray Kurzweil, whose millenarian moments exhibit a belief in a godlike future state. As far as I know no other transhumanists, excepting religious transhumanists like the Mormon Transhumanist Association, advocate such a perfectionist position. Transhumanism is more accurately conceived as a project of "improving nature's mindless 'design,' not guaranteeing perfect technological solutions" (More 2010, 139).

In general, it is safe to say that transhumanists tend to think more in terms of bodies and technologies than classes and modes of production, and in terms of technological, rather than social, revolution. For Nick Bostrom:

> There are limits to how much can be achieved by low-tech means such as education, philosophical contemplation, moral self-scrutiny, and other such methods proposed by classical philosophers with perfectionist leanings ... or by means of creating a fairer and better society, as envisioned by social reformists such as Marx or Martin Luther King. (Bostrom 2005a, 9)

The transhumanist philosopher David Pearce (1995) asserts similarly that "no amount of piecemeal political and economic reform, nor even radical social engineering, can overcome ... biological reality." He argues that "attempts to build an ideal society" will founder on the flawed biological machinery of the human, whether they are "utopias of the left or right, free-market or socialist, religious or secular, futuristic high-tech or simply cultivating one's garden" (Pearce 2007). The primary barrier to transhumanist revolution

8 While some transhumanists, such as Kurzweil, imagine the social relations in their transhumanist futures to be staunchly capitalist market economies, and libertarian transhumanists describe transhumanism as "under siege from socialism" (Istvan 2018), yet others are members of the Democratic Socialists of America (Murphy 2018).

is the human body, rather than the social relations those bodies live amongst. Conceived as a barrier, the body is the central cause of suffering. But what distinguishes a transhumanist conception of suffering from more conventional conceptions? I suggest it is infrastructural and expansive.

Infrastructurality

By calling transhumanist suffering infrastructural, I mean that it is a conception of suffering in which suffering derives from the material subsystems of the body which are the foundations for human life. Suffering derives from processes and structures existing far below the level of consciousness and can only be ameliorated by intervening at that infrastructural level. For instance, consciousness (whatever it is) depends for its existing, at the minimum, on the infrastructure of the brain's neural networks and the limbic system. Pathologies of consciousness, from an infrastructural perspective, are to be addressed by intervening directly in the functioning of those physical systems.

Pearce demonstrates the infrastructurality of transhumanist suffering with his version of transhumanism called abolitionism. Pearce identifies as a negative utilitarian and holds that transhumanism should aim to minimize the total amount of suffering in existence, aiming towards its abolition. Pearce (1995) argues that we should use technologies including nootropics, nanotechnology and genetic engineering, to "eliminate aversive experience from the living world" by "eradicat[ing] completely" the "biological substrates of suffering" for all entities capable of suffering. Pearce traces the origins of suffering to the "hedonic treadmill" proposed by psychologist Philip Brickman and social scientist Donald Campbell. Brickman and Campbell (1971) argued that pleasure is essentially relativistic, in that increased levels of pleasure entail the need for further levels of pleasure if pleasure is to continue being experienced. Essentially, their argument is that there is no final solution to the problem of suffering because pleasure always recedes into the distance as its novelty fades. Pearce holds that the experience of the hedonic treadmill results from our bodily infrastructure, adapted for evolutionary success, not the absence of suffering. The precise structure of Pearce's perspective is not of interest here. The point I want to draw attention to is that, in contrast to a perspective which considers suffering as deriving from and possibly being ameliorated by social factors, and in contrast to a perspective that sees suffering as deriving from the body, but possibly being ameliorated by discursive social practices like therapy, mediation, religion or philosophy, abolitionist transhumanism targets molecular and chemical processes for its interventions. For Pearce (1995), suffering derives from "our corrupt code" and the "Darwinian pathologies of consciousness" and may be overcome via the "neurochemical precision-engineering of happiness."[9]

Hughes (2007) correctly points out that the abolitionist position is not held by all transhumanists, "many of whom worry that such perceptual and mood regulation might lead to a Panglossian conviction that there is nothing about the world that needs correction" (15-16). However, a less totalitarian but still very infrastructural approach to ameliorating suffering imposed by nature is ubiquitous in transhumanist thought; few transhumanists would object to the claim that the "roots of suffering are planted deep in your brain" and that therefore a significant reworking of its systems is necessary and desirable (Bostrom 2008, 4). Timpanaro did not possess such an infrastructural conception of suffering. He held that technological progress would cure diseases and increase lifespans, but he did not imagine that the subjective experience of suffering might be eliminated by rewiring its physical infrastructure nor that the processes of senescence leading organisms to necessarily perish might be reengineered.

Expansivity

Transhumanist suffering is expansive because it is a conception of suffering which refuses to be defined in relation to any essentialist conception of the human. Transhumanism's open-ended materialist conception of the human is shared by Marxism, but the former expects that the human will be dramatically technologically reconfigured and this entails that suffering has a vast temporal dimension which extends into the future.

9 Such a state of engineered bliss, Pearce argues, would not be one of stoned withdrawal from the world but one of increased freedom: "many dopamine-driven states of euphoria can actually enhance motivated, goal-directed behaviour in general" (Pearce 1995).

The contemporary human is a "work-in-progress" (Bostrom 2005a, 4) capable of perceiving and understanding only a "minute subspace of what is possible or permitted by the physical constraints of the universe" (Bostrom 2005a, 5). Many possible modes of being are thus beyond the comprehension of contemporary humans. Progress towards them is required to even discern if and whether they exist and whether or not they are desirable. Transhumanism thus demands practical investigation or "the quest to develop further so that we can explore hitherto inaccessible realms of value" (Bostrom 2005a, 9).[10] The transhumanist view of the human and its possible modes of being has (at least) two expansionary consequences for a conception of suffering. First, it expands the scope of contemporary human suffering. Second, it implies an inconceivable posthuman manifold of suffering.

First, to consider the human as what technologically might come to be is to confront what it is currently not. As Bostrom (2005a) puts it, the "limitations of the human mode of being are so pervasive and familiar that we often fail to notice them, and to question them requires manifesting an almost childlike naiveté" (5). Transhumanism thus reveals dimensions of suffering that are not typically regarded as such, or are treated as necessary burdens to bear rather than problems to ameliorate. Death is perhaps the most dramatic of these, semantically supercharged as it is by millennia of religious and secular apologetics. Transhumanist gerontologist Aubrey de Grey (1999) contrarily refers to death not as an eternal condition of human existence but as "negligible senescence" which could be overcome by engineering (189). But there are also more prosaic forms of suffering, such as a scholar's mental incapacity to retain everything she's read and written, especially in light of the failure of a hard drive that was not backed up. While, as Nietzsche would likely point out, it would be undesirable to have flawless memory, few academics, at least, would object to an increased capacity.

Secondarily, since the vast majority of transhumanists do not believe in achieving a state of perfection, the expansivity of suffering implies that they believe that any future modes of posthuman being will come with their own, likely currently inconceivable, dimensions of suffering. If it is the case that the human "cognitive makeup may foreclose whole strata of understanding and mental activity" (Bostrom 2005a, 6), then the dark side of posthuman modes of being is an expanded conception of suffering as privation or deformation of those very modes. The possibility of suffering will always be renewed as the human transforms into a posthuman state. While Kurzweil's rather religious Singularitarian transhumanism spends little time considering this sort of possibility, it is implicit in the open-endedness of transhumanism. More cautious transhumanists thus advocate "careful, incremental exploration of the posthuman realm" (Bostrom 2005a, 9) rather than full throttle acceleration into the future.

In sum, transhumanist suffering demonstrates the temporal inversion I have extracted from Marx and Soper. Applied to Timpanaro's pessimism, it extrudes it from a barrier into a path. An infrastructural conception of suffering drawn from the contemporary human is projected into the indefinite future of the human that builds itself. Contemporary forms of suffering imposed by nature are not natural facts that are to be heroically, yet fruitlessly, assailed. Instead, they are to be investigated as contingencies which might be overcome, without any expectation of a perfected state awaiting at the end of history. Transhumanist suffering thus compels one to adopt a posture of perpetual negation towards the existing world, rather than accepting, at an arbitrary point, its current state as natural. A posture of negation is not foreign to Marxism. It has a long history of directing negation at social relations, but it has forgotten how to negate the putatively natural.

Conclusion: The Ruthless Criticism of Nature

In a letter to his friend Arnold Ruge, Marx (1843) described a distinction between his own perspective on communism and that of the "dogmatists." He held that it should be admitted that no one has an "exact idea what the future ought to be" and that therefore "we do not dogmatically anticipate the world, but only want to find the new world through criticism of the

10 Considering transhumanism's predominantly favourable appraisal of capitalism, this might be provocatively interpreted to mean "hitherto inaccessible realms of surplus-value," though Bostrom intends value in a more general sense here.

old one." Although undeniably advocating a futural perspective, Marx put the exact details of the future beyond an event horizon. He went on to suggest an immediate goal of the "*ruthless criticism* of all that exists, ruthless both in the sense of not being afraid of the results it arrives at and in the sense of being just as little afraid of conflict with the powers that be" (Marx 1843, emphasis original). However, Marxism has tended not to subject nature to ruthless criticism.[11] Nature, and the suffering imposed by it, have been accepted as, well, *natural*. Marxism neglected its latent transhumanism and it was left to the transhumanists to ruthlessly critique nature.

To conclude, I consider how one might conduct the ruthless criticism of nature by drawing on Werner Bonefeld's negationary Marxist approach. Like most Marxists today, Bonefeld is not concerned about what Timpanaro called the oppression of nature, but rather with suffering imposed socially by the domination of capital. Yet, his striking language offers a convenient means, if shifted to the context of the oppression of nature, to articulate its ruthless criticism. Bonefeld (2014) refers to communism as the "society of human purposes," highlighting its connection to human volitional evolution (226). Like Marx, he refuses to positively define communism, asserting that it "can be defined in negation only" (Bonefeld 2014, 226). The society of human purposes represents a historical rupture; it "stands in opposition to all hitherto history" (Bonefeld 2014, 220). What Bonefeld calls critical theory, and what Marx might have called ruthless criticism, can only be critical if it:

> refus[es] to be taken in by a philosophy of progress that in its entirety is tied to existing social relations. It therefore refuses to 'sanction things as they are.' Its conception of society is entirely negative. … It therefore does not sign up to the idea of a progressive future. Instead, its 'objective goal is to break out of the context from within.' … Its reality is entirely negative (Bonefeld 2014, 221).

For Bonefeld, communism is wholly alien to our contemporary, inverted world of capital. Thinking that aims to achieve such a new way of social being can only begin by negating the existing world. Bonefeld's negatory salvo could easily be redirected against nature, as the notion of transhumanist suffering shows us. How is it possible that Marxists endorse the current state of suffering imposed by nature today as natural? Should not a Marxist goal be to *denaturalize nature*, just as it is to denaturalize religion and capital? What is desirable in nature cannot be decided in advance, but only by collective humanity investigating its technological and social options and implementing them, or not. Pearce (1995) argues that the technological abolition of suffering will eventually become a "social policy issue. Passively or actively, we will have to *choose* just how much unpleasantness we wish to create or conserve … in eras to come."[12] Materialism, whether transhumanist, Marxist, or both, should refuse to accept, without collective investigation, whether our diverse sufferings are indeed inevitable or desirable. Ray Brassier (2014) puts it well: "we should be very wary of anyone telling us our suffering means something" (481).

Musing on a definition of wealth under communism, Marx describes a situation where the human "strives not to remain something he has become, but is in the absolute movement of becoming" (Marx 1993, 488). A materialist perspective entails this processual view of the human as that which produces itself. Marxism has rightly pointed out this self-productive aspect of humanity and how it is inhibited and directed towards stupid ends by capital and religion. The transhumanism of Marxism, latent for a while now, entails that nature's obstruction of the self-production of humanity should also be recognized. Such a Marxism might be conceived, in words borrowed by Timpanaro from his favourite poet Giacomo Leopardi, as a "great alliance of intelligent beings opposed to nature" (quoted in Timpanaro 1979, 49). A denaturalized nature would appear, alongside capital and religion, as an enemy of humanity.

11 This is not to say that Marxism has not considered the question of nature; there are many excellent examples of that (Vogel 1996; Burkett 1999; Foster 2000; Schmidt 2014). What I mean is that Marxism tended not to approach nature with the initial attitude of total negation it directs towards capitalist and religious social relations.

12 An interesting avenue for future research concerns delineating which forms of suffering are in fact necessary. Bostrom (2005a) points out that while we can likely transcend "many of our biological limitations" there might be "some limitations that are impossible for us to transcend, not only because of technological difficulties but on metaphysical grounds" (8). The possibility, for instance, that all matter, including the human brain and body, moves in ways rigorously determined by its previous states, and hence that agency is wholly illusory, is a great source of suffering to many, including pessimist horror author Thomas Ligotti (2012), for whom it is a central trope.

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Marxist Transhumanism?

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ABSTRACT: The paper argues that a Marxist transhumanism is politically and ethically incoherent. While it is true that transhumanists and Marxists believe that human beings are self-determining, self-transforming, transhumanists are committed to transcending the material conditions of organic life. Their ultimate aim is to encourage the emergence of an artificial superintelligence whose self-creative capacities are not limited by the needs of organic life forms. Socialism, by contrast, is a political and ethical movement committed to ending the suffering caused by capitalism, by changing social institutions and the values according to which resources are distributed and utilized. The success of the transhumanist project would render all social and political theories and institutions obsolete. The socialist use of technology would expand human life-capacities while preserving the ties of mutual need that link us together and make human life meaningful and worthwhile.

KEYWORDS: transhumanism, Marxism, humanism, human nature, technotopianism

At an international conference in 1965 devoted to the prospects of socialist humanism, Marcuse added a question mark to the title of the symposium. His talk: "Socialist Humanism?" turned what the organizers of the symposium assumed to be the solution into a problem. Marcuse was not skeptical about the value of humanist values of all-round cultivation and personal development, of peace and mutuality, but rather of there being any place for those values in the world as it was presently constituted. Humanist values attained their fullest philosophical expression in the flourishing of liberalism in the nineteenth century, but the capitalist economy with which liberalism has always been bound in contradictory co-evolution negated the social conditions for the flourishing of the all-round individual. "The human reality," he argued,

> is an 'open' system: no theory, whether Marxist or other, can impose the solution. The contingency of history, which today denies humwanism, may also one day deny the denial. Meanwhile, there are the enslaved human beings who must accomplish their own liberation. (Marcuse 1965, 109)

Marcuse's point was that the concrete task was not to realise the exulted ideals of the liberal past but to free the victims of the collapse of those values from the violent one-dimensionality that capitalism became.

I want to pose an analogous question about the relationship between Marxism and transhumanism. Like Marcuse, I pose a question in the title of my paper. As Marcuse wondered whether a socialist revival of the ideals of humanism was the most pressing issue in 1965, so too I wonder whether Marxist sponsorship of transhumanist ideals is the most pressing issue in 2021. Marcuse thought that humanist values were anachronisms which might one day become relevant again. I will argue that transhumanist ideals are utopian projections which might one day become realities. However, helping

them become realities is not the most urgent task of Marxists today.

Moreover, if transhumanist technotopia should one day come to be, it would be a world in which all forms of political theory, indeed, all forms of social and political institution, would have become irrelevant, because the needs that they serve have been transcended. Hence there can be no Marxist transhumanism, not because there are not some compelling overlaps in their conceptions of human potentiality, but because the problems they are trying to solve are different. Transhumanism is trying to solve the problem of the finite powers and possibilities of organic life, while Marxism is trying to solve the problems of exploitation, alienation, and oppression. It is true that a transhumanist solution to the problem of the finite powers and possibilities of organic life would also solve, *a fortiori,* the problems of exploitation, alienation, and oppression. However, since there would no longer be human beings or human societies in any recognisable sense, the way in which those problems would be solved cannot be understood in terms of any existing political theory. There may indeed come a time when transhumanist goals are realised, but the realisation of those goals would not be socialist, or liberal, or capitalist, or anything conceivable in terms of theories formulated by organic beings struggling to solve problems of organic life. Meanwhile, contemporary slaves continue to toil in toxic and precarious industries feeding the technological beast towards which the transhumanists look for salvation.

Socialism, like any political theory, presupposes certain material problematics that we can call, following John Rawls (who was in turn following Hume) "the circumstances of justice" (Rawls 1999, 109). The most important circumstance of justice is the relative scarcity of need-satisfying resources. As we will see, Marx sometimes talked about socialism as a society of superabundant goods (and contemporary "fully automated luxury communists" like Aaron Bastani foresee the day when this super-abundance will have become actual) (Bastani 2019). However, Marx also worried about the principle of distribution of a socialist society, and these worries, it seems to me, suggest that he understood that life on a planet of finite resources will always demand choices between alternatives. How these choices are made in large part determines the character of a society: democratic societies start from the universality of human needs and allow everyone to participate in the decisions about how relatively scarce resources will be allocated; class societies prioritise the interests of the ruling class in accumulating wealth for themselves. The goal of transhumanism is not to democratise allocative decisions so as to ensure comprehensive need-satisfaction, but rather to free creative intelligence from its embodied basis, thereby making all forms of social institutionalization of allocative decisions irrelevant. The "trans" in "transhumanism" means transit towards and transcendence of the "frames of finitude" that define human life and make politics, critical theory, and alternative societies relevant (Noonan 2018, 4).

I will unfold this argument in three steps. In the first I will argue that while there are more and less strident versions of transhumanism, only the maximalist program of complete transcendence of the frames of human and natural finitude should really be understood as *trans*humanism. While this claim might sound like an attempt at *reductio ad absurdum*, I in fact take the fulfillment of maximalist program as a serious possibility. The scientific possibility of something like a superintelligent computer can no longer be excluded. However, my taking the possibility seriously poses the problem of whether it is *desirable* to pursue it. My answer will be that it is not desirable to pursue it.

One might object that my answer to this question contradicts Marx's own hopes about the liberatory potential of technology. In the second section I will address this objection by examining Marx's complex views about the connection between liberation and technological development. There are at least three distinct (but related) positions, only one of which is at all analogous to transhumanist technotopianism. However, even where Marx seems to tie the human future most tightly to technological development, he is still concerned with human solutions to human problems.

In the third section I will thus conclude that transhumanist Marxism, while perhaps not oxy-

moronic, is not a politically coherent synthesis of traditions. Instead of transcendence of the flesh, Marxism is committed to humanist values for a finite species on a finite planet. The paper wraps up with some reflections on what the life-valuable uses of technology might be in a socialist humanism for the twenty-first century.

I. Transhumanism and Technotopia

The term "transhumanism" was coined in 1957 by the biologist Julian Huxley (Huxley 1957, 13). He could already foresee from his vantage point just a few years after the discovery of DNA that theoretical understanding of the molecular structure of life could confer astounding practical power over its future. "Trans" thus meant, for Huxley, movement towards and beyond the human as an organism dependent, like other organisms, on nature and at the mercy of natural selection (Huxley 1957, 16). Knowledge of the genome would give future human beings the power to choose and program the traits that will define our species. Huxley could not foresee the significance of the development of computing technology and artificial intelligence for transhumanism. He hoped that genetic engineering could improve human life, but he could not yet imagine the complete transcendence of our organic nature. While neither genetic engineering nor artificial intelligence have yet fulfilled the highest hopes of their proponents, those hopes cannot be dismissed as science fiction any longer. In what follows I will assume that practically immortal, artificially intelligent life forms are possible and their creation or emergence is the ultimate goal of proponents of transhumanism.[1]

As James Steinhoff argues one of the first and best attempts to read Marxism through a transhumanist lens and transhumanism through a Marxist lens, transhumanists are a politically, socially, and economically diverse lot (Steinhoff 2014, 2). Social democrats like James Hughes worry about egalitarian access to enhancement technologies and look to public institutions to ensure it (Hughes 2004). According to Steinhoff's research, a large plurality of members of the World Transhumanist Association identify as "left" (Steinhoff 2014, 3). Most are probably not Marxists, but their "leftism" nevertheless indicates some degree of concern for democratic control over the ways in which technological development is integrated into human life. That concern is not universally shared amongst transhumanists. The best known and most utopian of them see technological development as an automatic product of capitalist markets. Thus Ray Kurzweil argues that "I believe that maintaining an open free market system … will provide the most constructive environment for technology to embody widespread human values" (Kurzweil 2006, 420). Capitalist markets not only monetize incentives to innovate, they allow consumers "free choice' to purchase whatever enhancements come on stream. Joseph Jackson thus bookends, from the consumer perspective, Kurzweil's argument developed from the perspective of the producers: if allowed to spend their money how they wish, the rich will provide a market for new technologies which will in turn drive innovation in an expanding virtuous circle (Jackson 2008, 6).

I am not going to focus on the political differences that distinguish transhumanists into different camps. I am concerned with the connection – asserted by Kurzweil above – between unbridled technological development and "widespread human values." It is true that the connection between reason, science, technology, and the improvement of human life is also essential to one strand of humanist philosophy. The Enlightenment sowed the first seeds of *scientific* hope in the possibility of immortality. Condorcet anticipated transhumanist Aubrey De Gray's idea of "longevity escape velocity" in his *Sketch for an Historical Picture of the Progress of the Human Spirit* (De Grey 2007, 330-331; Condorcet 2017). Once monarchical and colonial tyrannies had been conquered and peaceful relationships had become predominant across the globe, human energies could be turned to the crucial tasks of wealth and knowledge production. With more resources and intelligence mobilised on a global scale, health would improve and diseases would be

1 While I believe that there are significant differences between human and machine intelligence, I will not enter into those debates here. I will also not discuss the serious practical ethical problems raised by genetic engineering. For a discussion of the later see Habermas, 2003.

cured. Condorcet could see no specifiable limit to such progress:

> Would it be absurd now to suppose that this improvement is capable of indefinite progress; to suppose that the time must come when death will be due only to extraordinary accidents or to the decay (slower and slower down through the generations·) of the person's vital forces, and that eventually the amount of time between a person's birth and this decay will have no assignable value? (Condorect 2017, 109)

Condorcet anticipates by two centuries the central transhumanist argument: scientific knowledge is self-ramifying *if political authorities and religious fanatics are prevented from interfering with it.*

Max More is thus fully in keeping with this adventurous version of humanist philosophy when he argues that transhumanism is a "life philosophy … emphasizing a meaningful and ethical approach to living informed by reason, science, progress … and on taking personal charge of creating better futures … through reason, technology, scientific method, and human creativity" (More 2013, 4). I do not disagree with Kurzweil or More that human beings are capable of self-transformation, that science has afforded us both deep understanding of and great technological power over physical nature, or that this knowledge and power can be used to free human creativity from certain forms of oppressive limitation. If we stay at the level of these generalities, then Steinhoff is correct to argue that there is a deep affinity between the transhumanist understanding of human nature and Marx's equally "open" understanding (Steinhoff 2014, 6). To be sure, Marx argued that the "human essence" is no abstraction, but in reality the "ensemble of social relations."(Marx 1976, 4). These relationships not only change, they can be consciously changed by human beings, and technology is the means by which we change them. Marx, like More and Kurzweil, also sees human history as an adventure (albeit one rather more fraught with domination and violence than most transhumanists discuss) and would not venture a definitive ruling on what shapes future forms of human society might take.

Steinhoff goes on to argue that the main difference between Marxism and transhumanism is that the transhumanists do not fully understand the way in which social institutions and dynamics shape decisions about which technologies are developed and to what uses they are put (Steinhoff 2014, 4-5). From his perspective, Marxists should adopt transhumanist goals so that enhancement technologies are not used to deepen alienation, exploitation, and oppression, but better contribute to all-round human freedom. Left unchallenged, the capitalist form of technological development threatens the future with a "capitalism without human beings": a world in which a tiny ruling class controls artificially intelligent machines to satisfy their every want or whim, while the rest of humanity is rendered a miserable, dominated surplus population (Dyer-Witherford, Kjøsen, and Steinhoff 2019, 111). As I will argue in the next section, Marx foresaw an analogous possible future. To be sure, such a future is one that socialists must do everything to avoid. I maintain, nevertheless, that as socialists we remain committed to a different sort of humanist ethic whose foundational value is not adventure and constant change, but care and concern for each other's well-being. I think that there is a way that adventure and care and concern can be coherently synthesised, and I will develop that synthesis in the final section. My position is that the transhumanists do not desire a synthesis, but an absorption of the human into the technology.

If one argues, as I do, that caring concern is the foundational humanist value, then it follows that we must understand the goal of transhumanism – the transcendence of the human needs that connect us to each other and form the material basis of care and concern, as *ultimately* anti-human, as tantamount to euthanasia. Nick Bostrom, amongst the most thoughtful of transhumanist philosophers, puts the point with characteristic clarity: our bodies are death traps, and so long as our sentient and creative capacities are "trapped' within them, there will be limits to the good that we can experience (Bostrom 2005, 4). The problem is, one cannot be a *human being,* and not experience the world as an embodied, social, self-conscious agent. *Living* as an embodied, social,

self-conscious agent demands wrestling against the limits our world imposes. The limits can be stretched and pushed, but so long as we are human, they will remain. Hence, the human must be destroyed in order to save the human.

That which transhumanism wants to preserve about human beings is the power – typically associated with the divine – to be able to think or wish material realities into being. The gods do not have to work in order to create the worlds that they desire: In the Beginning was the Word, and all God had to do to make it flesh was speak it. Transhumanism wants the end of the adventure without the striving, sweating, and fearing that makes human effort essential to good human lives. From their perspective, the good is the enjoyment that completes the struggle, not the struggle. I am not exaggerating when I say that the positive goal of transhumanist philosophy and science is the abolition of material reality. Kurzweil's Singularity, Bostrom's autopotent super-intelligence, and roboticist Hans Moravec's infinite virtual reality are all defined in terms of the abolition of the difference between conception and realization. This speculative superintelligence literally thinks whatever reality it desires into existence. For Kurzweil, the most rapturous of the three, the Singularity is quite literally an apotheosis.

> Evolution moves towards greater complexity, greater elegance, … greater intelligence, greater beauty, … and greater levels of subtle attributes such as love. In every monotheistic tradition God is likewise described as all of these qualities, only without limitation … evolution moves inexorably towards this conception of God, although never quite reaching this ideal. We can regard, therefore, the freeing of our thinking from the severe limitations of its biological form to be an essentially spiritual undertaking. (Kurzweil 2006, 389)

Should we take this projection seriously?

I think that we should. If we accept the premise of the boundless openness of the future, then it follows that there is no specifiable limit to the improvement of scientific understanding and technological power. One does not have to subscribe to this teleological misinterpretation of evolution to accept the logical and physical possibility of its terminal point: a superintelligence which is capable of simply 'thinking' the objects of its desires into existence. Why should Marxists, who share an open-ended understanding of progress, not accept this goal?

There are three interrelated reasons. The first, as I have already noted, is that the transcendence of the human means the transcendence of human society, and the transcendence of human society means that all theories and projects about the best form of society would become anachronistic. Now, it might well be the case that over the very long future something like Kurzweil's Singularity comes to be. The time scales over which that event might happen mark the second reason why Marxist goals remain distinct from transhumanist goals.

If a superintelligence were to emerge, the two centuries long conflict between capitalism and socialism would be resolved in favour of cybernetic superintelligence, not the bourgeoisie or proletariat. But the time scales we are talking about exceed the bounds within which political struggles make sense. The sort of evolution of divine superintelligence that Kurzweil predicts is not going to happen on the scale of days, years, decades, or probably even centuries. But political struggle is not for the sake of a better world 100 000 years from now, it is for the sake of tomorrow. Its aims therefore must be institutional changes that are practically realizable in the present and which prioritise the re-distribution of resources that bio-social agents need right now to live meaningful, creative lives. If our focus is on the emergence of a superintelligence at some point far, far down the road, then the priority is to ensure that technological growth proceeds uninterrupted by "noise" like class struggle.

This conclusion brings me to the third and final point, which is a synthesis of the first two. One could accept that if there are no humans there will be no human society, and that the time scales of political struggle and technological transcendence of the flesh radically differ, and yet still conclude, with Steinhoff, that the truth of both does not rule out the coherence of a synthesis of Marxism and transhumanism. If it were the case that the goal of transcendence is

agreed to be in the best interests of human beings, and that a socialist society could better marshal the intellectual resources needed to get us there, then we need a socialist (near) future to create the conditions for the transhumanist distant future.

I agree with this rejoinder in so far as it shows that even the truth of one and two alone are not sufficient grounds to reject the cogency and desirability of a Marxist-transhumanist synthesis. The third reason that distinguishes Marxist from transhumanist goals is intimately connected to the truth of one and two but adds a new consideration which allows my argument to evade the force of counter-considerations like Steinhoff's. Kurzweil thinks of his Singularity as the transition that leads to a new life form that values human goods, but is free from the limits within which humans experience them: pleasure without pain, knowledge without ignorance, achievement without effort. Yet, there are no grounds for the conclusion that a divine cybernetic superintelligence would care at all about mundane human goods and evils, any more than a (properly understood) Biblical or Quranic God would care if the wide receiver makes the game winning catch. As Bostrom and Moravec both point out, it is much more likely that such a superintelligence would, at best, be totally indifferent to the pleasures of its distant human ancestors, and at worst, would wipe us out as impediments to its fuller flourishing. As Moravec notes, referring obviously to the history of European colonialism, it is rare that the societies of less technologically advanced communities survive intact after contact with more technologically advanced ones (Moravec 1999, 189). Historical evidence thus suggests that the emerging superintelligence would simply eliminate us as a nuisance. If the good of an entity is a function of its needs, powers, and capacities, and the needs, powers and capacities of a superintelligence differ radically from our own, then it is the height of ethical and political naivete to expect that whatever the Singularity becomes will be concerned with what human beings consider good. Bostrom is likely correct when he argues that it is much more likely to be interested in calculating mathematical infinities than freeing human pleasures from mortal limitations (Bostrom 2013, 14).

When we add this third consideration to the first two, we arrive at the full reason why Marxism is not a transhumanism in the robust definition of the term that I am using. Socialism, as a plan for a substantively equal, democratic society which satisfies its member's needs for the sake of enabling the realisation of their intellectual and creative capacities in meaningful, valuable, and valued ways is a human project, for human beings, with human purposes, values, and pleasures. A superintelligence that has evolved beyond the limits of organic life is not going to realise this goal. It is not even going to take notice of it as an interesting factoid of its ancient history. Socialism only makes sense as a near-term goal of struggle for human beings whose needs are not met in capitalist society. Transhumanism does not take the reform of human society as its goal. It is *transhumanistic* because organic life is treated as a way station on the road to something that will be fundamentally different. The interesting question, therefore, is not whether Marxism and transhumanism can be synthesised. If I am correct, they cannot be without losing sight of the temporal and material frames within which political projects make sense. The interesting question is: what is the role of technological capacity in the creation of the conditions for a transition to socialism? I will approach that problem first from a historical perspective by examining three distinct answers to that question found in Marx's works.

II. Marx: Socialism, Humanism, Technotopia and Dystopia

As I have already admitted, one can certainly find in Marx many passages to support the speculative interpretation that had Marx lived today, he would have embraced the technotopian possibilities of advanced robotics, artificial intelligence, and genetic engineering. This section will not contest such speculative readings but rather focus on trying to systematise, albeit briefly, the different attitudes towards the relationship between technological development, the material conditions of possibility of a socialist society, and the ethical grounds of a socialist society. I will

argue that there are at least three distinct positions.

The first is his early humanist interpretation. In *The Economic and Philosophical Manuscripts of 1844* Marx reads science and technology as one expression of a holistic human creative power. Their development helps establish the conditions for socialism, but the ethical ground of socialist society, its justification and organizing value system, is the all-round emancipation of non-alienated labour from all oppressive, reified forces. The second has been typically read as a growing technological determinism according to which revolutions are products of a contradiction between the forces and relations of production. In this view, once socialism frees technological development from its capitalist "fetters" it will simultaneously free human life from most of the constraints that material reality currently exerts over it. Finally, there is what I will call the nightmare view, less fully developed but nevertheless present in his later works. In this view human labour becomes completely subsumed under a centrally organized, totally automated capitalist machine. This view is a nineteenth century version of the "inhuman power" which Dyer-Witherford, Kjøsen, and Steinhoff warn awaits us if AI is not freed from its capitalist development trajectory.

The key to understanding this first position on the relationship between technology and socialism is to properly understand the view of human nature that underlies it. In 1844, Marx sees human nature as double-sided: a passive, organic side that is dependent on nature and other people, and an active, self-creative side that Marx considers our truly human species being (Marx 1975, 275). Steinhoff should be credited for acknowledging that Marx pays equal attention to both sides of human nature (Steinhoff 2014, 5). The passive side is rarely discussed by commentators on the *Manuscripts*, who tend to focus almost exclusively on human self-creativity.[2] However, if we ignore the passive side, we cannot understand the value that underlies human social relationships. Our lives depend upon satisfying our needs. In order to satisfy our needs, we must work collectively. In capitalist society, because we are alienated from nature and each other, we think that we are just working for ourselves, when in fact our individual labour, mindless as it might be in the details, is in truth a contribution to the production of the resources that everyone needs.

The passive side of human nature is the spur that causes us to labour, but labour is ultimately for the sake of collective and individual life and well-being. Marx does not see science and technology as independent causal forces in 1844, but rather as *responses* to our needs. Either we work or we die: our intelligence is first of all directed to the problem of survival. However, since intelligence is active, it begins to build models of how nature works (science) which in turn becomes guides to the creation of technologies that increase the power of human labour. To repeat: nowhere in these manuscripts does Marx argue that technology is a reified power which, at a certain point becomes an independent factor guiding human history. He does not take that step, I maintain, because he is still under the influence of Feuerbach and appreciates the *value* of the passive side of our being. Nature, he argues, "exists … as a bond with man – as his existence for the other and others existence for him – and as the life-element of human reality" (Marx 1975, 298). Although industry is the "open book" of human "essential powers" it never becomes so powerful that the passive side of our being is overcome (Marx 1975, 302). Because we are dependent and interdependent on factors beyond our control, human life involves suffering. But suffering is not a cross to be poetically or spiritually borne, it is an occasion for forging meaningful social relationships.

On the one hand, our needs are simply natural facts. On the other, they draw us together: in political struggles against alienation and intrinsically valuable social bonds. They are, in the words of John McMurtry, "felt bonds of being" which prompt us to work not only for their raw satisfaction, but in ways which are meaningful, valuable and valued, and sensuously enjoyable (McMurtry 1998, 23). The ethical foundation of socialism is non-alienated social relationships, not unbridled labour productivity. The ethical goal of socialism is the creation of the conditions for authentic social individuality, not

2 The most notable exception is the eccentric but excellent work of Sebastiano Timpanaro. (See Timpanaro 1980).

the apotheosis of machines. There is no indication that Marx believes that authentic social individuality represents the transcendence of our organic being or escape from its passive side. If there were no passive side, no dependence or interdependence, there would be no social bond. The lives of authentic social individuals will be furnished with everything they need to develop affirmative and mutualistic relationships with others, but there will still be a gap between self-image and social reality. As he poignantly puts it, "if you love without evoking love in return … then your love is impotent – a misfortune" (Marx 1975, 326). Freedom from the power of money is, then, freedom to try to make ourselves into the person we want to be, but it is no guarantee that we will succeed.

This picture changes considerably in the political economic works, but perhaps not as considerably as I have argued elsewhere (Noonan 2020, 441-456). I want to frame this second picture with two famous but schematic passages. In *The Contribution to the Critique of Political Economy* Marx gives what he claims is an overview of the basic principles of historical materialism (Marx 1999a). His focus here is not "the ensemble of social relations" but the contradiction between the forces and relations of production. Marx argues that the forces of production (including science and technology) tend towards increasing the productivity of labour, but at certain points are "fettered" by the existing relations of production (Marx 1999a). This fettering creates social crises that lead to revolutionary periods.[3]

Successful revolutions free the forces of production from the constraints imposed by the previous set of relations of production, but not for the sake of increased quantitative growth of commodities. Rather, the goal of social revolutions is to reduce the pull of natural necessity and correspondingly increase the scope for free human action. In *Capital Volume Three*, Marx presents human history as a struggle against the mechanical determination of human action by physical forces (Marx 1986a, 820). Human society, built from nature, frees us from its determining forces, *to the extent that it reduces socially necessary labour time*. The less time we must spend satisfying our basic needs, the more time we have to freely realise our projects, invent and re-invent ourselves, and sensuously enjoy our lives.

Technological development thus plays an essential role in the expansion of the realm of freedom into the realm of necessity. The role of technology is most fully explored in *The Grundrisse*. Here it becomes clear that although there may be a historical tendency of the forces of production to grow, growth of productive power is never an end in itself or valuable as such. Technological development is good only when it is consciously used to free human creative capacities from natural determination or social domination. Hence the same technology could be both bad and good: bad when it intensifies the alienation or exploitation of labour and good when, in changed social circumstances, it expands connections between people, or extends our creative capacities in new directions. The ultimate trajectory of technological development is to free humanity entirely from the natural need to work for the sake of survival. Under this version of socialism, "labour in which man does what he can make things do for him has ceased" (Marx 1986b, 250). Marx could not anticipate that machines could do a great deal more than lift and push, and it is thus difficult to draw firm conclusions about what he would have thought about the emergence of artificial intelligence.

It is certainly plausible to think that he would have welcomed its emergence as potentially liberating. This second picture of technology is thus the strongest support for the existence of a transhumanist Marx. If Marx saw the horror *and* the potential of industrial technologies, why would he not also have seen the horror *and* potential of genetic engineering and artificial intelligence? Technology is just an instrument of social intentions: if those intentions are to exploit labour and increase surplus value, technology will constrict the realm of freedom. On the other hand, if the social intentions are to more comprehensively satisfy needs and free time, then technology expands the realm of freedom and becomes a crucial instrument of human liberation.

I think that Marx did indeed think of technol-

3 The overview that Marx gives of his work in this Preface became the basis for G.A. Cohen's analytic reconstruction of the basic principles of historical materialism. Despite its rigour, there are serious questions to be raised about its adequacy to Marx's overall position. I cannot enter into those debates here. See Cohen 2000.

ogy in this instrumental way, but that nevertheless Marxism, and the Marxist understanding of socialism are better understood, still today, as a humanism and not transhumanism. Not only does Marx not envision a complete untethering of nature and humanity, necessity and freedom, he also argues that under a socialist society wealth will take the form of the "totality of human needs" (Marx 1986b, 411). Needs are forms of connection between human beings, the natural world, and each other. These connections are exactly what the transhumanists want to transcend, because a connection is a claim on our time. If someone needs me, and I feel connected to them by a bond of obligation to satisfy their need, then I must set aside my private goal in order to satisfy the other's need. If I am an autopotent superintelligence imagining my world into being, there is no real, *i.e.,* materially compelling connection, between my self-consciousness and anything outside, *because there is no outside.*

If one rejoins that Marx did not imagine this possibility because he could not, given the undeveloped state of technology at the time, I would respond that the bare fact is true, but ignores the role that the value of needs continues to play even in his most technotopic works. He does not ultimately define wealth in terms of total freedom from necessity, but rather in terms of the *necessary* requirements of a fully human life: our needs as the mediations between ourselves as social individuals and the world of nature and other people. Although Marx's political economic work sees an expanded role for technological development in the creation of the conditions for free human lives, he never rejects the humanist understanding of people as passive and active, dependent and interdependent, and free. Indeed, the third position on technology that one can find in his work sees total automation as a threat to human freedom.

This third position must be inferred from his scattered remarks on the "real subsumption" of labour under capitalism. Formal subsumption occurs when a particular branch of craft production is brought under the principles of the capitalist division of labour. The real subsumption occurs when the entire global working class is reduced to a function of the capitalist division of labour: "The advance of capitalist production develops a working class, which by education, tradition, habit, looks upon the conditions of that mode of production as self-evident laws of Nature. The organization of the capitalist process of production, once fully developed, breaks down all resistance" (Marx 1986c, 689). Keep in mind that as capitalism develops, the labour of particular individuals is more and more a mechanical function of their position within an overall division of labour that becomes increasingly mechanized and automated, a "mechanical monster," as Marx says, "a demon power" ruling over every gesture of working people and emptying their minds of ancient craft knowledge (Marx 1986c, 36). Once labour has been fully subsumed by capital, each moment of workers' lives would thus be programmed by capital to serve its expansion in the most efficient way. The completion of the capitalist project for the real subsumption of labour would result in the total alienation of the labourer from their human needs for meaningful, creative work and mutually rewarding social interaction. The total subsumption would not exactly be Dyer-Witherford's, Kjøsen's and Steinhoff's capitalism without people, but it would be capitalism without any possibilities of human creativity and interaction (Dyer-Witherford, Kjøsen, and Steinhoff 2019, 111).

Does that not mean that socialists should do everything in their power to make the case that socialism must seize the means of technological production from capitalists and use them for the sake of emancipating labour from the demon power? On one hand, the answer is obviously "Yes." Yes, because technology under capitalism is essentially a means for intensifying the exploitation and alienation of labour. But there are more interesting complications which must be taken into account. When we take them into account, we have to add a qualifying "no" to our "yes." If it is the case that some forms of technological development would alienate us permanently from the passive side of our human being (the needs that link us in meaningful relationships with the world and each other), then they must be rejected by socialists in so far as socialism presupposes living human beings. If we read the real subsumption of labour not simply as a fact that Marx was describing but an ethical worry about how human

life might be destroyed via total integration with capital, we ought to conclude that it is a warning, not only about the capitalist use of technology, but about the dangers of technological development unguided by human purposes. To conclude I want to sketch an alternative conception of technological development guided by human purposes in a socialist humanism for the twenty-first century.

III. Technology and a Socialist Humanism for the Twenty-First Century

I am not the first Marxist to interpret transhumanist technotopianism in light of Marx's fears about the real subsumption of labour. In 2000, Glenn Rikowski argued that the transition towards cyborg reality that transhumanists were predicting was already happening. However, it was not the liberation from the flesh of their dreams, but the penetration of even the molecular sequences of life by capitalism. Transhumanism was thus not a movement to an emancipated future but towards the total domination of human life by capital.

> 'Agency' is unrealisable in capitalist society; as we are capital, agency can only be the *struggle for agency* itself – the attempt to break free of the social force that deeply possesses us: *capital.* … This way of visioning the social universe has important consequences for Marxist-humanism. First, the struggle to be 'human' has been lost in capitalist society; we are becoming capital on an incremental (generation-by-generation) scale. Secondly, Marxist-humanism is a struggle *against what we have become, and also against where we are headed: the posthuman as capitalist life-form*. (Rikowski 2000, 35)

Rikowski's argument has the merit of seeing that capitalism alone is not the problem. The integration of human and machine which it is bringing about is a danger to the future of humanity. Socialists must therefore be wary of adopting the machinic future that capitalism prepares for us as our own.

The basis of resistance to capitalist transhumanism is thus not an equally inhuman socialist transhumanism, but rather that which it has always been: needy human beings. Enrique Dussel has understood better and more poignantly than most Marxists that the real contradiction of capitalism is ethical. It is not between the forces and relations of production as abstract social and technological systems, but between the inhuman forces of capital and sentient human beings who care about the quality of their lives. The critique of capital, Dussel argues, "is possible from a *practical* outside of capital … such exteriority is the place of the *reality* of the other, the non-capital, the living labourer in his corporeality not *yet* subsumed by the capital" (Dussel 2001, 403). Socialism is thus a project of and for living, breathing, desiring, loving, creating social self-conscious human beings. In the same materialist ethical spirit, Nick Dyer-Witherford argues that socialism will "give primacy to the expanded reproduction (in the sense of the fulfilment and development of needs) of the human … It should not therefore be identified with the development of technologies" (Dyer-Witherford 2015, 196). The emancipation of human life from capital is a matter "of … the flesh which are not indifferently transferrable to automata of metal" (Dyer-Witherford 2015, 197). Precisely.

But there are more general implications of these claims regarding the importance of respecting limits. Real human beings are born and die. They get sick. They rightfully demand to live a good life furnished with all of the resources their lives require. However, they accept that their bodies are "death traps." They do not demand to become God. That demand stems from a phantasm of the bourgeois ego which thinks that the value of everything depends on its presence as valuing subject. That monstrous capitalist narcissism is not available to the social individuals that Marx takes us to be: social individuals care about the world outside their own skin and do not need to live forever in order to value present and future life.

My argument must once again counter the rejoinder that I am operating with a too restricted sense of transhumanism. I have already acknowledged that not all transhumanists are avowed Singularitarians, but I believe that my response to this rejoinder still stands: if they really are transhumanists, they ought to be Singularitarians, because the Singularity is the practical expression of the transcendence of humanity that they must desire, if they are in fact *trans*humanists.

Transhumanism without transcendence is, I would contend, better understood as a contemporary expression of older humanist values. To conclude, I want to address the question of what those values might teach us about the relationship between technological development and human freedom.

Let me begin by winding back to Marcuse in order to distinguish liberal and socialist forms of humanism. All forms of humanism must accept, as Marx said in 1843, that human beings are the highest beings for human beings (Marx 1975, 187). Our problems are soluble by us working together on earth or not at all. There is no divine model for how to live a human life; we learn that which our lives require from the experience of our needs and reflection on the struggles that shape our history. Humanists of all stripes understand the good life to involve the fuller realization of our sentient, intellectual, practical, and relational capacities. The good life is consummated in the sensuous enjoyment of our experiences and activities, our relationships with other people and creatures, and the beauty of nature and human creations. Humanists thus do not demand eternity but must be content with the finite pleasure of thinking themselves members of the unfolding spectacle of the universe in space and time. The key difference between liberal and socialist humanists is that the liberal sees the conditions for universal life-enjoyment already established while the socialist argues that these values cannot be realised under capitalist conditions.

Capitalism represents a decisive check to the full realization of humanist values not because it fetters the forces of production (although it might do that). It impedes the realization of humanist values because – as Rikowski and Dussel argued and Steinhoff well understands – it depends upon the systematic dehumanization of workers, (indeed, everyone, including the capitalists, in so far as they are ultimately servants of capital accumulation too). If the basis of resistance to capitalism is living, desiring, caring human social individuals, as Dussel argued, then we must understand emancipation as the freedom of the human from the inhuman forces of capitalism. That means, in turn, that no matter how open the future of human development is, the *socialist* future is comprehensible only in human terms. The goal of socialist revolution is not to free human beings from the frames of finitude that define their lives, but rather to free our human life-capacities from their dehumanized instrumentalization by capital.

Here again, my argument seems to run into the wall of imposing false limits on the possibilities inherent in progress. Let us take a concrete example, *a propos* this time of pandemic, in order to test the soundness of my conclusion one more time. If it is true that socialism is a struggle for human beings for emancipation of their human life-capacities in the form in which these have emerged from our natural, evolutionary history, does it not follow that all technological extensions of these capacities would be "unnatural" and therefore, inhuman? And if that is the case, does it not follow that accepting the frames of finitude that define human life means accepting disease and mortality just as they happen to arise in each individual life? If those conclusions do not follow, yet I admit that human intelligence actively pursues practical knowledge and techniques that improve life, then assigning any definite limit to potential advances seems either arbitrary or misanthropic. How can it be humanist to argue that there are limits to technological developments that could cure human ailments, end human suffering, and free human lifetime to sensuously enjoy the world as it could potentially be: an unlimited field of invention, play, and delight?

The full answer would take me too far into existential considerations beyond the scope of the paper (Noonan 2018, 214-223). My concern here is the values of socialism, and so I will confine my response to that more limited aim. It is of course true that Marx understood human nature as active and self-transforming. At the same time, he equated humanism with fully developed naturalism and naturalism with fully developed humanism: it is human nature to transform raw material nature into human societies (Marx 1975, 296). Human societies create more space for exploration, agency, and interaction. Let us assume that the social impediments to exploration, agency, and interaction are overcome: would we not then rightfully set our sights on more general limitations on the goodness of life, starting with lifespan? How

could it possibly be unsocialist to cure disease and push the boundaries of death back as far as possible, indeed, to overcome them if that proved possible?

My position is not that it would be unsocialist to search for new medicines, treatments, and longer lives, but that there are fundamental differences between socialist and transhumanist motivations for doing so. The different motivations imply limits to the socialist approach that the transhumanist would find intolerable and incoherent but which are nevertheless required if socialism is to be at all ethically coherent. In his *Critique of the Gotha Program* Marx argued that after the long period of struggle against capitalism was over, and our productive capacity was fully freed from its contradictions, members of that future society would still face the question of how to distribute the social product. His answer was given in one of his most famous aphorisms: "From each according to their abilities, to each according to their needs" (Marx 1999b). This principle is ethical as much as it is economic: citizens of a fully realized socialist society will desire to contribute their talents because those expressions of their individuality help satisfy the needs of others just as the expression of those other lives help support one's own. Reciprocity between need-satisfaction and contribution is thus paramount.

What would medicine be like in such a society? Marx believed in scientific progress, of that there can be no doubt, but he also understood that the value of technology is socially mediated. Hence it follows that socialist societies would still have to face the question of what to allow machines to do, even in a case where they could, in principle, do anything at all. If the whole point of socialist revolution was to free human life from its domination by capitalist dynamics, it would defeat the whole purpose of the revolt to then turn health and life over to equally reified powers of intelligent machines. One cannot specify in advance precise limits to any practical technological development, but I do believe that it is possible to state a general ethical limit to technological development that socialists ought to respect. The "ought" expresses at once an ethical obligation to each other and an aesthetic preference for organic life over the machinic. Any and all technological developments are subject to the limitation that they preserve intact the human organic needs that constitute the basis of the social bond, and preserve space for self-realizing human action as the substance of meaningful, valued, valuable, and sensuously enjoyable lives that end after a certain period of time in death.

Preserving the finite organic human being does not mean that we should not create vaccines or treatments or extend life. It does mean that we have to think about these treatments as social self-conscious agents. Transhumanists sometimes worry about equity in access to enhancement technologies, but they always think of the technological solution to health first. The social determinants of health are typically ignored (Marmot 2015). *Socialists* have to start from the social determinants of health and argue that health is not the product of consuming health care commodities, but depends much more pervasively on social conditions: is the society more or less equal, are people housed or homeless, what is the education system like, what is the level of toxicity of the environment in one's neighbourhood, is one subject to racist degradation, and so on. Health improves as social relationships are made more equal, and as health improves, so too do one's possibilities for action and relationship expand. Life becomes more enjoyable. As Trotsky said, the ultimate goal of socialist revolution is to allow everyone to enjoy life to the fullest (Trotsky 1940). But "fullest" does not mean "fullest imaginable," but rather the fullest possible for a bio-social being.

There is still an open limit: improvements in social hygiene have extended our average life span by decades, and there is no preset limit as to how far we might extend it in a socialist future. But no matter how far, I maintain, there must be a limit beyond which people will not desire to go, not fundamentally because they have grown bored with a long life, but because they have concluded, in a materially rational way, that they have had their just fill, and it has come time to cede the space they occupy to new generations. They will die without fear, as Marcuse says, because they have lived a good life and they know that those who come after will do so as well (Marcuse 1966, 236-237).

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The Dialectics of the Biosocial: Addressing Ontological Dualism and Contemplating Transhumanism

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ABSTRACT: In the context of a critical review of the assumptions of the philosophical and cultural movement known as 'Transhumanism,' this paper addresses the difficult question of what is human nature, or the nature of being human. And, whether this 'nature' is purely a phenotypic quality shared with all biological life, and as such open to biological modification and transformation? Or does human nature constitute a quite different and unique set of attributes? What Marx identified as 'species being,' characterised by a very different understanding of transformation, that of productive activity or praxis.

KEYWORDS: Species Being, nature, ontological dualism, praxis, materialist monism, transcendentalism

Introduction: 'Transformations'

Transhumanism is the name badge adopted by the cultural and philosophical movement concerned with enhancing humanity through emergent bio- and information technologies. Whilst this is a broad coalition, it would appear to share little common ground with the objectives of revolutionary Marxism, not least because of its generally uncritical approach to the commodification of human biomaterial. The question posed in this paper is whether it is possible to look beyond the contradictory impulses underpinning many of the manifestations of transhumanism, in order to engage with the implications of its key concern, the technological acceleration of the evolutionary development of humanity? Or to put it another way, is a transhumanist future understood in terms of the transcendence of human biological limits so that all may live a life free of debilitating illness and able to maximise their cognitive potential, so far removed from the socialist ideal of achieving a common creativity and purpose, free from the forced demands of labouring for necessities and wants?

Assessing the idea of human transformation necessarily focuses attention on the relationship between the human and the natural, and how this has traditionally been conceptualised in Western Philosophy. Liberal humanism, which has been the dominant theme of such discourses since the Enlightenment, represents human nature as a quality quite distinct from, if not antagonistic to, nature per se. It was arguably the development and expansion of the capitalist system

of commodity production from the late eighteenth century onwards that gave material form to Descartes' original binary myth of nature as external, controllable, and reducible. Nature was to be distinguished from the realm of the social, wherein humanity was presented as its opposite, non-reducible, rational, and having free will. But for Marx, the concern was less the question of how society and nature related to one another, than how these two aspects of the whole ever got separated in the first place? In addressing this form of ontological dualism, Marx's philosophy of praxis sought to identify the historical conditions that led to the construction and reproduction of this form of idealism, and in doing so charted a very different materialist understanding of human history.[1]

In critically examining the transhumanist goal of overcoming human-nature dualism, this paper assesses the monistic assumptions that underpin visions (both humanist and anti-humanist) of an enhanced and directed evolutionary pathway for humanity. The paper is therefore required to pose a number of foundational questions such as what constitutes human nature, and what is the nature of being human? Is human 'nature' a phenotypic quality, one that is open to biological and technological mediation, or does it constitute a quite distinct and unique set of attributes, a 'species being'? The latter is the conception that Marx drew upon in elucidating his own materialist understanding of the capacity of human productive activity or praxis to bring about social transformation. This analysis of transhumanism is therefore interwoven with an assessment of Marx and Engel's own understanding of the dialectical unity of nature and humanity.

Humanism, Marxism, and Ontological Dualism: A Brief Sketch

Western humanist thought, stretching back as far as the Enlightenment, has traditionally represented the human condition as shaped 'by the existence of two distinct ontological spheres of reality, the material-natural and the cultural-ideational, presented as 'incommensurable and absolutely distinct from one another' (Smith 2009, 376). This form of dualism was manifest in Descartes' separation of the human mind and corporeal body, with the latter described as a 'statue, an earthen machine.' While for Kant, reason served to draw a line between 'facts and values' ('what is' and 'what ought to be'), so separating humanity from the external world of nature. Outside of reason, nature was deemed by Kant to simply be a 'thing-in-itself' with no inherent causal powers. Emergent in the early nineteenth century, the hegemony of ontological dualism subsequently became institutionalised within the social structures of civil society. These social institutions served to legitimize and reproduce the social inequalities that formed the bedrock for capitalist relations of production, as both necessary and non-transformable. Value rationality and the material world of the commodification of labour and the exploitation of natural resources were presented as distinct and unconnected one from another (Smith 2009, 360-363). The social and environmental problems that were seen to arise 'indirectly' from the relations of production, were therefore presented as potentially amenable to resolution through progressive scientific and technological processes of innovation, in combination with a system of moral education.

By the early twentieth century, logical empiricist philosophy or 'positivism' had emerged to challenge the Kantian notion of *a priori* understanding, and in doing so sought to promote the idea of a 'unified scientific method' that could be applied to the understanding of both social and natural phenomenon. Yet where the methods of positivism were applied by natural scientists to explain aspects of the human world, then the result has typically been the subversion and reduction of the social to the natural. As such, Positivist science has long been criticised as inadequate to an understanding not only of the social world but also the complexities of the natural world. The 'unified' methodology of science has had little or nothing to say about the social and political biases of scientists that are carried into the laboratory. It was

1 It should be stated at the very beginning of this paper, that there will be no engagement with the theoretical anti-humanism of Louis Althusser and the debates of the 1960s concerning whether there was indeed an 'epistemological break' between the Hegelian humanism found in 'early' Marx of the *Thesis on Feuerbach* and the 'late' Marx of *Capital*. These debates were arguably academically sterile at the time, and remain so today.

not until the last decades of the twentieth century, that the commodification of science research and innovation began to be seriously questioned.

In marked contrast to this ontological dualism, Marx understood that human beings have always evolved and interacted with the world that surrounds them, and in turn, transformed nature through its collective productive labour. In *The German Ideology*, he set about dismantling idealist representations of humanity as separate and distinct from nature. By presenting the relationship between humanity and nature in dialectical-materialist terms, Marx also reflected the historically shifting modes and relations of production: "The unity of man with nature has always existed in industry and has always existed in varying forms in every epoch according to the lesser or greater development of industry" (Marx 1974, 63). Two decades later, in *Capital* (Volume 1), Marx states that: "'Labour is, first of all, a process between man and nature, a process by which man, through his[2] own actions, mediates, regulates and controls the metabolism between himself and nature" (Marx 1976, 283). It is on this basis that human labour should be understood as much a physical quality that interacts with its environment, as it is the 'social substance' of labour power. Here, Marx utilises the notion of 'species being' to draw attention to this combination of corporeal bodily properties interacting with an external nature that can be controlled through labour power.

However, humanity becomes separated from praxis within the capitalist social relations of production. The human capacity to reflect and act upon the natural and social world becomes distorted, resulting in an emergent process of alienation from species being. As Marx explains in the *Economic and Philosophical Manuscripts*: "Estranged labour turns mans species-being, both nature and his intellectual species powers (*consciousness*), into a being alien to him and a means of his individual existence. It estranges man from his own body, from nature as it exists outside of him, from his spiritual essence, his human essence" (Marx 1975, 328, italics not in original). While in *Capital* (Volume 3), he explains that the capitalist relations and conditions of production mediate the interdependence of the material-natural and human conscious activity or agency, "provok[ing] an irreparable rift in the independent process of social metabolism, a metabolism prescribed by the natural laws of life itself" (Marx 1981, 949). So it follows that the process of alienation, a concept reflective of Marx's humanist conceptualisation of the dialectical contradictions that underpin capitalist relations of production; is "at one and the same time the estrangement of humanity from its own laboring activity and from its active role in the transformation of nature" (Foster 2000, 73).

Yet Marxist thinking post-Marx, has not been immune to its own dualist assumptions. The Second Communist International was characterised by its representation of historical materialism as a purely disinterested study of the economic contradictions of capitalism. And, even by the 1950s and 1960s, many influential Marxist thinkers continued to assert the view that it was economic forces that 'overdetermined' the actions and the course of human history, presenting the natural and physical aspects of human existence as mere epiphenomenon. This form of economism, often combined with an uncritical scientism and technophilia, had an undue influence within Marxist politics throughout much of the twentieth century. The failure to build upon Marx and Engel's own dialectical understanding of the relationship between nature and society frequently led to an uncritical endorsement of the untrammelled benefits of technological innovation and industrial expansionism for human progress.

However, in more recent decades, arising from a greater awareness of the social and environmental consequences of unrestrained technological expansionism and the over-exploitation of natural resources, there has been a return by many socialists to Marx's and Engel's original critique. Rather than replicating the purely mechanical criticism of what capitalism is doing to nature that is posed by the environmentalist movement, which inadvertently reinforces the separation of nature and society, the dialectical legacy

2 Marx's use of gendered pronoun's are clearly representative of the norms of his time. Outside of direct quotations, I have attempted to be consistent in my use of gender inclusive pronouns when they are required.

of Marx poses a different set of questions concerning the unification manifest in the understanding of capitalism-in-nature and nature-in-capitalism; "this allows us to grapple with a new set of relations, hitherto obscured by the dualism of Nature/Society" (Moore 2015, 13).

Overcoming Dualism (1): The Transhumanist Pathway

We now move onto a consideration of the key components of transhumanist philosophy and its key objective of enhancing and transforming the 'natural' dimensions of humanity. The constituents of 'trans,'used as a prefix to indicate a journey from one state to another, is the focus of debate within a range of ontological and epistemological thought. But for transhumanism, a loosely defined cultural and intellectual movement that embraces the potential of biotechnologies, artificial intelligence, and robotics, 'transformation' is understood as a 'redesigning' of humanity beyond the limits of its current biological constraints.

Transhumanism as both a philosophy and an ideological[3] movement, first came to prominence in the early 1990s. But its antecedents lie firmly within classic humanism, and the idea of a progressive process of cultural and educational human refinement. This is a movement very much concerned with the human capacity for self-determination built on rational and ethical principles, but going beyond classic humanist objectives in both means and ends. As such, it has been described as an 'intensification' of humanism (Wolfe 2010, xv). The promotion of a technologically engineered acceleration of bio-evolutionary processes, with the goal of achieving an enhanced 'human-machine,' can be read as a distinct form of 'technological singularity.' Singularity is generally referred to as the state of being achieved when advances in science and technology have reached the point when cognitive enhancement of humans becomes indistinguishable from that of artificial intelligence. According to the futurologist Ray Kurzweil, who has been credited with advancing this concept, a transhumanist technological evolution represents the continuation of biological evolution to the point at which biology is itself transcended (Kurzweil 2006). It was the sequencing of the whole human genome achieved in 2003, which in turn led onto exponential advances in bioinformatics and the emergence of innovative biotechnologies, that is frequently identified as the point at which human biological transformation moved from being an ideal to a potential reality.

One of the interesting aspects of the genealogy of transhumanist ideas is its link to the emergence of the science of cybernetics, and its association with the early development of space exploration programmes of the early 1960s. In this context, the term 'Cyborg' was first proposed by two research scientists in an article that appeared in the journal *Astronautics* in 1960. It was stated that "for the exogenously extended organisational complex functioning as an integrated homeostatic system unconsciously, we propose the term 'Cyborg'" (Clynes and Kline 1960). The notion of the cyborg anticipated the mechanical adaptions to the human body that were seen as necessary for humans to be able to survive in the hostile and challenging environment of outer space. It is on the basis of this understanding of cyborgism as technological enhancement, rather than the popularist twentieth century notion of the 'man-machine,' that the notion of transhumanist technologies can also be understood (Ranisch and Sanger 2014).

Max More, a leading libertarian advocate for an enhanced evolution of humanity, has argued that as a 'philosophy of life,' transhumanism must at all times be guided by "life-promoting principles and values" (More 1990). It is on this basis that an ethical transhumanism must also engage "with the study of the ramifications, promises, and potential dangers of technologies that will enable us to overcome fundamental human limitations, and the related study of the ethical matters involved in developing and using such technologies" (More 2013, 3). Here the value that is accorded to human rationality by transhumanism is linked to a programme with the objective of "developing and making widely available technologies

3 Following Gramsci, ideology is conceived here not in the negative, as in a false or inverted version of reality ('false consciousness'), but positively, as an explanation of reality and that seeks to actively bring about change (see also Larrain 1983).

to eliminate aging and greatly enhance human intellectual, physical, and psychological capacities" (More 2013, 5).

For More, transhumanism represents an ideological commitment to shift the hegemonic axis of classic humanism from a dualist introspection to a monistic future: "Where creatures with similar levels of sapience, sentience, and personhood are accorded similar status no matter whether they are humans, animals, cyborgs, machines, or aliens" (More 2013, 13). It is a philosophy that is wedded to a belief in the capacity to progress science and technology to the point at which humanity itself is able to transcend and escape its bonds of materiality and embodiment. That is, a desire to overcome human limits through reason and science, reflecting "a Promethean drive to extend life and increase cognitive capacity" (Young 2005). As such, it can be seen as a humanist philosophy of praxis, but one that rejects traditional dualist categories while embracing a "materialistic monism" (Harman 1998, cited in Naude 2009). This would be a monism predicated on an ontological conception of the universe as consisting solely of matter and energy, combined with the materialist epistemologies of engineering, biology and informatics to construct a technological pathway to human transformation.

Overcoming Dualism (2): Whither the Posthuman Condition?

Alongside a materialistic monism, Harman (1998) also recognised what he termed 'transcendental monism' which he linked to a metaphysical interpretation of the trajectory of modern science and technology. This is a form of transcendentalism is associated with 'matter-energy,' but not as a material quality of the universe, rather as arising from within, a mind-consciousness: "In this context, consciousness is not seen as the end-product of material evolution but rather consciousness gave rise to the material world" (Naude 2009, 52). Such transcendentalism is arguably a defining feature of many of the 57 varieties of poststructuralist thinking that have coalesced around the notion of the 'posthuman condition.' While there are those who embrace anti-humanism and challenge any suggestion of transcendentalism (for example, see the discussion of Bradotti's work below), many post-structuralist thinkers are less reticent about their commitment to transcendentalism. Cary Wolfe (2010) for example, devotes a whole chapter in his posthumanist primer to discussing the work of Ralph Waldo Emerson. This is a generally supportive piece that directly acknowledges the influence of Emerson's 'romanticised' critique of modernity as it emerged in the nineteenth century. Wolfe argues that Emerson "directs us not to an originary, fixed self-substance (human subjectivity) but toward a *power* and a *process,* not toward the past but toward the future, or rather towards futurity itself, conceived as a horizon … for the self *only* exists in its becoming" (Wolfe 2010, 248; italics in original, the text in parenthesis is not in original).

Those who recognise the potentiality of a 'post-human condition' (from this point on I will use the shorthand 'posthumanism') generally share with transhumanism the perception of the human as "a non-fixed and mutable condition…following the onto-epistemological as well as scientific and biotechnological developments of the twentieth and twenty-first centuries" (Ferrando 2013, 26). While both positions share in common the notion of 'technogenesis,' a coevolution of technology and humanity, what hat they do not share is the ontological assumption that human enhancement achieved through the application of science and technology constitutes a transcendence of humanity per se. Posthumanists see the technological pathway as nothing more than the continuation of the failed humanistic project of 'universalism.' In contradistinction, the point at which the 'post-human' is seen as consummated is the 'historical moment' when what it is to be human has became 'decentred' from past humanist ideals. Wolfe identifies this moment as the point at which "new modes of thought'" emerge as a consequence of our "imbrication in technical, medical, informatic, and economic networks," and in opposition to the "philosophical protocols and evasions of humanism as a historically specific phenomena" (Wolff 2010, xvi).

While for the philosopher Rosi Braidotti, the 'post-human' is realised when the dualism of nature ('the given') and culture ('the constructed') has been

'displaced and blurred' by the cumulative impact of scientific and technological advances that enable a"self-organising (or auto-poetic) force of living matter" to emerge (Braidotti 2013, 3). Braidotti's position is more self-consciously anti-humanist and therefore anti-transcendentalist, than that of Cary Wolfe. In her reading of what she describes as the 'post-anthropocentric turn,' Braidotti draws on Spinoza by way of Deleuze, in adopting a philosophical monism characterised by a 'vitalist materialism.' Here matter (the world and humans) is conceived as whole, not as dualistic entities structured according to principles of internal or external opposition (Braidotti 2013, 56). As she herself notes, while Spinoza's philosophy was for a very long period of time regarded simply as 'holistic' and 'politically ineffective,' this interpretation changed in French philosophical circles in the 1960s. Deleuze, Foucault, and Lacan, all drew on Spinoza's philosophy with the intent to "overcome dialectical oppositions, and engendering non-dialectical understandings of materialism … to define matter as vital and self-organizing … rejecting all forms of transcendentalism" (Braidotti 2014, 170). One interesting aside here, is that Louis Althusser, the doyen of 1960s 'structuralist Marxism' (briefly alluded to above) acknowledged his own debt to Spinoza's 'determinist philosophy' (Thomas 2002, 73).

If transhumanist philosophy is concerned with the techno-scientific enhancement of human beings, then posthumanism emphasises the techno-scientific possibilities of mediating what it is to be 'human' at all. For Braidotti, developments in genetic engineering and associated biotechnologies have led onto "a qualitative conceptual dislocation in the contemporary classification of embodied subjects, … bodies reduced to their informational substrate in terms of materiality and vital capacity" (Braidotti 2013, 97). What she identifies as emergent 'techno-cultures' are projected as ultimately submerging antagonistic 'dualistic' (class-based) politics. This is because they are seen to "destabilize the categorical axes of difference" upon which existing capitalist power relations are constructed. The "decentring of anthropocentrism" is said to result in a new interconnectivity between the human and "non-human," the latter held to be a self-organising hybrid lifeforce, evolving (but not in the Darwinian sense) across a nature-culture continuum (Braidotti 2013, 98). She is however careful not to deny the power of capitalism to opportunistically commodify the "informational power of living matter itself," a process she describes as the "capitalization of living matter" (Braidotti 2013, 65). But this era of 'biocapitalism' is deemed to be ultimately unsustainable because it is seen as predicated on a materiality and individualist subjectivity that lack any relevance for an emergent non-human form of life.

Postulating posthuman futures, whether of the Wolfe or of the Bradiotti variety, is typically post-structuralist in its adoption of a flat ontology that conflates causal powers and human agency. As such posthumanism rejects any notion of a voluntarist social transformation, whether that be manifested as a technologically engineered transhumanism, or a collectively organised resistance to the contradictions of the capitalism system. For these anti-humanists, voluntarism is problematised because it is seen to represent the privileging of the human over the non-human. Yet, as the critical realist Doug Porpora has noted, "there is a difference between who we are phenomenologically and what we are ontologically" (2015, 144). That is, while the original concerns of poststructuralist theory may have been to challenge Cartesian dualism and bounded human identities, manifested as posthumanism, it can be seen as rejecting almost entirely the idea of enduring personhood linked to materiality. As such it denies the possibility of critical agency in any process of transformation. Ultimately, therefore, the process of 'posthumanisation' appears to be contingent on the same 'techno-transcendence' that is elsewhere described by Braidotti as a "misleading tendency" linked to "a consumerist brand of individual liberalism" (2013, 97).

Overcoming Dualism (3): Conceiving 'Biosociality' in a Post-Genomic World

Within the field of the biosciences, the 1990s witnessed a shift from whole gene-based theories to DNA-based theories and chemical-molecular models of structure and function. Essentially this marked the transition from traditional genetics to modern genomics that cul-

minated in the sequencing of the whole human genome in 2003. The subsequent exponential growth in what are now collectively known as 'omics sciences' represent this new comprehensive rather than partial approach to analysing genetic or molecular human profiles. These developments in 'post-genomic' bioscience are linked to therapeutic as well as human enhancement promissory discourses. Therapeutics would include advances in the field of pharmacogenomics associated with delivery of 'personalised' medicine, while the human enhancement aspects are linked with the development of genetic engineering techniques and the potential to modify inherited human germlines (Almeida and Diogo 2019).

One key area of development within post-genomic science is the field of environmental epigenetic research concerned with the complex mechanisms of cell identity and processes of cell differentiation. Epigenetics has acquired a significant public profile not least because of "a number of provocative propositions that have caught the attention of the wider public and scientists alike" (Müller *et al*. 2017, 1677). One of the most significant is the conceptualisation of the material environment existing outside of the human body as 'bioactive,' leading to the speculative claim that the science of epigenetics could bring to an end the nature and nurture dichotomy. What is indisputable is that developments in post-genomic science have undermined the traditional biomedical model that sought to separate-out 'exterior' environmental health risks, from 'interior' or genetic risk factors. This form of medicalised dualism has long served to reinforce the notion of disease susceptibility as primarily an individual trait, despite the existence of well-understood epidemiologically identifiable social and economic determinants of health.

As we have seen in the discussion above, many of those who have pursued a transhumanist or posthumanist intellectual pathway have sought to cite the innovations arising from post-genomic bioscience in support of their distinctive monistic philosophies. This has also been the case for those who look to Foucault's notion of 'biopower' to make the case for the emergence of a new order of 'technologies of self.' Biopower in its original form has been defined as those strategies that encompass, "knowledge of vital life processes; power relations that take humans as living beings as their object; and the modes of subjectification through which subjects work on themselves qua living beings" (Rabinow and Rose 2006, 215). In the post-genomic context, biopower is now presented as offering the opportunity for individuals to attain the hitherto unrealised potential, "to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality" (Foucault 1988).

But neo-Foucauldian theory goes much further than highlighting the post-genomic contribution to an understanding of the complexities of human material-natural corporeality. It also identifies an emergent transformation of humanity, a hybridization of the personal, the cultural and the biological. Paul Rabinow and Nick Rose are two of the most well-known proponents of a transformatory process they have termed 'biosociality.' But this is not so much a version 2.0 of Foucault's foundational concept of biopower, but rather is drawn upon as a heuristic that stands in for a radical reappraisal of humanity: "As beings whose individuality is, in part at least, grounded within our fleshly, corporeal existence, and who experience, articulate, judge and act upon ourselves in part in the language of biomedicine" (Rose 2007, 26). Dualism is seen as overcome at the point at which post-genomic science enables the human body to be treated as an "ethical substance" to be worked on to secure a healthier future (Rose 2007, 49). This is a future predicated not so much on the availability and efficaciousness of biomedical interventions, as one which has effected a shift in knowledge-power such that individuals now have the knowledge and crucially the means, to act on information about their personal genetic susceptibilities (their 'somatic individuality'), to effect their self-transformation. In relation to the future promise of epigenetic science, Nick Rose has claimed that, "[it] marks a recognition of the inseparability of vitality and milieu which could give a crucial role for the social and human sciences in accounting for the shaping of vitality at the molecular level" (Rose 2013, 19).

But there is a caveat, and this concerns the social and economic processes through which the

'knowledge-power' (of post-genomic science and technology) is to be realised. Pálsson (2009) has taken this up in terms of the alienation of human relationality that is seen to arise from the commodification of the "natural capacities of the body" through the application of new technologies in an emergent biosocial relations of production. This is a self-declared attempt to marry Foucauldian and Marxian frames of analysis in assessing the impact of these new modes for the "extraction, reproduction and exchange of bodily material" resulting in the creation of what is termed "biocapital." Pálsson begins his analysis by pointing to the ways in which Marx represented the capitalist labour process of the British factory system in the early nineteenth century as a technical mastery over nature. The consequence being a suppression of the natural constituents of humanity as the capitalist labour process transforms the worker into a "living appendage of the machine" (Marx 1976, 614). But in the context of an emergent productive system of 'biocapital,' the very bodies of workers become the object of the labour process. Here Pálsson identifies contemporary limits to an unproblematic application of a Marx's key concept.

Pálsson cites Marx's reference (in the *Economic and Philosophical Manuscripts*), to "nature as 'inorganic body'; that is to say nature *excluding the human body itself*" (2009, 297, emphasis added).[4] This quote is interpreted to mean that Marx inadvertently reinforces a dualist understanding of the relation between humanity and nature which becomes problematic in the context of a post-genomic mastery over the production and reproduction of human body parts. These developments are seen to "mudd[y] the clear distinction between things external to our bodily selves and those intrinsic to us. … With that come difficulties that Marx did not have to confront about what is alienable and what is inalienable from the subject" (Dickinson 2007, 29 cited in Pálsson 2009, 298). The development of a new "biosocial relations of production" is seen to have "revolutionized our capacity to analyze and reproduce bodily material, raising new and fundamental questions as to what constitutes 'life,' 'nature' the 'human, and 'animal'" (Pálsson 2009, 308). This position argues that the technological ability to exploit genetic material, human tissue, and other bio-information constitutes a substantively new form or mode of capitalist production, wherein humans have become indivisible object and subject of the labour process. Certainly over the past two decades there has been an exponential development of 'biobanks' that serve as repositories of donated human tissue and DNA for research purposes, and there have been many instances of commercial transactions involving this donated biodata. But do these developments really constitute a new mode of production requiring an extension of Marx's conception of species-being in which human labour power is now conceptualised as "molecular, cellular, enzygmatic, and genetic" (Pálsson 2009, 302)?

In this section, we have assessed how the Foucauldian notion of 'biopower' has been drawn upon in asserting that post-genomic science and associated biotechnologies represent a new 'power-knowledge' orientation, enabling new forms of cultural, economic and biological hybridisation to arise. In seeking to move away from Cartesian dualism, these accounts make the false assumption that scientific innovation achieved through the force of human intellect is the prime mover of value creation and social transformation. This form of a priori thinking leads onto a voluntarist and anti-materialist framing of human biological and social advancement, that despite claims to the contrary, fail to break decisively with dualism.

4 The translation of the *Economic and Philosophical Manuscripts* that is drawn on by Pálsson is the 1959 Moscow-based Progress Publishers edition. It translates the relevant passage as follows: "Nature as inorganic body, that is to say nature excluding the human body itself." Pálsson uses the term 'inorganic body' to imply a separation from nature as humanity develops the tools to exploit its resources and transform itself into the 'inorganic' world of machines and technology. But if the full quote from *Economic and Philosophical Manuscripts* is examined rather than this partial quote it gives a clearer sense of Marx's original meaning: "Nature is man's inorganic body, that is to say nature in so far as it is not the human body. Man lives from nature, i.e nature is his body, and he must maintain a continuing dialogue with it if he is not to die. To say that man's physical and mental life is linked to nature simply means that nature is linked to itself, for man is a part of nature" (Marx 1975, 328). This citation is taken from the later Gregor Benton translation in the 1975 Penguin edition which refrains from the use of the term 'exclusion.' On this basis, there is no separation of an inorganic, technised human labouring machine from the natural world which would enable Pálsson to claim with any justification that Marx demonstrates a dualistic understanding of the human body. Although Marx drew an analytical distinction between 'inorganic' humanity and nature, this is made precisely in order to emphasis the evolved acquisition of the tools/means of production used to gain control over nature.

The Dialectics of Nature: Challenging Ontological Dualism

In his critique of Kantian rationalism, Hegel argued that in seeking to transform the world (strictly at the level of thought) we must first engage with the potential contradictions of our existing cognitions of that world, and in the process, transform ourselves. But for Marx, dialectical materialism was the 'exact opposite' of Hegel's idealistic dialectic, arguing (in the *Postface to the 2nd Edition of Capital*) that, "the ideal is nothing but the material world reflected in the mind of man and translated into forms of thought" (1976, 102). Dialectical materialism is a realist ontology that acknowledges the existence of an autonomous external and physical world, while recognising the essential relationality of the social and natural worlds. Marx embraced materialism as an active, not a contemplative principle, on the basis that we create "our own distinctly human-natural relations" through our "material praxis" (Foster 2000, 5). Writing in 1880, Engels notes in *Socialism: Utopian and Scientific* that

> nature is the proof of dialectics, and it must be said for modern science that it has furnished this proof with very rich materials increasing daily and thus has shown that in the last resort. Nature works dialectically and not metaphysically; that she does not move in the eternal oneness of a perpetually recurring circle, but goes through a real historical evolution. (Marx and Engels 1968, 407)

Written over 140 years ago, this position (and the series of notes written by Engels and published after his death in the 1930s as the '*Dialectics of Nature*') stands as an emphatic challenge both to ontological dualism and to essentialist conceptions of nature as lifeforce. Engels understood that dialectical thinking is as necessary to the comprehension of natural world processes as it is to an understanding of praxis within the social world.

A key principle of Darwinian evolutionary theory (given due regard by both Marx and Engels) is that nature is a complex system possessing 'emergent properties.' So that while there are well understood causative biological processes at work, for example genetic inheritance, the immersion of these mechanisms within complex natural and social environments can result in unpredictable forms with as yet unknown properties. Darwin's understanding of the process of evolution of organic life is therefore one of both interaction and contradiction. That is, a set of processes that is as likely to result in negation or the non-adaptive (so-called evolutionary 'blind alleys'), as it is the adaptive process of 'natural selection.' For Engels, this demonstrated that Darwin's theory was in essence a materialist dialectic applied to the natural world. Nature was an organic totality that could only be understood through an analysis of the dynamic interplay of its parts, just as the parts could only be understood by examining their interaction with the whole. Dialectic thinking directs attention to the processes of development through which these parts come to constitute the whole, and why it is that the parts may take on emergent forms that may be quite distinct from their pre-existing state.

A dialectics of nature raises the question as to whether humans as biological organisms should be conceived as objects of natural evolutionary processes beyond their control, or whether in fact we are emergent subjects of these processes with the capacity to respond proactively to our environment? Eight years after the publication of Darwin's *Origin of the Species,* Marx was writing in *Capital* about the ways in which human evolution could be traced through the development of tools much more pertinently than the fossil record: "This was because tools represented the development of human productive organs, the evolution of the human relation to nature" (Foster 2000, 201). A hundred and fifty years later, the view that the evolution of human beings is linked to our application of technologies is now a mainstream position within paleontology. And, while debates continue to revolve around the extent to which particular aspects of speech, language, and cognitive processing can be directly attributed to "technological praxis," the "plausibility of these evolutionary links" is now generally accepted (Stout and Chaminade 2012).

In 1985, the biologists Richard Levins and Richard Lewontin, published a collection of their essays entitled *The Dialectical Biologist*, in which they

presented the idea of the organism as both subject *and* object of evolution, and in particular the role that the organism plays in its own evolution. To quote from one of the essays: "An organism does not compute itself from its DNA. The organism is the consequence of a historical process that goes on from the moment of conception until the moment of death; at every moment gene, environment, chance, and the organism as a whole are all participating. … Natural selection is not a consequence of how well the organism solves a set of fixed problems posed by the environment; on the contrary, the environment and the organism actively codetermine each other" (Levins and Lewontin 1985, 89). This collection included a series of case studies that sought to demonstrate how biological organisms respond to the particular aspects of their immediate surroundings that are most relevant for their needs. This was in response to the fact that while Darwin himself had placed great emphasis on the ways in which organisms responded to changes in their environment, the post-Darwinian history of biology was seen as having been characterised by the attempt to identify these evolutionary forces as somehow internal to the biological organism, without reference to any external material interactive process. Indeed, up until the post-genomic turn in biology at the beginning of the twenty-first century, the focus was very much on the transmission of nuclear DNA from one generation to the next as constituting a predetermined path of evolution. Maurizio Meloni has termed this approach 'hard-heredity,' while recognising in environmental epigenetics a return to what he terms 'soft-heredity.' The latter is the approach that emphasis the role of the broader mechanisms of non-genetic inheritance: "A different style of reasoning … a radical rethinking of the ontology of the genome and even a dismissal of its role as the prime mover in biological processes" (Meloni 2016, 191).

Throughout his published work, Marx remained committed to a dialectical conception of nature, wherein materialism constituted both an ontological and epistemological category of understanding. At the level of ontology, this was manifest as a realist acknowledgement of the existence of an external, physical world independent of thought. While at the epistemological level, Marx recognised the unilateral dependence of the social and the human on biological or physical being, the former emerging from the latter (Foster 2000, 6). This was an understanding of the processes of natural history that was neither deterministic nor mechanistic. It is also a position quite distinct from the 'flattened' ontology and epistemology found in both transhumanism and posthumanist thought that frequently represents the relationship between humanity and nature in terms of pure teleology.

A Marxist Materialist Monism and the 'Biosocial'

Constructing a critique of the materialist monism of transhumanism and its assumption of an evolutionary technological singularity is no mere exercise in philosophical posturing. It requires us to positively engage with Marx's own materialist monistic understanding of the 'natural' productive capacity of humans. That is, the legacy of Marx's materialist and dialectical ontology that frames humanity's collective ability to forge its own distinctly non-teleological revolutionary pathway.

In Thesis I of his *Thesis on Feuerbach*, Marx rejects Feuerbach's materialism on the basis that it is marked by a dualism, where "the thing, reality, sensuousness, is conceived only in the form of the object or of contemplation, but not as sensuous human activity, practice, not subjectively" (Marx 1975, 421). While in Thesis III, Marx goes on to state that

> The materialist doctrine concerning the changing of circumstances and upbringing forgets that circumstances are changed by men and that it is essential to educate the educator himself. … The coincidence of the changing of circumstances and of human activity or self-changing can be conceived and rationally understood only as *revolutionary practice*. (Marx 1975, 422, italics in original)

The human activity of practice or mediation is therefore central to what has been described as Marx's own monistic materialist ontology (Mészáros 2005, 87). But this is not a monism of individual 'human essence' abstracted from historical and natural processes. For Marx, human essence exists as a

material reality constituted as "the ensemble of the social relations … [where] all social life is essentially *practical*" (Marx 1975, 423, italics in original). While Marx analytically differentiates between the human subject and the object of activity, this is a distinction that in reality is mediated by practice. A dialectical unity constituted by the social relations of production as they play out within an historical and materially grounded 'objective totality.'

In Marx's materialist conception of history, real living individuals are conceived as 'the true subject of history.' The course of human relations, from one historical stage to the next, is seen to reflect choices made and actions undertaken, but always contingent on material circumstances. To cite Marx's celebrated statement which opens *The Eighteenth Brumaire of Louis Napoleon*: "Men make their own history, but they do not make it just as they please; they do not make it under circumstances chosen by themselves, but under circumstances directly encountered, given and transmitted from the past" (Marx 1968, 96).

In contrast, the material monism of transhumanist which seeks to be both organic and non-organic in orientation, is in practice a teleological interpretation of human history. Its anticipation of an 'end of humanity' is quite incapable of escaping the dualism it claims to have overcome. As such it can be described as a philosophy of 'contemplation' that is unable to escape the logic of its implicit anti-realism. While in reference to its assumption of technological linearity, Alondra Nelson, whose work has focused on the idea of an 'Afrofuturism,' has noted in a recent interview that:

> There is psychic comfort in linearity; it makes us feel like we've harnessed the world, that we've got control over the world. Linearity makes it possible for one to get caught up in a sense of inevitable social, political progress. … I think part of the trauma of living under the raw racism, misogyny, and xenophobia of the Trump era derives from feelings of stalled progress and doused expectations. From an overinvestment in a progress narrative – particularly with regards to racial politics, issues of gender equality and equity – without sufficient attention to the fact that there's the falling backward as much as there are leaps forward, and understanding that that is an inevitable part of the social dynamic. The great mythos of American life is the idea that we're always improving, always moving forward. And the great story of science and technology is that it is also always leaping forward to good ends. (El-Hadi 2020)

While talk of the necessity of moving backward as well as forward does not constitute an embrace of a dialectic understanding of history per se, the situation described by Nelson does acutely identify the contradictions that underpin capitalist ideologies of 'progress.' As the philosopher Sean Sayers has argued:

> A complete and revolutionary social transformation is needed before our present alienation can be overcome and before we can begin to be at home with our own powers and creations. Only then will we finally be able to recognize that the "genie" of our technology and industry is in fact an emanation of *ourselves* – of our own powers and selves in alienated form. And only then will we be in a position to begin to take conscious social control of these powers and use them in a free and conscious way for our own real benefit. (Sayers 2005, 615)

While transhumanism is able to recognise the human capacity for technological innovation and scientific progress in its goal of liberation from bodily limits, it is incapable of acknowledging the ways in which this same capacity has also been deployed in the exploitation of humanity and the natural environment that we share in common with all life. This is reflective of the essential ahistoricism of transhumanist philosophy. Yet, the recognition that bodily limits and constraints are not fixed is a position that socialists should not easily dismiss. Post-genomic science, and in particular the field of environmental epigenetics, is increasingly (and inadvertently) providing the evidence of the ways in which the human body is constituted and interpenetrated by the social and economic relations of production under capitalism. This new understanding of what constitutes the 'biosocial' under capitalist relations of production offers a further basis on which to challenge the oppressive system we all live within. But ultimately it is not biological and cognitive transformation that will liberate human productive and creative potential; alienation and dualism can only be overcome in the overturning and transforming of the capitalist system of production.

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Transhumanism As the Evolution of the Real Subsumption of Labour Under Capital

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ABSTRACT: In the fight of living against dead labour, dead labour has consistently demonstrated a cunning ability to convert losses into victories. The enforcement of labour laws in key industrialized states in the 1860s, an apparent victory for the living, saw capital shift from absolute to relative surplus-value production, which was in the end a more efficient means to procure unremunerated value. In the mid-1900s (again in key nations) living labour won a greater "standard of living": capital turned consumption into immaterial production, and generated a cunning stream of value creation that living labour engaged in without coercion or *wages*. Hardt and Negri call this (and the commodification of other realms of life) the real subsumption of *society* under capital. In our century, living labour is aiming higher, at a "pleasure existence" free of pain and death. A Marxist analysis of transhumanism ought to focus on the potentiality for the transhuman state to be one of constant unremunerated value creation. Kurzweil invites us to welcome nanobots into our bodies, or to climb out of our bodies into drones or even entirely digital worlds. Yet if there is a still a battle waging between living and dead labour we should be wary of the colonization of our bodies by technoscientific capital and should eschew abandoning our bodies – if this represents the total absorption of living labour (which will no longer technically "live") into dead labour *qua* digital capital.

KEYWORDS: Transhumanism; Marx; real subsumption; hyper-subsumption

Introduction

This paper argues that transhumanism is the evolution of the real subsumption of labour under capital, following a nascent thought of Marx's from the *Grundrisse,* that the ultimate logic of subsumption is *incorporation:* dead labour pulling living labour into itself: "Thus the appropriation of labour by capital confronts the worker in a coarsely sensuous form; capital absorbs labour into itself – 'as though its body were by love possessed'"(1973, 704).

The first part plots the past trajectory of the subsumption of labour under capital, and extrapolates the future of this subsumption, positing that real subsumption follows a path from brutality to a more pastoral model – from a negative model of expanding and stealing labour-time (extending the realm of necessity) to a positive or creative model of converting not-labour-time into value production (colonizing and negating the realm of freedom). The second part studies the method of the evolution of the subsumption of labour under capital. In an expansion of universal alienation (Harvey 2018) – in which living labour is converted into a mere means of value creation, a servant of already existing values desiring ever greater valorization – dead labour attempts to erode the difference between living labour and itself, via an alteration of both, in which dead labour

gains for itself the traits of individuality, sociability, speech and thought, etc., becoming *lifelike,* and living labour becomes generic, predictable, programmable, less prone to physical breakdown and more rational, i.e., *machinic/thinglike*. Marx of course discussed this trend, noting "the conversion of things into persons and the conversion of persons into things" (1982, 209); and "progress … result[ing] in endowing material forces with intellectual life, and in stultifying human life into a material force" (Marx 1969, 500), and these particular ideas – usually called his theory of "reification" because György Lukács applied this term in early discussions on this theme (1971, 49) – ought not to be left out of a discussion of Marx and transhumanism. Nick Dyer-Witheford (1999) has already noted that Marx followed the work of Charles Babbage, and saw human attempts to create more intelligent machines to be consonant with the general trend of "reification," not something new and strange, but rather a perfectly logical continuation of what dead labour had been doing all along: becoming, or attempting to become, more *human.*

I argue in the second part that this continuing trend of universal alienation or reification is entering a heightened phase, beyond a somewhat vague notion of the personification of things and the reification of people. Today dead labour is deliberately and explicitly attempting to *attain* the basic attributes of life, and living labour is just as deliberately and explicitly attempting to *discard* the basic attributes of life: the goals of some variants of transhumanism (e.g., Ray Kurzweil), "spiritual machines" and human beings that do not age or decay, represent the culmination of reification and the finalization of the real subsumption of living labour under capital. The second part argues, admittedly rather speculatively, that the creation of the transhuman represents the extermination of both living and dead labour – which, as I will argue later, are today still distinct – and the creation of *homogenous undead capital* that has no purpose except to self-valorize: in short, it represents the *absorption* of labour into capital, the dream of capital now ideologically dreamed by us. The solution, which is gestured to in both parts, is to follow Marx, and 1) *embrace* the growing complexity and intelligence of technology, and 2) *protect* ourselves from this system becoming one in which "the process of production has mastery over man, instead of the opposite" (1982, 174-175), by taking a cautious attitude of *distanciation* and *limitation.* The usual trope of *limiting* technology itself via failsafes is problematic. The sophistication of technology is in itself not a problem (for Marx, steam power was already advanced/human/social enough to reduce human beings to a mere means of value creation). The question of the mastery of human beings by human products is rather to be answered by good technological hygiene, an approach that becomes complex as technology evolves into forms that resist being quarantined and mastered (as Marx proposed the factory could be mastered), but not impossible, as long as we take steps away from technological development becoming synonymous with the heightening of reification discussed above.

This second part also utilizes Nietzsche to argue that the human cannot be converted into data and remain human: this is a definitive *extinction* of the human, and not an *untergang* that might beget a new or higher form of the human being – there is much of the ape still in us, and even the worm, but the transhuman represents a creature that misunderstands and breaks with humanity entirely (Nietzsche 2006, 6). This extinction event, from a Marxist perspective, is the creation of a total synthesis of living and dead labour as the perfect culmination of the subsumption of living labour under capital: the logical conclusion of this process. Marx's belief that living and dead labour are ontologically distinct has fallen out of grace, but this paper explores the idea that this distinction is real, *and* under threat. Transhumanism frequently views all breaking down of the differences between people and things as progress. This paper counters that it is only progress in the continuing evolution of the real subsumption of living labour under capital.

The History and Future of the Real Subsumption of Labour Under Capital

Antonio Negri has for many decades written about the potential for Marx's concept of the real subsumption of labour under capital to be extended into contemporary contexts, and with Michael Hardt has

recently reiterated the importance of this concept (Hardt and Negri 2018). In Marx's formulation, the formal subsumption of labour under capital begins before even the age of the manufactories, as capital, as yet young and unsophisticated, first appears tentatively in the parasitic form of a "usurer or merchant," and then begins its first steps towards "direct control over the labour process," taking "inherited, traditional" forms of labour and extending them in duration, crudely creating a surplus while basically leaving the form of labour as it found it, though the purpose of production is now shifting from the production of use values and artisans to the production of exchange values (Marx 1982, 645). Capital's next, bolder move is to a) bundle all the artisans under one roof, and b) divide the manifold tasks of a single artisan into a series of menial vocations. This is a special phase of formal subsumption that begins to approach the real, as people are still doing basically what they did before, only now one element of a whole task is repeated all day. In this special phase, though it is beginning to extract relative surplus value, absolute is still the *modus operandi*. As Marx states in *Capital,* capital has an ambivalent relationship with both technology and relative surplus-value extraction (409). It ignores industrial technology when this is invented at the end of the 1600s, and when it does begin to take it up, seventy odd years later, it does so in a sluggish and inconsistent manner, mainly as a means to make less skilled and physically weaker labour-power (women and children) viable as variable capital (Marx 1982, 526), swelling its mass and obliterating the final weak resemblance of the manufactory to artisan labour. It is only *labour laws,* or to be precise, *labour laws that are no longer "a dead letter,"* that force capital (after a sixty-year "civil war" against the said labour laws) to fully embrace technology and relative surplus-value exaction (1982, 626). In the 1860s, one hundred and sixty years after a viable steam engine is invented (and ninety years *into* the industrial revolution), capital now comes to believe what it had for so long firmly thought to be an impossibility: that profit is possible without extensive child labour and a 72–76 hour average week for adult labour, if it fully, finally, embraces the technology of large-scale industry, and here, for Marx, the industrial revolution is finally released from the fetter of the small minds of capitalists who are obsessed with the logic of *absolute* surplus value extraction. To quote:

> The Pharisees of 'political economy' now proclaimed that their newly won insight into the necessity for a legally regulated working day was a characteristic achievement of their 'science.' … Hence the comparatively rapid progress since 1860. (Marx 1982, 409)

The conversion into real subsumption proper occurs here, in the 1860s, when frustrated capital (appalled at having to finally obey the law) pledges to extract as much or more value from protected workers (now largely male and adult, with exceptions) in the now limited time allotted. In short, the transition into the business of consistent relative surplus-value extraction, into the real subsumption of labour under capital, takes place *as* the complete leap into large-scale industry, at first, with dragging feet, believing it was losing its war with living labour, and soon with relish, seeing that the truth was otherwise, close to two centuries after machinery capable of supporting this shift is invented (Marx 1982, 496–497)! The form of this alteration (beginning between 1770–1780) consists of tools being taken from the hands of workers, and every manner of work that human beings had conceived for themselves in the past (generally forms in which they are the motive force of production) being rendered irrelevant. The body of the worker, her skill, steadiness, and strength, are cast out of the calculation. As the workers were earlier clumped together in association, to increase the productive force of all, now the tools are put into association as mega-tools, as machines, and now that they have their own intelligence, skill, and motive force – though Marx argues that these attributes are still ours existing in an estranged state (Marx 1982, 1024) – any piece of human meat, given a basic minimum of stamina, can create value at great speed. This is the beginning of real subsumption, and it means, in short, that capital is no longer content to fiddle with our existing work processes, but presents us with entirely new ones, "their physiognomy … totally

changed," redesigned for maximum value extraction: and all the while diverting agency, power, and knowledge from now thingified human beings into itself (Marx 1982, 390).

But there are problems for capital when it finally embraces technology and the concept of relative surplus value. Living labour, now largely male, adult, somewhat protected, and working under fully industrialized conditions (i.e., finally being *really* subsumed by capital, rather than just formally), does not create more value than before, but only embeds her value into a greater quantity of already existing values: she creates value equal to her wages at an earlier point in the day, but has created no more value *absolutely* than the old capitalist master of the manufactory could have extracted as personified capital. In a series of "damned figures" (Marx 1982, 961–962) that Marx wrestled with in *Capital,* he eventually shows how an increase in produced surplus value is not an increase in the production of real value: labour is a golden goose, but not as golden as the capitalist would like, for the only way to procure more unpaid labour is to embed it in smaller magnitudes into a greater gross of goods. Therein lies the rub, as for the capitalist to get her outlay back plus the surplus, somebody has to buy the staggering gross of low-value product, and the secret source of profit is that labour power is the unique commodity that not only *preserves* its value during production as its transferred and transformed but rather *produces more value than its own value*, its cost as a commodity (made up of the sum of the values of its production, in this instance the sum of the values it requires to survive and be basically "fit to work"), and thus capital cannot give labour the ability to consume more of its own product and keep its cost low at the same time. The labourer must be paid a sum sufficient to buy the goods she needs to *subsist* as a life form and no more: if her "style of life" is improved, her real cost is raised, and given that there are fixed limits to the amount of value that labour can produce during production, rising wages is a zero sum game that endangers the ability of capitalist production to be profitable. If the capitalist wants to sell all of her product she must raise wages, but the worker produces the value that constitutes these wages, and while she is producing them she is not producing surplus value, and thus the eventual sale in which the worker spends this value she created during a greater portion of the working day yields less profit. The value of a commodity is only profitable to capital if this value is greater than the sum of the values of the component commodities consumed during its production, and this only occurs when the real value of labour power is fixed at a level such that its value is considerably less than the value it creates while being consumed: as labour's value soars, it becomes like any other commodity, an existing magnitude of value that one buys only to see reappear in a new form, but with its *magnitude of value unchanged*. When wages go up, capitalist production becomes a benign exercise in use-value creation. One can inflate price above value, but Marx's main lesson in *Capital* is that the secret to capitalist profit is buying commodities at their value and selling them at their value (with the caveat that the value of labour power needs to be less than the value it is capable of creating), a system that eventually leads capital to a dismal choice between low profits or crises of overproduction (and they tend to prefer the latter). Overproduction also has one benefit, that subsistence goods are plentiful and cheap, keeping the value and therefore real cost of labour low.

The nineteenth century capitalist, also, cannot imagine a world in which workers will *consume* above subsistence levels if they are given excess funds. In the mind of this capitalist, probably correctly, the cunning worker (whose subsistence wage already leaves some small leeway for vices, though probably at the cost of hungry children) will *horde,* buy a little plot of land, and create her own means of subsistence without the burden of also creating an unremunerated surplus.

The capitalist also finds that each time she fires a worker and adds a machine, this change in the composition of capital yields less profit than the time before, for although there are fewer wages to pay, there is also less fresh value being added to a growing mass of existing values being converted into commodities: rendering the gross value of the commodities produced little more than the value of

the raw materials purchased, the "ancillary" costs of oil, coal, etc., and the cost of the depreciation of the machinery. The "law of the falling rate of profit" is of course more complex than this (Marx 1991), but for our purposes this simplification will suffice. One may postulate that it was not fundamentally wrong to posit that this form of the real subsumption of labour under capital, not the mere reorganization of labour processes but their destruction and recreation, would eventually expand itself to death (Grossmann 1991).

And yet, as critics of Marx's theory of the inevitable collapse of capitalism decry, capitalism did not fail. It had its most stable period sixty years after Marx died, and proved itself to be virtually invincible after surviving the decline of industrial manufacturing in the Global North/minority world nearly a century after his death. But the collapse of manufacturing is exactly the point here: it proves Marx's point that capitalism on its old path was doomed. Marx was primarily wrong in not imagining that capital had the capacity and willingness to abandon the pursuit of surplus-value via the production of things or, to be more precise, to supplement this doomed form of surplus-value production tied to use-value *qua* exchange-value production with one that had fewer limits. As will be discussed shortly, capital discovered a way around the consumption paradox – that capitalism geared solely towards material production can only profit if workers are paid a wage beneath the level required to make the purchases that will valorize the capital in the finished commodities – that Marx (and capitalists of his age) did not foresee: that if the production of things is rendered less profitable by higher wages, then the consumption of things must be recoded to create value greater than the deficit.

Here, Hardt and Negi become pertinent. Against the traditional narrative, which holds that industrial manufacturing collapsed in the minority world because capitalism survived by fleeing in search of cheap and unprotected labour, they state that capital, though it was of course also encroaching on more foreign territory than ever before, had found a way to continue its dark work "at home." Working alongside theorists of "immaterial production," including digital labour, flexible accumulation, and informational capitalism, Hardt and Negi moved beyond the old paradigm of real subsumption, stating that it can be "extended" into a study of the real subsumption of *society* under capital (2018, 442). Regarding the subsumption of society, one can posit that just as capital evolved (highly unwillingly) when it hit the barrier of "maximum working days," so too did it evolve when it hit the barrier of a "minimum wage" indexed to the rising cost of labour power. It solved the first problem by radically changing what "work" means, figuring out a way to create a false economy in which it *seemed* that workers produced more value even though they could not actually produce more value. Capital could not grab time anymore, so it figured out a kind of imperfect magic in which it could squeeze workers harder in the available timeframes (this is the creation of relative surplus value).

It solved the second problem, not by fleeing, as traditional wisdom states, and converting the "third world" into a factory for the "first" (though, as above, it did this too), but rather by ingeniously deciding that if minority world workers insist on inflating their own value as commodities, endangering the basis of capitalism as profitable exchange-value production, then this basis needed to be *altered* so that there could be a stream of surplus-value production distinct from traditional forms of productive labour. Capital begins its subsumption of labour under capital with the conversion of traditional forms of use-value production into an exercise in exchange-value production: its first revolution. When this process hits the inexorable limits discussed above (limits on the magnitude of the working day, "minimum wages," crises of overproduction, falling rates of profit), capital, as well as spreading to seek out unprotected foreign labour, also inaugurates its second revolution: value production *qua* "immaterial production." It begins within the field of labour itself – an early example is the "commodification of feelings" noted in the emotional or affective labour of the endlessly smiling flight attendant (Hochschild 1983) – but more importantly for this paper, it soon traverses *outside* the traditional sphere of labour, invading the realm of freedom, the areas of *life* in which we used to recover as human beings from the inhumanity of labour: "an idea or

an image comes to you not only in the office but also in the shower or in your dreams" (Hardt and Negri in Camfield 2007, 26). More importantly again for this paper is the manner in which *consumption* is converted into labour. Here capital begins tentatively also: we become the "audience commodity" for a small portion of our discretionary time via television and the radio (Fuchs 2014, 74–132). But this is no *imperfect* magic, and the ways our non-work lives can be made into "free labour" seem limitless. Value production untethered from material production finally makes living labour into a true golden goose. If the goal of capital is in "curtailing the paid part of his work and extending the unpaid part while keeping the working day constant" (Marx 1982, 970), then it has made for itself the perfect world today.

The first revolution was bitterly contested for centuries: from the death battle of the guilds against the loss of guild production in medieval city states, to the refusal of yeomen to become wage labourers, so intense that unemployment became a crime punishable by whipping, branding, disfigurement and death. The protests of luddites, for some reason lodged in the popular imagination, were prefigured by hundreds of years of resistance to capital's first revolution: the novel, perverse, and contested quest to link the production of things to the logic of profit, rightly guessing that this field of "sober" profitmongering would be more germane than its traditional means: piracy, profit *qua* "booty" (Weber 1976). It seems that the second revolution, in contrast, cannot occur fast enough for us: the quiet divorce of production and profit (a now loveless relationship, at least in the minority world), and the even more silent marriage of profit and life *qua* the marriage of the living and the dead.

Marx may have famously stumbled on the questions of "non-productive labour" and "specialist labour," but in the end he accepted that a) use-value creation is necessarily productive, but *value creation* need not be (Ringer and Briziaelli 2016, 40), b), "aggregate labour" or "collective labour" meant that all the kinds of non-productive labour taking place were contributing to the reproduction of existing conditions of existence as well as the total magnitude of value produced by a given society (Ringer and Briziaelli 2016, 40), and c) "universal labour" meant that thinking and invention in relation to "the general state of science and … the progress of technology" added value to the "general intellect" *qua* "techno-scientific power" directed against the proletariat (Dyer-Witheford 1999, 3-4). Value is social, after all, and so it can be posited that all wage-labourers are contributing. If one can accept this, it is not a large leap to accept that unwaged activities are potentially value producing also: free labour. "Housework" and childbearing/raising as "unpaid labour" were early contributions of feminist Marxism, as well as the Frankfurt School notion of the "culture industry" and Dallas Smythe's concept of the "audience commodity." All of these are noted by Hardt and Negri, but they also include in their paradigm of real subsumption: thinking, speaking, inventing, and interacting, or in their own words: "languages, codes, immaterial articulations of being together, cooperation, affective elements" (2018, 415). All elements of life are commodified, and human existence is split between waged labour and free labour.

As above, capital is wont to regress, and as we can see from "Special Economic Zones," it will travel far and even can revert all the way back to the form of the manufactory in the face of truly vulnerable labour. Yet the crux of the evolution of the real subsumption is that nobody is spared. "At home," among the more comfortable classes who do not work in factories, it means that not only has the modality of your work been given a new form, in which exploitation has been made opaque and basically bearable (our reward, material consumption, is also the same thing that keeps capitalism afloat), but in addition your whole life, how you speak, move, and even think, is rewritten, commodified, and given a form more favourable to capital's hunger for surplus value: your *being* is subsumed by capital. If your exploitation "at work" has been rendered tolerable, perhaps even almost human, and you believe you are well remunerated for the value that you generate, then this situation is offset by the surplus that you create by living outside of work, value that you create for no remuneration, sometimes even paying for the privilege (as Marx taught us well, if capitalism is functioning, value is being generated

that is not being paid for). In various ways, in recent times, thinkers have been putting forward a new Marxist message: if you are awake, you are creating value. One can focus on the "culture industry," games, social media, all technologically mediated communication, or the fact that to live means being in debt. Hardt and Negri state: all of this, yes, and more.

But here I respectfully part with Hardt and Negri, for they posit that the transition from organized mass labour on the factory floor to the "social labour" (Hardt and Negri 2018, 417) of a multitude is a process that alienates human beings from their own activity, but not in any particularly obstinate or odious manner. Against a theorist such as Christian Fuchs, who states that present forms of digital communication basically prohibit any true expression of self or act of self-emancipation (we need to build new forms if we want our use of digital technology to be anything but free labour for capital) (2010), Hardt and Negri see the seizure of technology basically as it is by the multitude and its turning away from the valorization of capital toward the valorization of self as an emancipatory possibility immanent to our own times, despite also understanding precisely how adroit capital can be when it comes to "usurping … creative dimensions for its own purposes" (Camfield 2007, 31). I am sympathetic towards Fuchs and what has been called the "foreclosureist approach" (Greaves 2016, 50), but my main reason for departing from Hardt and Negri is the concept of hybridization in relation to the emancipatory joining of people and technology. Hardt and Negri state that Marx understood that the antagonism between "man and machine" was false, and a coming together of both need not follow old power dynamics (Hardt and Negri 2000, 367). However, despite seeing tools as always already being prostheses (Marx 1973, 706), Marx is also wary of the coming together of "man" and "machine." He only really has two suggestions as regards how technology can be mastered, how it can be used by us rather than we being used by it. In the first, technology becomes automatic, and we oversee it from a distance. Marcuse sums up this position from the *Grundrisse:* "At the same time, an increasingly automated machine system, no longer used as the system of exploitation, would allow that 'distantiation' of the laborer from the instruments of production which Marx foresaw at the end of capitalism: the workers would cease to be the principal agents of material production, and become its 'supervisors and regulators'" (Marcuse 1971, 49; Cf: Marx 1973, 692–693; 704–705; 709). In the second, he states that our contact with machines during a working day needs to be contained and must be made as short as possible: he even calls this the prerequisite of freedom (Marx 1991, 958–959).[1]

For Marx, "civilized man" is an animal who develops machines that allow her to be surrounded by value/wealth ("need satisfiers") without having to expend much time or energy on their production. Alienated humanity is the opposite: labouring long on machines (their own productive powers in objective form) for benefits that are definitively capped by the capitalist system of production. Marx's two visions of the communist use of machinery prescribe first *distance* and later *making contact with machines as brief as is possible,* brief, rational, voluntary, and socially organized. No freedom is possible without this basis, and unfree/alienated human beings thrown into a capitalist world cannot attain freedom by becoming part machines themselves. For Marx, this would make his advice on how to become free and communist (keeping one's distance from machinery if possible, and minimizing contact in duration if it is not) impossible. Real wealth, as he writes in *Capital III,* is about reducing surplus-value production, and the key is a superproductive means of production turned away from that specific end (capital's constant end, though it changes means) and towards the reduction of time

1 The entire quotation is as follows: "Just as the savage must wrestle with nature to satisfy his needs, to maintain and reproduce his life, so must civilized man, and he must do so in all forms of society and under all possible modes of production. This realm of natural necessity expands with his development, because his needs do too, but the productive forces to satisfy these expand at the same time. Freedom, in this sphere, can only consist in this, that socialized man, the associated producers, govern the human metabolism with nature in a rational way, bringing it under their collective control, instead of being dominated by it as a blind power; accomplishing it with the least expenditure of energy and in conditions most worthy and appropriate for their human nature. But this always remains a realm of necessity. The true realm of freedom, development of human powers as an end in itself, begins beyond it, though it can only flourish with this realm of necessity as its basis. The reduction of the working day is the basic prerequisite."

spent metabolizing with one's sophisticated means of production (958).

Antagonism can be overcome, as Hardt and Negri note above, and machines can create time and freedom instead of confiscating both. But when Marx dreams of this he prescribes *distance,* spacial and temporal distance between "man" and "machine," at least in contexts in which a tool is a "conductor, directing his activity" onto/into an object of labour (Marx 1982: 285). We can choose to follow Marx or not: but we must not posit that Marx would be enthusiastic about cyborgs. When Marx had his science fiction moment (his advice in *Capital III* is more sober than his position in the *Grundrisse*, *reducing* rather than *overcoming* the need to work, *shrinking* the necessity that cannot be overcome), he dreamed of a factory capable of auto-valorization, "a moving power that moves itself," so that none of our lives would be necessity and all of it freedom (Marx 1973, 692).

Marx clearly understood that we require technology, and was contemptuous towards anybody who thought that freedom could be attained without technology:

> Slavery cannot be abolished without the steam-engine and the mule and spinning-jenny, serfdom cannot be abolished without improved agriculture. … In general, people cannot be liberated as long as they are unable to obtain food and drink, housing and clothing in adequate quality and quantity. (Marx and Engels 1998, 61)

However, though technology is basically neutral for Marx (neither good nor evil in itself), it is clearly pernicious under capitalist conditions, and even under proposed communist conditions Marx clearly prescribes an attitude of distance and caution. Freedom means that the "development of human powers … [is] an end in itself" (Marx 1991, 958–959), and this means ultimately that little of our mental and physical energy goes into considerations of survival. It is naive to think that we can have food, the means of communication, basic corporeal health, and clean clothes always ready-at-hand without also being surrounded by technology. But for Marx the condition of technology "working for us" is a clear demarcation between work and life, necessity and freedom, the technology of working and the technology of living, a demarcation that for us barely exists at all, and that would, as above, become unthinkable if we become cyborg hybrids. Optimal technology for Marx, as regards the technology of work, of mundane considerations, is a clearly demarcated factory that we approach as little as possible, and preferably never, except as a "watchman and regulator" (Marx 1973, 705).

When this space exists, and each and all get all basic needs met in exchange for a few *carefully quarantined* hours of voluntarily metabolizing with the technology of work as associated producers, then we can think about what kinds of benign technology we might like to have around (or perhaps inside) ourselves: technologies of health, entertainment, cleaning, transport, communication, i.e., technology that we utilize in the realm of freedom, in the portion of our day in which we are free, precisely because we have completed the value-producing segment of the day and have moved into the not-value producing segment.

Until we move into associated production and a circle is finally drawn around necessity, in hybridization we are naively embracing vampires and werewolves as friends, and falsely signifying capital's exponential expansion of necessity as freedom, in an abuse of language that makes Marx's conception of freedom difficult even to think. It is challenging (counter-intuitive, even) to imagine that the expansion of necessity could take the form of the end or mitigation of work, hunger, sickness and death (at first glance, such a world appears to be one of expanded freedom). But given Marx's calculus of necessity and freedom, necessity is necessary labour time plus whatever surplus labour time must be performed as a condition of being permitted to work (nobody is permitted to work only the hours necessary to create value equal to their means of subsistence). The realm of freedom expands or shrinks in inverse proportion to the magnitude of surplus labour one is coerced into performing. If all time becomes value producing, then all time is necessary – and surplus – value producing, and thus all time is brought within the realm of necessity, even if value production no longer

has the character of toil. As phrased in the introduction, capital has shifted its emphasis away from expanding necessity and towards the colonization of freedom. After the discussion above, we can see that the original intent of capital remains intact, though in more ingenious form. One's exploitation "at work" entitles one to the means for the greater exploitation of "living," and the ostensible expansion of freedom is in fact the opposite, the grotesque swelling of necessity so that it engulfs all of life, in such a manner that those still excluded have only one complaint: capital has not yet swallowed me.

Marx's paradigm of freedom equals not-labour time has been outsmarted by capital. We must now state that freedom equals not-value-producing time, with of course the caveat: unless that value creation is definitively an end-in-itself, i.e., not for any purpose or profit. Marx's strange praise of *useless* activity in the *Grundrisse* becomes clearer in this context. He writes that today any human growth is human sacrifice, participation in "total alienation" (488). To become an end-it-itself not devoted to an external end we need at least to begin to experiment. Time on social media, for example, appears to be useless. But if we were to go on strike in this context, and go for a walk that is not documented, we may see just how valued/valuable our "downtime" really is.

Living labour has fought against the expansion of labour time, because it was obvious that it was not living while it was working. The danger facing living labour today is less obvious: that the very act of living is being converted into value creation, that not just all time but even all *being* is being converted into value production, not as an end-in-itself (as a *human* existence) but as a means-to-an-end (the production of value for harvest by capital).

One might rebut that the term "value" is here being stretched out to the point of incoherence. But value has always been a *spooky* thing in the works of Marx: it is there, but cannot be seen, and yet the value in one object can help us determine the quantity in another. "It has been shown … how not merely at the level of ideas, but also in reality, the social character of his labour confronts the worker as something not merely alien, but hostile and antagonistic; when it appears before him objectified and personified in capital" (Marx 1982, 1025). It is there in specific magnitudes in the pages of *Paradise Lost,* and in a piece of linen, spun into these objects in different ways by that strange silkworm called the human being. Today it is there in the data that we cannot not create if we wish to "live" and work. The transhumanist wish to oneself become data/information in this particular climate is hard to fathom. It is imagined to be a kind of freedom, but Marx would ask: can a digital person perform an act that is an end-in-itself, which is to say, that creates value as a *praxis* with no reason/purpose external to itself, value that cannot be appropriated by capital? If one is digitally converted into capital, immaterial value that has no purpose except to metamorphose into a greater sum of value, then no act can be an end-in-itself, for every act is directed toward the grubby end of valorization.

To return more explicitly to real subsumption, Hardt and Negri understand and also somehow miss that in the coming together of technology and human beings, capital is doing what it did first to work, and then to all elements of life. To reiterate: in the formal stage, in relation to work, the way we used to do things is altered in non-paradigm shifting ways: they still resemble the old, and are limited, though they create more value than before. In the real stage, a new way of working is thrust upon us, in which our physical and psychical limitations become irrelevant. But something similar happens with life. In the formal subsumption of life outside work, the way in which we used to do things is again altered in non-paradigm shifting ways, so that they produce value where they did not before. But though capital faces fewer limits here than when it took over production processes, eventually it faces restrictions as regards the extent to which "languages, codes, immaterial articulations of being together, cooperation, affective elements" can be commodified and create value, boundaries linked to tradition and biology (two things that transhumanism states are its enemies). In the real subsumption of life, a new way of being with others and even *being alive* is thrust upon us, in which the physical limitations of pain, death, disagreement, and the need for external machinic aids are made

redundant. If these "enhancements" are being made available within capitalism, we can safely assume that it is not objective development – an impossibility anyway – but, like all advancement under the tutelage of capital, progress only in the obliteration of boundaries to human surplus-value extraction, the development of capital's ability to get value and not pay for it. The evolution of the real subsumption means that capital is imposing new forms of living just as it once imposed new forms of working. But this means we should fear rather than embrace hybridization, as this could be the imposition of a new form of being alive more conducive to constant value creation. Hard and Negri of course have the clear precedent of the factory: for Marx the factory was only an ill thing when it, as capital, ran itself via the management of personified capital, capitalists. But, as will be discussed below, hybridization is now the means that capital is using to make benign use of technology impossible. The factory can steal or create discretionary time, depending on its method of use.[2] As Fuchs understands, new means of value theft have no other possible means of utilization but value theft. Capital has evolved past the point at which it can be seized and turned to uses that are salutary for living labour: once capital is in us, its predatory nature becomes invisible, and its use of us is a warm feeling that we no longer associate with work and do not want to be without – it now kisses as it bites.

I will also respectfully depart from the concept of "hyper-subsumption," which is less based in Hardt and Negri's extension of the concept, but somewhat more modeled on Stiegler's concept of "grammatization" (Dyer-Witheford, Kjøsen, Steinhoff 2019, 51). In my reading, the next stage of the victorious subsumption of labour under capital is not a further autonomization, humanization and enlivening of crystalized human activity: "capitalism without humans," or without need of humans. I understand that "capitalism without humans" is not a predicted future, but more a correction to the optimism of left accelerationism and "luxury socialism," which assume that full automation of production, combined with a UBI, or other means of guaranteeing equal access to wealth produced, will lead to happy, post-work lives for human beings. The "hyper-subsumption" reading simply states that there is more to fear than AI "going wrong," either by worsening class inequality or increasing general surveillance, in the best case, or deciding that all puny humans must die, in the worst. AI could, on the contrary, "go right" and, in the best case, leave us behind, or in the worst case, lead to environmental catastrophe or total global war, in an equal, post-work world. But there is another manner in which AI could "go right" that would be disastrous: transhumanism, or, to be fair, transhumanism viewed cynically.

Against the concept of "hyper-subsumption," I will propose that, though for Marx, human activity has indeed, over the history of capitalism in the minority world, been becoming more independent from human beings, more abstract and more "erected opposite ourselves" (Marx 1973, 162) as an increasingly autonomous, sentient, and sinister power, for him this becoming other of the human species being is positive, and its absolute othering, no matter how complex it becomes, is an element of a simplified Hegelian dialectic, in which humans are overpowered by their immanent humanity, then overpowered by their own transcendent humanity, and then overcome their own humanity as an externality (Marx 1973, 158; 164). Consequently, the concrete externality and even autonomy of human relations is not something to be feared but rather something to be aimed at, against capital's current trajectory – a reversal of its old one – in that capital has ceased its mission to exist apart from us, and does not want to *supplant* us, but rather wants to *become* us, by changing what it is, and what we are, in such a manner that there will no longer be any meaningful difference between living and dead labour.

In short, in the next stage of subsumption, capital, having reached the limits of sucking our entire living time as an externality, is not about to float away and cut its ties with us, but is rather about to come home, back into our bodies, to suck from within, as hybrid

2 Lukács questioned Marx's optimism regarding how easy it would be to make a modern factory serve the modern worker (Márkus 1982, 158). The danger to human beings lies not just in the '*social forms of application* of these civilisationary achievements, but *grips their material content as well.*' If this was not the case then, then it certainly is today.

beings in which capital is truly the soul, and we just the vessel. At this point we will truly be post-human, living and dead labour as one, and the commensurability of both will enable flows of capital into us and us into capital – on the one hand, technocized biological forms, on the other, humanized technological forms, digital "minds" that can be disembodied, and "animate" inorganic constructs, perhaps "driven" by erstwhile humans, perhaps just thinking because they finally can.

"Hyper-subsumption" assumes that Marx's concern about people becoming things and things becoming people could result in the production of fully autonomous and sentient capital, capable of auto-valorization, and with no need for the human beings who have exported their humanity into their godlike products and retain little within themselves. The "real subsumption" feared by this paper is different, based on the solid prediction of Kurzweil that soon there will be no significant difference between people and things (Kurzweil 2005), which is to say, the future is not fully personified capital facing off with fully depersonified human beings, but instead the homogenized and democratic personhood of everything, the sameness of "man" and "machine" and the annihilation of both in this sameness. For this paper, this prediction has merit, though it will be signified as the path of the victorious subsumption of labour under capital: not a hyper but a *literal* subsumption. Signified in this manner, this paper will clearly be less enthusiastic than Kurzweil about the coming of this state, which is not capitalism without humans, but rather a capitalism that swallows humanity whole, so that things have become people and people become things in such a manner that neither exist any longer: just *persons, post-machines/post-humans.*

I am aware that this prediction will read a little strangely in this issue, in that for many authors, including the editors, the lines that Marx draws between life and non-life, and the human and the animal, are based in a more or less unreflexive and perhaps even toxic humanist anthropocentrism: against Marx, it is posited that human beings are not radically different to all other things, and dead labour could, at least theoretically, learn to do anything that living labour can do today (Dyer-Witheford, Kjøsen, Steinhoff 2019). For this paper, the possibility of the production of an AGI capable of value production is less of a concern than is the possibility of the *production* of human/non-human *commensurability,* and I posit that if we worry about machines becoming human and the human becoming thinglike, or machines becoming superhuman and the organic subhuman becoming obsolete, we miss the point that there is a vast chasm between a machine and a human, and if this ontological break did not exist, we would not have had to work so exhaustively, and frequently uselessly, at degrading it.[3]

Debates about whether sentient AI would serve, destroy, or ignore us, frequently assume that distinctness would remain between us and our "mind children" even when they became "just like us," that they would have good or ill effects on a *still distinct* human species. Kurzweil and Hans Moravec had a better sense that the human/non-human distinction would be obliterated with a certain level of technoscientific development. On the right of transhumanism, the sameness of "man" and "machine" is the culmination of humanism: "man" becomes rational master of the universe, by freeing pure consciousnesses from impure flesh. On the left, the "personhood" of all things represents the happy death of humanism, and the coming of an age where mastery is abandoned and all "persons" embrace non-exclusionary forms of being together. Resisting voices generally assume that we are already human and that this humanity is precious (Fukuyama 2002). I resist because a) transhumanism can be read as the evolution of the real subsumption of living under dead labour, and b) humanity, though our current state is ontologically unique, has not yet been attained, and none of the

3 Donna Haraway makes a strong early argument for us already being cyborgs (1991), and Bruno Latour perhaps makes the most impressive argument against the logic of thinking about tools and human beings as being in any way distinct (2002). I posit that Marx was not a naive realist, and that his phenomenological materialism (in which "nature" becomes saturated with human activity, and to some extent "agentic") is superior to new materialist approaches that do not allow any substantial demarcation between people and things. We lose a lot when we discard the concept of dead versus living labour: in particular, we abandon the ability to *resist* subjugation to our products and absorption into our products.

above approaches will get us there. Our uniqueness lies in being animals that have made massive errors about themselves and the world (that there is being, and that both exist). The errors have to an extent been salutary thus far, in that we have begun to transform so as to match them – "Error has transformed animals into men" (Nietzsche 1999, 182). Ironically, speeding up the transformation will be our undoing, for if we come to match our errors verbatim, we will no longer exist.

It is theoretically possible to develop AI that functions as we do (something that overestimates the power of its own will and is primarily motivated to act by a vast "primary processor" unknowable to itself, a machine capable of hating and harming itself)[4] and possible to augment a human being so that its psychic functions are transparent, programable, and upgradable (a human being incapable of, for example, breaking a promise or its own moral code). In this instance, everything would become "human," or everything would become "machinic," and at least one side would remain, but this is not what we are presently trying to achieve. What we want is AI with some limited ability to break its programming (an anti-machine) and a (post)humanity that is more agentic/rational and less prone to decay. The human and the machine will meet in the middle, and to say that humans and machines are the same on this day makes no sense, because there will be no such thing as either anymore. If we want to see this process clearly, we need to posit a hard ontological difference between the human and the machinic today, engaging in a much maligned "human exceptionalism," and ask some questions as to why we are so determined to deny this difference on the one hand (there are manifold campaigns to assert a) that human beings are not special in any way, and b) the personhood and "agency" of everything that is) and exert Herculean efforts to destroy it on the other (those who see the machinic as *not yet* like us will not rest until it has been made so). As I will demonstrate below, there is room to exist between an unreflexive humanism and the liberal transhumanism that, as Adorno quipped, predicting the coming of Althusser and Derrida, substitutes the toxic narcissism of humanism for the masochistic pleasure of dissolving the self utterly (1999, 65). It is possible to believe in a distinct human state that is not static and not even agentic, but is nonetheless something more than, as Castoriadis said in his critique of Lacan, tape recorders capable of adjusting to one another and making appropriate faces (1997, 170), and something less than a being that is divine because it partakes in some kind of beautiful, immutable essence.

I find more logic in the idea (which I see in Marx, Nietzsche and Freud): "man" does not exist, *let us finally make her*, than the popular logic of the left: "man" does not exist *and* must be annihilated as soon as possible. The enthusiasm for the post-human is rendered a little odd by the fact that we have not yet been human: in that it can be seen as a desperation to no longer be what we are not now. I also, however, take issue with "making man" via an "industrial revolution of the human genome" (Kozubek 2016).

As regards the coming forced commensurability of the living and the dead, the young Marx did of course imagine a reconciliation between living and dead labour – our wayward powers, knowledge, and

4 This paper largely takes the position that this is in actuality impossible. Others have written on "AI drives" (Omohundro 2008) and a "digital unconscious" (Le 2020) but what tends to be overlooked is that drives would not be what they are in organic life unless they created tensions sufficient for inorganic material to actually become "animate." In this hypothesis, the created machinic entity would be classifiable as inorganic life: as in us, "dead matter" would be compelled to follow contradictory motivations, wanting to grow, become larger and more complex, and wanting to diminish, becoming smaller and simpler. Drives are not drives if they do not create life, and nothing can be like us if it does not have drives: nothing that is not alive can be like us. That something that is not alive can appear to think or even actually "think" to the extent that it can "fool" a human is and has always been irrelevant. Given, however, that life is already a species of death (a rare species) (Nietzsche 2007b, 109–110), it is theoretically possible that we could create an ever rarer species of death, inorganic material animated by drives. This is what it means to create life, but this is of no interest to us, and we grind on in the game of making AI and robots that resemble our illusions about ourselves. Omohundro for me misunderstands the nature of drives when he assumes that AI will be dangerous because it will understand its own goals and ruthlessly pursue them according to its own understanding of them. To be alive and drive-driven means that one is always driven by at least two mutually exclusive drives: life is the impossible tension between drives that make conflicting demands that never present themselves clearly to consciousness. To have one primary goal, understand it, and pursue it by ignoring competing goals is not how life works, and is not how any human being works. An AI that operated in this fashion might be dangerous: psychopathic and self-altering/protecting, but this danger does not come from drives. That it operated in this manner would be evidence that it is without drives, a form of machinic life that is already rational, not a drive-driven thing seeking rationality.

wealth coming home as an end of estrangement, a "genuine appropriation" of objective development for subjective individuals – but *literal* subsumption as proposed here is a nightmare version of the *Gattungswesen,* capital's genuine appropriation of us, as it climbs into our bodies, and makes the act of living itself "immaterial labour": constant value creation. This final victory of dead over living labour, the actual subsumption of life (as opposed to all of our *time*), is not an inexorable fate, but it is something that we are investing a lot of time in attaining. Some work at making dead things think, others work at "engineering" the biological, others still work at forcing machines into flesh and flesh into machines: generally we see the processes of enlivening dead things and learning how to "engineer" the living as obvious elements of "objective" technoscientific development. This paper makes an argument for these processes being the extremely partisan evolution of the subsumption of labour under capital: the creation of human/non-human commensurability via the extermination of both and the creation of something new.

This argument, as already intimated above, will be heard badly on the left, for either "human exceptionalism" has always already been a myth or, if it does exist, it needs to be destroyed, as it supports racism, ableism, sexism, homophobia and transphobia, as well as speciesism/anthropocentrism. It will also be heard badly on the right, because there, human beings are nothing but inferior machines and machines are nothing but incomplete humans, so that both sides win when they come together. For this paper, in destroying the real and significant difference between living and dead labour, capital has finally found the best way to tan a hide: to stop living labour fighting it by erasing the difference between the living and the dead. If we can do so we are promised the end of death, pain, prejudice and irrationality. But in the history of the minority world thus far, capital has never lost, but only gained, when ostensibly things get more "comfortable" for human beings. It is time to consider the possibility that a being who feels no pain, boredom, or hatred of difference, is not a good-in-itself: these "improvements" may be ideological, our domestication for the benefit of capital – the creation of "an abased (more specifically a diminished) form of humanity, a mediocritization and depreciation of humanity" (Nietzsche 2009, 91) – appearing to us as objective progress.

The rise of "artificial selection" and the end of the gruesome chaos of natural selection is primarily critiqued because it is or could become "eugenics" (Rikowski 2003). We worry what will be deemed a "defect," on what criteria, and what richness and diversity might be eliminated in the search for perfection. These concerns are legitimate, and only loom larger if we posit that insane capital, and not just a "mad professor," begins to consciously take over the direction of evolution, not in the direction of a "master" but a perfect "slave" race.

This of course brings the paper into the orbit of biopolitics, and others have written about transhumanism as what Foucault called biopower: the turn away from taking life and letting live toward making live and letting languish: providing health for ideal liberal citizens as a new means of control.

> Biopower, Foucault wrote, is "what brought life and its mechanisms into the realm of explicit calculations and made knowledge-power an agent of transformation of human life" (Foucault 1978, 143). Life – its enhancement, amplification, quality, duration, continuance, and renewal – has become an urgent economic and political concern that government policy and practice address to wrest management and control of it (Tremain 2017).

Capital and biopolitics has been discussed before (Dyer-Witheford 1999). My emphasis, however, will be different, in that I will focus less on the horrors, harms, indignities and disappointments of the transformation of modern life, the broken promises of health, dignity, bodily autonomy and happiness, and more on the elements that make transhumanists *excited*, the actual potential to rewrite life in ways that might be experienced positively by transfigured or enhanced post-humans.

As Nietzsche noted long ago, the drive towards making life easier and less painful is sick, the dream of the weakling crushed by the same vicissitudes that

make vital beings yet stronger, and its culmination or success is sickness falsely signified as "improvement," a being in whom there is nothing to fear, and nothing to love, the "last man," a disaster and divine abortion, precisely because the maladies of life have been cured and the beast within actually tamed (2007a, 185–186; 2009 92; 89). Today it can be posited that capital is herding us in a similar direction, for its own purposes. We are too engulfed by the "slave morality" to hate the transhuman "ultimate man" for the reasons that Nietzsche would hate it (to despise a being for being incapable of cruelty and treating all equally is something that has fallen out of grace, except among nationalistic xenophobes). We can however question this direction from a Marxist perspective, and ask: what would it mean if toil and strife, pain and death, were actually removed from our lives within a still capitalist framework? Some would argue that this would be proof in itself that capitalism was dead, but I am not convinced, and would perhaps be a gadfly even in "paradise." Those who believe in extropy want to remove the limits of biology. Objections, as noted above, are largely "humanist," and are easily critiqued as being Quixotic quests to protect a mysterious essence, but we can object as Marxists from a different angle. We can, at the very least, with the concept of "literal subsumption," ask if this desire to move into a world without limit is really capital's desire to remove all final limits on our ability to create value, not by changing work, or the way we live, but by reaching into us and redesigning us, "improving" us.

On the Means of the Evolution of Real Subsumption

In 2005 Kurzweil proclaimed that the singularity is near: in 2022 he will release a claim that it is nearer. Following Charles Thorpe, I will define the singularity not as the moment in which AI "surpasses" us, but as the moment, eagerly anticipated by Kurzweil, at which there is no longer any significant difference between human beings and machines (Thorpe 2016, 96). In this paradise, a human being may choose to have an organic body that does not die, may choose an inorganic robot body of some kind, may choose some kind of middle ground between cyborg and android, or may choose no body at all, preferring to live a disembodied "digital life." Following Hayles (1999: 1-6), I will suggest that these newfangled ideas (beginning in analog form, as a human being sent via telegraph and a brain being put in a blender and poured into a computer) are old fashioned Cartesianism, inheriting myths about the mind/body split and human subjectivity/will that render many predicted outcomes problematic or impossible – exactly why will be explicated below. However, what is impossible today may not be so tomorrow. The machinery of large-scale industry, for example, was impossible in the ancient world, but it was made possible via the logic of technical specialization, changing work into menial drudgery that a machine can do better than a person (it is impossible to leap from *handwerk* to *die grosse Industrie,* but is made possible via the intermediate step of *Manufaktur*).

In the same way, a digital person is impossible today, but can be made possible tomorrow, if humanity is changed into the kind of being that could operate without a body, a being that actually does have a causal will, rather than just flattering itself by imagining that it has one. However, possibility is not desirability, and I will posit, against Kurzweil, that this world is not a perfect *aufhebung* in which the human and the machinic are both preserved, destroyed, and perfected at the same time. This is not a sublation but rather a subsumption, a macabre continuation of the "human" that is really its extinction. The loss of the human will not be noticed, because those bringing about the subsumption will not know what the human is. As Thorpe notes, it is engineers who will be the midwives of posthumans, engineers who are piously Cartesian without knowing it (Thorpe 2016, 71–72).

The axiom they take to be apodictically true is that the thinking substance can be lifted off the expendable extended substance, and placed into any other "body." The Cartesian/engineer logic cannot doubt that, given that an organic body is always already a prosthesis anyway, a machinic body need only have the basic equivalents of an organic body (some kind of brain and two thumbs), and a "consciousness," once "mapped/coded," can be

"transferred" from one to the other. The myth of *res cogitans* – the faith in "the I as substance" (Nietzsche 2007a, 169) – looms large here: *thinking is thinking is thinking*, and it matters little whether one thinks (or feels) with flesh or circuit boards, because the *res extensia* of/for thinking is a mere means, something that cannot think itself without the addition of the thinking substance, now conceived of materialistically, as some kind of pattern/code that can be digitalized.

In short, the idea of a transferable consciousness is absolutely Cartesian. One may accept this, and speak of a "digital soul" – or "robotic spirituality" (Kurzweil in Thorpe 2016, 121) – or one may speak more agnostically/pragmatically about some kind of "pattern of mind," but in the latter move one is simply making mind/brain signify what "soul" used to signify: i.e., the divine- or pseudo-divine thing in (but not of) our bodies that animates the dumb clay, and that can be in some way be "lifted out": in the new iteration, via digitalization.[5] Ultimately the concept of the digitalization of one's "essence" is (at least today) pure nonsense, based in the myths that cluster around and support the larger myth of *Ego Cogito*: "soul," "will," "action" and "causality." The crux of our extinction will be the creation of robots that are imagined to be "just like us," when in fact their manner of operation will emulate only our false beliefs about "how we work." Once we have created a perfect simulacrum of ourselves in robot form (which, as above, is really an inhuman anti-machine), we may then emulate the thing that we only falsely believe already emulates us, and via this series of distorted mirrors disappear completely. In the engineer logic, perfect, uncorrupted/uninfluenced efficacy equals perfected humanity/freedom (Thorpe 2016, 110). But a being of perfect efficacy has nothing to do with human being.

On the nature of the misunderstanding: if one follows Nietzsche here, consciousness is not responsible for actions but only reacts to them: "The will does not do anything … it just accompanies processes, but it can be absent as well" (2007a, 178). If one could somehow digitalize consciousness, and put it in a drone, the voice of the "I will" would be severely depressed, as the drone would "do" nothing at all. In a body, the drives of this body that do not *think* wage war against each other, and the will attaches itself in various ways to whatever drive happens to be in ascendance at a particular moment. The flea perched on the donkey's head is sometimes happy and sometimes sad about the paths that the donkey takes: but regardless, in the mind of the flea it is the flea that is "driving." In Nietzsche's example from *Daybreak,* a man at a market responds to somebody laughing at him (2003, 120). To paraphrase, on one day he laughs back: but on another he feels paranoid, fears that he looks ridiculous in some way, and becomes depressed and self-conscious. On another day he snarls out a challenge for a duel, sure that the laugh is mocking. In each case a drive has surfaced and demanded satisfaction. The will can, of course, admit that it had contrary intentions, but it causes despair to say "I willed thus and did the opposite" (the addict, in a glimpse of the truth, believes herself to be a failed human instead of a normal one, when she utters, I am a "feeble windbag" with a will of little efficacy) so instead we generally choose the positive feeling of saying "I willed thus and did thus," though in reality, the order is that "I did thus, and then as an afterthought willed thus," with the will being a master only of backdating effect and calling it cause. The doer is an illusion created by the deed (Nietzsche 2007c, 26).

If a machine could say, "I will it thus," and then "act" on this "will," or the digitalized conscious element of a human being could manage to get a drone off the ground, these modes of being would not in any way resemble the human mode of being. Whatever has been copied and downloaded would not be you: as Thorpe says in this context, one is *dead* if one leaves one's body (2016, 80). A brain is not a soul and there is more to being human than thinking: that I think is not proof that "I am," because thinking is a secondary process that creates only

5 Heidegger makes a version of this argument in *Being and Time*. As he accuses Descartes of putting window-dressing on deeply religious conceptions in the guise of philosophizing, I in turn accuse the logic of the digital mind/soul of smuggling in the old Christian soul unaltered, except in terminology (2005, 123). The dressing is very thin in the case of Kurzweil, when he speaks of digital chapels (Thorpe 2016, 121). One could imagine Freud's response to this predicted "future of an illusion": given that for him religion only exists where wishes are stronger than reason.

the illusion that I am what I believe myself to be, a thinking substance "trapped" in a body that "drives" this body, and could just as easily drive some other vessel, more easily if inferior "spindle cells" could be replaced with microchips. Nietzsche would advise that the consciousness that you want to "copy" is the "most impoverished and error-prone" element of you (2007c, 57). If an engineer could "copy" your consciousness, digitalize it, and put it in a machine, in reality this is akin to making a copy of that flea on the head of the donkey, and then expecting it to "drive" a cunningly constructed robotic donkey. The bulk of what we are *is* the donkey, and this is not understood. The death of the donkey is the death of you. If the engineer can "make it work," can make the ghost of a flea "drive" a body, she has only given flesh to a myth, and created something that did not exist before as a false copy based in a false understanding.

Though, as above, the existential impossibility of "digitalizing" a self today does not mean that it is impossible for all time. If we give our false beliefs about ourselves a solid form, we will become something easily digitalized. The only problem is that this is suicide, Socraticism perfected, an old wish to leave the body, its instincts, demands, and lying/defective senses, and live as pure reason in pure happiness/virtue, finally getting at *real* being, away from this mess of becoming that must not be true, that must somehow be a corrupted copy of something more eternal and unchanging (Nietzsche 2007a, 167). Plato of course said more explicitly that you have to die to leave your body and get to the invisible realm – though philosophers can get glimpses that will help their souls fly straight and true immediately upon death (1997, 71).[6] Today, Cartesian engineers do not understand that death is the cost of leaving the imperfect world that we live in. This logic is, in Nietzschean terms, decadence perfected, for if life was still ascending, we would prefer the older truth: "happiness is equal to instinct," and the old understanding that ridding ourselves of drives is ridding ourselves of life (2007a, 167). A being who is vital in this manner has no need of a myth of a "real" world beyond this one of untrue appearances: they love the world they are in and have a means of navigating it that has nothing or little to do with *thinking*. Nietzsche despises the being for whom "death, change, age as well as reproduction" are objections to life and even grounds for refutations of life: of the value of life (we can include suffering and hardship here as well). They are rather proof of life: if we rid ourselves of them, we have rid ourselves of life (2007a, 167).[7]

Following Nietzsche, we must posit that the drive to replace organic with inorganic components, to increase our power of reason, decrease the influence of the base drives, and get rid of change and decline, is a *death drive*. What the right-leaning transhumanist wants to rid herself of is life. Death is the only doctor here, and life the only disease. Inorganic life remains a theoretical possibility, but that is not the aim here. We are racing towards something that cannot be called life, something that requires no body or drives, perhaps because we want to die, perhaps because capital wants to create for us a state that is neither death nor life, or perhaps both, in that we do not fight capital this time because what it wants resonates with our own death wish.

As regards our current progress, there is, as above, a significant trend in the minority world today towards obliterating the distinction between "artificial" and "real" life, in that on the one hand we hunger for (and create) increasingly "lifelike" robots and AIs, better external simulacra, and on the other lose our fear of becoming cyborgs, better walking and talking simulacra of ourselves. The inorganic is *learning* to surprise and self-determine (though, as above, this growing *personhood* of things, thinking things, is more remote from actually being *human* beings

6 "But I think that if the soul is polluted and impure when it leaves the body, having always been associated with it and served it, bewitched by physical desires to the point at which nothing seems to exist for it but the physical, which one can touch and see or eat and drink or make use of for sexual enjoyment, and if that soul is accustomed to hate and fear and avoids that which is dim and invisible to the eyes but intelligible and to be grasped by philosophy – do you think such a soul will escape pure and by itself. ... Those, for example, who have carelessly practiced gluttony, violence, and drunkenness are likely to join a company of donkeys or similar animals." (Plato 1997)

7 Kurzweil is the epitome of what Nietzsche despised: "Whereas some of my contemporaries may be satisfied to embrace aging gracefully as part of the cycle of life, that is not my view. It may be 'natural,' but I don't see anything positive in losing my mental agility, sensory acuity, physical limberness, sexual desire, or any other human ability. I view disease and death … as problems to be overcome" (Thorpe 2016, 113).

than we imagine), and the organic is learning how to be "programmed" via biotechnological innovations and augmentations (as we move away from humanity towards an "improved" version of what we mistakenly already believe humanity to be), and via these dual processes some kind of coming together of the biological and the technological is becoming possible, as they become more alike, and less like what they once were (the human and the thing). The creation of artificial life that does not live is a "missing link," through which we can create an undead state to step into. The existential impossibility of digitalizing the self – William Connolly quips that the two pounds of bacteria we carry around must determine at least partially who we are (2013, 401) – does not negate the real trends that are occurring, eroding the difference between death and life (shattering the meaning of both) so that we can slip between them.

Kurzweil celebrates this process, and sees in it the end of pain, death, and even irrationality (2005, 163). This paper has already suggested that Marx might have a different response: that technology is evolving, not for our benefit, but for its own. Though Marx focuses on human stupidity, deformation, and general thingification in the face of the growing intelligence, power, and sociability of things, a careful reading of Marx suggests that human pain, death, and suffering are just one way for capital to tan a hide: Marx himself writes more than once that slavery to capital is capable of becoming more civilized and refined (Marx 1982, 486), hypothetically to the point of becoming "easy and liberal" (Marx 1982, 768-769) – though, as above, in Marx's paradigm, there are limits here, as for the reasons explained above, the expansion of worker consumption represents a danger to profit greater than the danger of unsold wares.

Following this nascent idea in Marx (and positing that today capital has well and truly solved the old problem of worker consumption resulting in loss of profits) it can be posited that presently technology *qua* capital is evolving in such a manner that the reduction of human pain, death and suffering and the maximization of surplus-value extraction have become one and the same process. It could be that the coming transhuman condition is nothing but the most recent, perhaps even final stage of the real subsumption of labour/life under capital. Marx wrote about the obvious exploitation of living by dead labour in the age of large-scale industry, but that does not mean that we cannot use him today to study the possibility of the less obvious exploitation of human beings in spheres beyond wage-labour today, following Harvey, Hardt and Negri, Fuchs and many others, and the even less obvious exploitation of the transhumans of the future, who cannot kill the capitalists and master the external factory for her own benefit, given that at this stage of the evolution of technology the factory will have been dismantled and will have colonized our bodies (disguised perhaps as "nanobots" that "service" our "organic components" and "micro-processors" that "help us to think") and we will no longer understand what "surplus-value extraction" means, because it will have been re-signified as (eternal?) "life." There is a basic consensus today on the concept that the "free labour" that we engage in while performing "digital labour" perpetuates the old separation of worker and tool, but this is a misconception (Greaves 2016, 54). In the old regime, the tool was taken from the worker so that the worker was only provided access to tools if she created value equal to her wages, and then a magnitude of surplus value. In the new regime, it is imperative that "social workers" are never without the tools of value creation, and indeed, after the commodification of communication and socializing, it is living labour who diligently makes sure that she is never without the means of "free labour."

In other words, one could say that Marx is *more relevant* than he has ever been today, in the "digital age," in that the leap from steam to digital technology was a quiet victory for capital, as technology evolved in its ability to suck time from workers, dismantling the clumsy factories, shrinking technology and making it portable, making it "fun," making the worker exploitable at his meal table at home (and in his bed, in the toilet, anywhere, anytime), converting the world into a factory floor of "universal alienation" in which the "breaks" are a continuation of work by other means. Just as for Michel Foucault, outmoded stone and steel prisons (which have nothing to do

with preventing or reducing crime) only remain to hide the fact that the real prison is outside, and the real power is being exercised on those who are ostensibly "left alone" by the state (Foucault 1991), perhaps we can propose that capital only leaves a few factories around in the so called "developed world" to hide the fact that *the real exploitation* (the most effective, which is *not* to say the most unpleasant) is occurring outside of them.

A large part of the evolution of technology is to make the "user" enjoy being used, to hide the fact that the technology is getting more out of the interaction than the human being, as technology *qua* capital turns the user into the "product" in what was erstwhile "not-labour"/free time. And it goes beyond mere enjoyment: "The need for possessing, consuming, handling, and constantly renewing the gadgets, devices, instruments, engines, offered to and imposed upon the people, for using these wares even at the danger of one's own destruction, has become a 'biological' need." (Marcuse 1971, 11). The coming generation, who will live more of their lives "OL," will have *no sense* that "virtual reality" is a limitless factory that feasts on their being. To "unplug" is no escape, if one's body is swarming with nanobots. COVID-19 and whatever comes next is the perfect preparation for such a future, as we are trained to substitute real contact for digital and to think of our bodies as liabilities and real contact as a risk.

The thought of changing technology so that it *serves* human beings could become unthinkable in this totally reified future, for slavery to capital will have become so "fun," "safe," "interactive," and so indistinguishable from life *per se*, that changing anything would result in a kind of ontological (and perhaps literal) death. If Kurzweil is correct (and a Marxist analysis of his work makes it look less like science fiction, despite its unreflexive metaphysics) then future generations, when no more of their lives can possibly be lived "OL" (when the body itself, on top of being vulnerable to infection, becomes a limit to accessing new forms of thinking and experience that "upgrades" can no longer overcome) will attempt to relinquish the last segment of "life" remaining to them and climb out of their bodies, into capital *qua* technology, into the virtual factory of fun. This would be the perfect victory of capital over labour, the dead over the living. The precursor to this stage is the total colonization of the human body by sentient or near sentient machinic capital, changing the way that we exist: rewriting the human so that it is so different to traditional, inherited forms (though it may match our delusions well) that it could actually be digitalized.

Ironically, this final victory of capital might be celebrated by Marxists, who will declare a) that their fear about "unequal access" to augmentations and enhancements was exaggerated, and b) that we are finally in a "post-work" world – unable to see that in fact we are in a world of constant labour: creating undreamed of surpluses of value for capital in our comfortable, "post-work" "lives."

It must also be considered that this talk of real and virtual life is anachronistic. One could perhaps in the future be in a public bar or classroom, without the means of being able to tell or care who is physically present, and who is physically elsewhere.[8] This flexibility would of course register to users as a benefit. But the technological means to make it possible would also render impossible any mode of being together that was not technologically mediated: live conversations would be phone calls, just in case the person was not there, even when they were, or perhaps just because cybernetic implants made all speaking and hearing into digital processes. Visual and perhaps even tactile data would run through the same technology that takes over the task of Kant's imagination: making the absent present, just in case the person was not there, even when they were. The commercial failure of "Google Glass" could be seen as a signal that such a thing would be rejected, but Google has not given up, and the next generation of AR glasses are rumoured to be coming soon: cheaper, lighter, and using Lidar technology instead of visible cameras. We will soon see if the next iteration will be rejected also, or this time embraced. If it is not

8 This article was written before the announcement of the rebranding of Facebook as "meta" and the proposed creation of the "metaverse" of which Mark Zuckerberg said: "We'll be able to feel present – like we're right there with people no matter how far apart we actually are." (Paul 2021).

embraced, we should not discount pressure being asserted, via the creation of applications specifically designed not to function on earlier devices.

Whether the transhuman is an inhuman being that can be converted into pure data in a final evolution of subsumption, or whether the difference between the digital and real will be rendered redundant with the obliteration of the difference between life and death, this paper has suggested that there are reasons to fear the coming transhuman state.

Concluding Remarks

It is odd that today what is feared by many, that our intelligent products will outgrow and enslave us if we develop them too highly, is basically what Marx called "business as usual" under capitalist conditions: this is his technical definition of alienation (Márkus 1978, 43). The future we fear is what we are living, and have been living, for a very long time. The future we fear is also the future we are building: not because we are insane, but because we are already subjected, and the future of our subjection is that capital has rebranded it as greater comfort and less illness: "new life" (perhaps "life flavoured death" sums it up best). Clever capital lets us huddle in fear watching HAL 9000 and SKYNET so that when it really gets us we will sigh with relief, and signify our final subsumption under capital as a disaster averted. For human beings to be mastered by human products is no world fit for life, and the answer is not to bring the technology currently mastering us from the outside inside of us, or at least Marx's answer is not. The answer, or at least Marx's answer, is to master the means of production at arm's length, with constant vigilance, and by maintaining as much distance as is possible. As Thorpe notes, technology has become our everything: devices that we work on, talk through, view the products of the culture industry though, and have sex with, so that all of these things become dehumanizing/labour (2016, 185).[9] The coming together of the human and the machinic has been viewed in many ways: as something already occurring and potentially positive, in as far as it could be the end of "human exceptionalism" (Haraway), as something that is beginning, and cannot be stopped, but that is for all that definitely positive (Kurzweil), and as something to be railed against, because it will mean the end of "human nature" (Fukuyama). The "human nature" that this paper wants to preserve from extinction is about as different from Fukuyama's as is possible: deluded, unagentic, and generally mad (Fukuyama, despite a strange engagement with Nietzsche, overestimates the power of the will almost as much as the right transhumanists, sharing the perverse idea that human beings have a strong will but that the best political systems are the ones that minimize conscious human intervention).[10] It is difficult to argue that these qualities should be preserved. Some transhumanists may even celebrate the extinction of the human being for the very same reasons and, even following my logic, state that it does not matter that we are destined to become a copy of something that never existed. Is it not the point that what we are means nothing, and has nothing to do with what we can make of ourselves? Against this strong argument, I reiterate my proposition that transhumanism could be the victory of capital over living labour, the final subsumption of labour under capital via the destruction of the differences

9 "The device that is the gateway to an infinite variety of sexual pleasures is also the device to which office workers are tethered during the working day."

10 To be fair, my own proposition is inversely perverse, understating the human will but demanding conscious and democratic human direction of human affairs. But with Marx, Freud, and Nietzsche, I only stress the "death of man" as a corrective to misunderstandings, a continuation of Schopenhauer's critique of the general overestimation of the sovereign will. My reservation regarding the gleeful determination to pronounce the end of the human and denounce any claim that the human being might be something special is that we are celebrating the demise of something that never was. Against the call: "man" never was, death to "man," I posit that actually attaining some degree of the agency we have always supposed ourselves to have will give us a greater power to clean up our messes than forbidding any desire for agency or control, or stating that these things are impossible. Right transhumanism of course also wants greater power to will, but the path towards it lies in understanding our present dearth of will and developing it internally, rather than in creating external wills and emulating them: which is the death of "man" via other means. A figure such as Nietzsche's "sovereign individual" can only be developed by training our drives and then letting go of consciousness. This kind of "self-responsibility" is very different to pure, transparent will, with nothing to guide it but a logic of rationality/efficiency that it thinks is objective.

between them. We need not perhaps be as cautious as Marx, and demand that technology be kept at a distance forever. We should, however, demand that technology be kept out of our bodies for as long as it retains the character of capital. For most of the history of the minority world, technology and capital had nothing to do with one another. As above, against the pervasive myth (which should be dispelled in kindergartens) that greed is innate, that capitalism is about greed, and that therefore capitalism as we know it is a foregone conclusion, Weber instead tells us that the marriage of capital and productive technology in the medieval world was absurd and contrary to all known logic. Guild logic was so opposed to production for profit that this marriage effaced the guild from the earth, and if the guilds had won, beating the revolutionary bourgeoise who deformed the logic of nobles and pirates into something strange and new, legal and sober piracy via production (production that cares naught about production) the world would be a very different place.

Today our task is to affect a divorce between capital and technology. If we can do so, and still desire some kind of transhuman state, then that will be an entirely new question. But if we do, we must ensure that this is not a literal subsumption of humanity, not capital seeking direct control over the *life* process, as it once sought and gained "direct control over the labour process." Adorno once said that we are no longer alive if we become a mere addendum to the production process (1999, 15–16; 27). If being alive itself becomes a production process, even eternal, pain-free life will be nothing but eternal death: tension-free, walking, waking, death.

To finish on a less dramatic note, Glenn Rikowski (2003) notes that the whole transhumanism debate is marred by a misconception: we need not be invaded by alien technology to become capital: for him this is something that has already occurred. There is merit to the idea that the fight against capital is psychological, an internal war. Yet this leaves unexplained the desperation with which techno-scientific capital is presently attempting to degrade the difference between us and it. The fight of living against dead labour may well be psychological as well. But as living labour, we are different than dead labour. To degrade this difference is to become transhuman, and to overlook the more modest aim of the nineteenth century, still not attained: to teach us that we are not yet human, but could become so, by becoming a little more ego and a little less id; by ceasing to have only the soul of capital in our breast, if we are bourgeois, and no soul, if we are worker; by binning morality (and especially the drive/body/world hating morality of Socrates/Plato/Christianity/liberalism), which is today a death cult of reason, and becoming what we are.

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Critical Transhumanist Aesthetics? The Automatic Subject, *Actress* and *Young Paint*.

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ABSTRACT: When discussing the relations between Marxism and transhumanism it is first necessary to discuss the place of transhumanist discourse in capitalist society. Therefore, I will discuss the – controversial – notion of value as the 'automatic subject of society.' Marx can be read in a way that emphasizes the *always already transhumanist character of capitalism* – because in capitalism humans are not the subject of society, rather *value* in its movement of capital accumulation is the 'automatic subject.' Transhumanism is not opposed to capitalism, but one consequence of capitalism, although there might be opposing and emancipatory potentials in it. Such potentials could be discovered by art. In a second step I want to reconstruct the situation of the 1910s and 1920s and how 'automation' and related notions were discussed and criticized in a heterogeneous formation between Fordism, Russian Formalism, Surrealism and psychoanalysis, especially in relation to artistic strategies. This part is a short sketch of a very complex situation. Why this constellation? Because one of the central features of this discussion was – presumably because of the background of Fordism – to ascribe to art the potential to 'deautomatize' perception and cognition. In the final part I want to juxtapose the first two steps and focus on the example of black British musician *Actress* and his AI- Double *Young Paint*. Can we glimpse at least some idea of what a *critical transhumanist aesthetics* could be? Is it an aesthetics which uses the automatizing technologies of our current situation, but also disrupts and deautomatizes them?

KEYWORDS: Aesthetics, Artificial Intelligence, Automation, Media Art, Transhumanism

1. Introduction: Transhumanist Aesthetics?

In his groundbreaking paper on the philosophical relations between transhumanism and Marxism, Steinhoff makes an interesting observation: "Transhumanists … desire to use such new and emerging technologies as genetics, robotics, artificial intelligence, and nanotechnology to achieve ambitious goals." One of these goals is to enhance "intellectual, physical, aesthetic and ethical capabilities" (Steinhoff 2014, 2). I want to emphasize especially the augmentation of *aesthetic capabilities*. There are several movies and tv-series in which we can see fictional enhanced transhumans – but producing an advanced art or showing enhanced capabilities for understanding art is, as far as I can see, never thematized. How could aesthetic capabilities be enhanced? We could imagine artificial eyes that see more – but the art we historically have is made for our normal eyes, so supposedly nothing new could be seen. There might be (stories of) enhanced people being able to tell forgeries from originals by looking with their enhanced eyes and therefore be able to produce better forgeries. There might be people

which have enhanced capabilities and therefore can produce artworks for people like themselves, which exhibit more subtle formal structures that can only be perceived with an enhanced sensorium. We'll see. But there is a more recent topic I want to focus on.

Steinhoff mentions 'artificial intelligence' (AI), a form of 'new and emerging technologies' that has been discussed a lot recently. Could the cooperation between humans and AI bring about new aesthetic forms? Well, perhaps – Miller (2019) has written an impressive study on this issue. But is that transhumanist? Was art not always about artists working with – and against – different materials? Is AI not just another brush? Yes maybe, but perhaps it's not. See the case of *Actress* aka Darren J. Cunningham – a highly interesting DJ doing experimental electronic music:

> Young Paint (aka Jade Soulform aka Francis aka Generation 4 aka AZD) is a Learning Program that has been progressively emulating the Greyscale to Silvertone process Darren J Cunningham started in 2008,' read the introduction to an eponymously named mini-LP. The sixsong release was co-written in a collaboration between Cunningham and an Artificial Intelligence capable of generating electronic compositions. (Pemberton 2019)

And the website of the *Transmediale*-festival says:

> Young Paint has been progressively learning and emulating the shadowy, unpredictable, UK bass- and rave-inspired music of Darren J. Cunningham, aka Actress. Over the course of 2018, the AI-based character has spent time programming and arranging Cunningham's sonic palette, learning not only how to react to his work, but also to take the lead with the occasional solo. A life-size projection of Young Paint working in a virtual studio parallels Cunningham's performance on stage, visualising their collaboration.[1]

Obviously *Young Paint* is not conceived only as a tool, but also as a partner, automatizing and at the same time transforming the style of *Actress*. It's an assemblage of a human musician and a learning neural network. Perhaps this approach could be understood as a kind of transhumanist aesthetics.

Figure 1. Darren J. Cunningham (Actress), left, and on the right "Young Paint" his AI-Double. (Sónar Barcelona 2019)

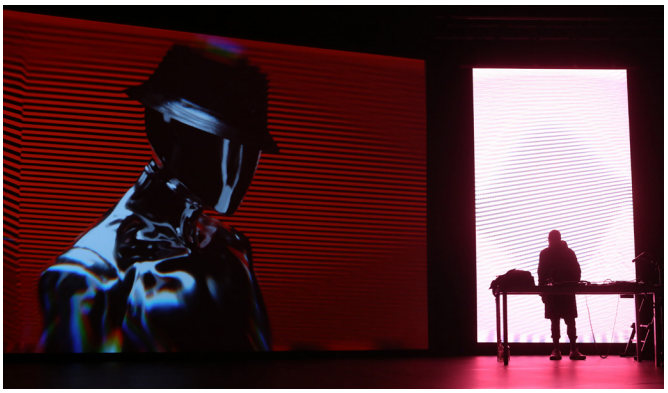

Figure 2. "Young Paint" his AI-Double, together performing live. (Transmediale 2019)

But to better understand this example and transhumanist aesthetics in general, it is necessary to discuss the place of transhumanist discourse in capitalist society, the possible role of art (or at least some forms of art) in reflecting on or working with transhumanist discourse.

In Part 2 I will discuss the (controversial) notion of value as the 'automatic subject of society' (cf. Schröter 2011). Marx can be read in a way that emphasizes the *always already transhumanist character of capitalism* – because in capitalism humans are not the subject of society; rather *value* in its movement of capital accumulation is the 'automatic subject.' The "roaming automaticity of Capital" (Badiou 1999, 57) gives rise to transhumanist discourse (see Steinhoff 2014 for more details on transhumanism). How are humans embedded there? What does this mean in

1 See https://transmediale.de/content/actress-young-paint-live-2-Feb. The question, how this learning network exactly operates, is ignored here.

regard to the role and development of technology? Transhumanism is not opposed to capitalism, but one consequence of capitalism, although there might be opposing and emancipatory potentials in it. Such potentials could be discovered by art. Therefore, it could be interesting theoretically and politically to find forms of art which deal implicitly or explicitly and perhaps even critically with automaticity, automatism and automation.

In Part 3 I want to reconstruct the situation of the 1910s and 1920s and how 'automation' and related notions were discussed and criticized in a heterogeneous formation between Fordism, Russian Formalism, Surrealism and psychoanalysis, especially in relation to artistic strategies. This part is a short sketch of a very complex situation. Why this constellation? Because one of the central features of this discussion was – presumably because of the background of Fordism – to ascribe to art the potential to 'deautomatize' perception and cognition.

In the conclusion I want to juxtapose Parts 2 and 3, and come back to the introduction, to *Actress/Young Paint* and some other material. Can we glimpse at least some idea of what a *critical transhumanist aesthetics* could be? Is it an aesthetics which uses the automatizing technologies of our current situation, but also disrupts and deautomatizes them? As the analysis suggests, Marxists should look to art because artists detect changes in the techno-environment of capital at an early stage and therefore allow us to think through the status of the human and its enhancement.

2. Transhumanism and the Automatic Subject

Marx's *Capital* does not begin with 'capitalists' as a group of people. It does not begin with people at all (except for mentioning 'society'). It begins with the *commodity* – which Marx explicitly designates the "elementary form" of wealth in "societies in which the capitalist mode of production prevails" (Marx 1976, 125). Why the elementary form, from which Marx derives all higher forms like capital etc.? Because it has two aspects: a sensuous one (use-value) and an abstract one (exchange-value). A commodity is an object (or service) with a specific, concrete, irreducible use; however, at the same time, it is also completely unspecific and abstract. This is because it is exchanged, and in order to exchange two different commodities, all concrete and different properties must be ignored in the process of exchange. The only respect in which the two commodities are identical is their exchange-value. Exchange-value makes its appearance in social exchange. It is abstract – and as Marx attempts to show in detail, this abstraction results in the formation of a special, separate commodity: money. A society based on exchange is only possible with money as the objectification of abstract value (cf. Heinrich 2011, 196–251).

The division between concrete and abstract, and the conflict that arises between these two poles, forms the core of capitalism and can be seen as the basic reason for capitalist crises, such as climate change.[2] Marx argues that abstract value tends to grow infinitely. Different commodities have qualitatively different use-values, but different sums of money can only differ quantitatively. This can only make sense if, following the cycle money-commodity-money (M-C-M), the result is *more* money. Once the relation of capital has been established, more value in the form of money (M*) must be created from value through the intermediary step of commodity production and surplus value through class relations: M-C-M*.[3] And since value is purely quantitative, this movement is in principle endless (why only 10,000 units of surplus value rather than 100,000, why not 1,000,000 or more?). "The circulation of money as capital is, on the contrary, an end in itself, for the expansion of value takes place only within this constantly renewed movement. The movement of capital is endless" (Marx 1976, 253). Capital is not the sum of all capitalists or the sum of all wealth (hoarding), *capital is the movement of making more value out of value*. Marx thus shows that the "competition of capital … is only the external form … in which capital's inner drive to accumulation is realised" (Deutschmann 2008, 132).

The class division developed historically in order to allow the production of more value: "Commodities cannot themselves go to market and perform exchanges in their own right" (Marx 1976, 178). The

2 This is why Christian Lotz can argue that capitalism forms a 'culture of abstraction,' cf. Lotz (2014a).

3 This formula is so central that an entire book about capitalism could be named after it. Cf. Fülberth (2005).

enrichment of capitalists is just a side effect of the movement of the increase in value, not its purpose. Hence, "owners of capital and, likewise, the managers, prove to be mere functionaries of the 'automatic subject,' which operates beyond their aims" (Kurz 1999). Capitalists and workers alike are "personifications of economic relations" (Marx 1976, 179). It is not a psychological attribute, such as the 'greed' of people who happen to be capitalists, which drives the whole affair: in a society directed at constantly increasing value, every individual has to act exactly the way they do simply in order to survive. Hence, the goal of production is also not to satisfy concrete needs of whatever kind, even if this can happen mostly by coincidence in certain historical constellations. Capitalist society is a kind of cybernetic system[4] whose sole purpose is to make more value out of value, more money out of money – no matter the consequences this system has for people and planet, or even for itself. Money as an expression of value is an "end-in-itself" (Kurz 2012).[5] The purely quantitative abstraction governs all concrete objects and processes and seeks to constantly expand itself further – but this expansion encounters resistances. There are objects and processes that cannot be subsumed seamlessly or without rest into the logic of value. Roswitha Scholz (2011) gives the examples of "love," the economy of feeling, (child) care, etc. Marx describes the endless self-movement of value in this manner:

> It is constantly changing from one form into the other, without becoming lost in this movement; it thus becomes transformed into an automatic subject. If we pin down the specific forms of appearance assumed in turn by self-valorizing value in the course of its life, we reach the following elucidation: capital is money, capital is commodities. In truth, however, value is here the subject* [*footnote: i.e. the independently acting agent] of a process in which, while constantly assuming the form in turn of money and commodities, it changes its own magnitude, throws off surplus-value from itself considered as original value, and thus valorizes itself independently. (Marx 1976, 255) [6]

Can the automatic subject be linked to the concept of the fetish? In connection with financial capital, Marx himself also talks of the "automatic fetish" (Marx 1981, 516).[7] In my reading of Marx I want to emphasize the objective character of the fetish. The fetish[8] is not something psychological like a brand cult, compulsive consumption[9] or an *idée fixe*. It is also not a mere "ideology" according to which people simply *believe* that value as money 'rules the world.'[10] "The theory of 'objective fetishism' assumes, by contrast, that as long as value, commodities and money exist, society will *actually* be ruled by the self-movement of the things it has created." (Jappe 2005, 84, emphasis in original). We all know this unconsciously[11] – when we say 'money rules the world' or 'money makes the world go round' or when we speak of apparently immutable 'market laws.' It is "a social relation of things" (Marx 1904, 30) that fundamentally constitutes capitalist society.

In line with this reading of Marx one could say that capitalism is always already 'transhumanist.' Its central operation is the self-referential 'autopoiesis,' which one could formulate with a notion from post-

4 Cf. Kurz 2002: "It was only through this new economic logic that a total market economy could come into being in which profit-focused companies compete with each other and all people are reliant on 'earning money.' Money is now related to itself in a cybernetic cycle. In its absurd self-movement, it renders itself as an end-in-itself independent of all human subjects and begins its own spectral life."

5 Cf. also Kurz 1999: "But if 'labor' is the substance of value, and thus the substance of money, one therefore has to describe labor too as an end-in-itself: it is the self-referring and permanent alienated expenditure (*Entäußerung*) of human energy."

6 The concept of the 'automatic subject' is controversial. Jürgen Behre and Nadja Rakowitz (2001) argue that Marx didn't use the term to describe the structure of capitalism but to designate an ideological mystification ('self-moving value') that makes class struggle invisible. Their position has been criticized by Michael Sommer and Dieter Wolf (2008, 48–85), who argue for the 'automatic subject' to be taken seriously as a valid description of the cybernetic structure of capitalism.

7 Cf. Kurz (2004, 187) on the equivalence between the 'automatic subject' and 'the fetish.' 'Automatic subject' and 'the fetish' should be related more clearly to the 'cybernetic,' mentioned here several times. All notions seem to imply a kind of self-containing, circular structure. I cannot go into these details here.

8 On the theory and history of the concept of the fetish, cf. Pietz (1985; 1987; 1988). Cf. Iacono (1992).

9 As Böhme (2014, 223–295) occasionally suggests.

10 On the fetish and ideology, cf. Rose (1977) and Dimoulis and Milios (1999).

11 Kurz (2004, 165–180) describes how an awareness of the automatic and mechanical character of domination, transcending any subjective purposes of any rulers, gradually appeared: from bureaucratisation theories (Weber) and structural Marxism (Althusser) through to Foucault and systems theory (Parsons and Luhmann).

humanist Luhmannian systems theory (Luhmann 2012, 32–34). In systems theory people are only the environment of the social system(s) – and in Marxian theory, as read here, people are only the environment of the automatic subject. Or to formulate it ironically with McLuhan: People are the "sex organs"[12] of value.

But is 'transhumanism' really the appropriate term here? If we understand 'transhumanism' as the technological improvement of human bodies and minds and its accompanying ideological frameworks, the notion doesn't seem to fit. The discourse on the automatic subject seems more about the non-humanist or non-anthropomorphic character of capital. But nevertheless: The reading of Marx presented here emphasizes that there is always already a machine-like, cybernetic structure at the heart of capitalist society. One must relate this to the accelerated evolution of technology in capitalism in the sense that the automatic subject tends to literally become a system of automatic machinery. This is an argument Christian Lotz makes explicit:

> All elements of the work process eventually become interdependent and merge into one system until today's logistics, computer systems and abstract operating models transform this system into a mathematically calculable operation and thus further 'optimize' it. This refers not only to factories, but to the entire capitalist production, i.e. to the reproduction process of society as a whole. Everything becomes a huge machine, so to speak. The workers eventually become organs of the automatic system itself. They do not simply use the machine, but become part of the machine itself. … The machine is *capital materialized*. … This symbiosis of machine/knowledge and capital as the *existing capital* then also helps to solve another famous riddle, namely Marx' speech of the 'automatic subject' in *Capital*. … In philosophical terminology, 'subject' refers to something that can *relate to itself*. 'Automatic subject' must therefore be determined in two ways: On the one hand, it is a self-reference (utilization: money becomes *more* money); on the other hand, however, this self-reference must exist in reality. The system of machinery – the *automaton* – is therefore the *form of existence* of this self-reference. (Lotz 2014b, 22–24. Emphasis in original).

Therefore, it can be argued that in capitalism people are always already embedded in a system of technological connections to optimize them, make them more effective and productive. There is – at least in capitalism – no pure human which is *then* 'transhumanized.'[13] That a discourse on transhumanism emerged is therefore not surprising at all – it is the logical consequence of a society structured around the automatic subject that becomes real as the permanently accelerating sociotechnical assemblage in which humans are only parts and organs.[14] And it is also not surprising that the culture industries of late capitalism are saturated with images of machinery ruling the world and artificial intelligences destroying mankind. Just think of the *Terminator* movies. With the accelerating development of ever smarter technologies, finally, a capitalism without people seems to be possible (see Kjøsen 2018). Given this configuration, the question emerges if and how there can be a kind of resistance to the automatic subject. Of course, one could think about the complete dismantling of capitalism, but that revolutionary perspective is not the topic of this paper. I want to underline that in parts of avantgarde art of the twentieth century the topic of capitalism's 'automatism' seems to have been registered at least indirectly (see Part 3). Given these discussions: How can we understand aesthetic strategies like *Actress/Young Paint* (and others)? Are there possibilities for a critical transhumanist aesthetics? (See Conclusion).

12 McLuhan (1994, 46): "Man becomes, as it were, the sex organs of the machine world." McLuhan doesn't relate this to value, but to the machine – which can be read as the materialization of capital. I'll return to that in a moment.

13 This fits with the anthropological argument (made by Gehlen and others) that humans cannot exist without technology in the first place, that humans are technological from the very beginning and that this technicity is what separates humans from animals. If this is the case, is there any special role for technology and automaticity in capitalism? I would argue that of course humans are always already technological. But the social formation called Capitalism produces a specific realization of this primordial technicity: Technologies, machines are materializations of the "automatic subject" and are basically put to use only to enhance and accelerate accumulation, even if this destroys the ecological and social possibilities of humans. In this sense technology is "transhumanist" - it has structurally to transgress all human boundaries if that is necessary for capital accumulation.

14 Cf. also Hesse (2016) on the relation of capital to technology.

3. Automatization, Deautomatization and Automatism in Art at the Beginning of the 20th Century

At the beginning of the twentieth century there were several parallel and seemingly unconnected developments which center around notions that are not identical, but at least similar and all are connected to 'automation' in a wider sense. Firstly, there was the notion of 'automatization' (emerging out of a discourse of rationalization) in industry, culminating in Ford's assembly line in 1913, an important part of the machine system (mentioned by Marx) in which workers become parts of the machine (via psycho-body-technologies like Taylorism). This conditioning of workers was disturbingly pictured in Charlie Chaplin's great film *Modern Times* (1936). Secondly, the Fordist and Taylorist conditioning of workers is obviously related to another field, namely the development of the notions of psychic and bodily automatisms, that took place in psychology and psychoanalysis in the late nineteenth century. The idea was basically that human mental processes are structured (at least to a certain degree) by repetitive and unconscious operations.[15] Interestingly enough, some (not all) artist movements and some art theorists drew conclusions from the increasing role that 'automatism' and 'automation' played in the early twentieth century. I will just mention two important examples:

A. Russian Formalism and especially Viktor Shklovsky, argued that the task of art is to 'defamiliarize' perception, to 'make it strange.' Shklovsky saw quotidian perception marked by automatization. "Automatization eats things, clothes, furniture, your wife, and the fear of war" (Shklovsky 2015, 162).[16] He did not explicitly refer to industrial automation – but his famous essay 'Art as Device' appeared in 1917, four years after Ford installed an assembly line for the production of cars. Nevertheless, Shklovsky sometimes refers to the car as a paradigmatic example. Ginzburg writes, quoting Shklovsky: "'We know how life is made and how Don Quixote and the car are made too.' Literary criticism as a scientific enterprise, art as a technological artifact." (Ginzburg 1996, 8). In another passage Shklovsky mentions explicitly the "automatic age" (quoted in Platnov 2016, 19) and he's quoted saying: "The machine changes man more than anything else" (quoted in Lvoff 2016, 65).[17] His argument should have been quite clear to his contemporaries, living in a world full of automatized, mechanical, industrial forms of movement and perception.[18] Art, on the other hand, should present things (or processes) anew – so that we as beholders could see them, in a way, as for the first time. Art was not supposed to change the political implications of industrial automation or the conditions at workplaces,[19] but at least it could change and refresh a petrified perception. Automatization and perceptual automatism were to be estranged by art to get a fresh look onto the world. In that sense, art had political implications:

> [Before] it became endangered, democracy was felt by Shklovsky to be an organized system of indifference based on equality through automatization and rationality. Thus Shklovsky sought in Futurism an antidote not just to the automatism of bourgeois democracy but also to the fixity of symbolic capital and power that the Revolution was after (and he was unhappy when Futurism proved incapable of providing the latter remedy). (Tihanov 2005, 681)

B. Automatisms also played a role in a very different artistic field that took place at roughly the same time as Russian Formalism, namely Surrealism. Surrealism developed (amongst others) so called strategies of

15 Cf. Dolar and Marek (2010).

16 Cf. on the background of Russian Formalism Erlich (1980).

17 Lvoff goes on, in relation to Russian Formalism: "The assembly line society privileged its new institutions over the old ones, and the patron of the arts changed: no longer a single connoisseur expecting art to edify and treat him to its subtleties but the faceless masses of workers with their urging necessity for respite from hard, dehumanizing work" (2016, 66).

18 See also Benjamin, who discussed in the 1930s, as is well known, the changes that technological forms of reproduction forced upon perception, cf. Benjamin (2008).

19 Though, Steiner (2014, 199) writes: "Viktor Šklovskij, for example, arguing against Spencer's conception of rhythm as an energy-saving mechanism, had already pointed out the difference between prosaic and poetic rhythm – between the regular rhythm of a work song, which by automatizing movements tends to save labor, and the violation of this rhythm in art for the sake of de-familiarized, difficult perception." Here some working conditions, the 'work song', enter Shklovskys discourse.

automatic writing and drawing. For example, Breton wrote a nowadays famous paper on 'the automatic message.'[20] The surrealists sought to transcend quotidian, rational consciousness by these techniques; the idea was to release unconscious impulses and energies. Surrealism's discourse on automatic strategies in art were very different from Shklovsky's approach. While Shklovsky expected art to overcome automatization, Surrealism used 'automatic strategies' – however, the surrealists did not understand 'automatization' as a set of mechanized, formulaic forms (as did Shklovsky) but on the contrary as that which, by its spontaneity, disrupted rational consciousness. But the goals were comparable – to transcend conventional, quotidian consciousness, to open up new possibilities of perception and presumably action.[21]

Very different aesthetic approaches felt the need to relate to 'automatization' or 'automatism' at the beginning of the twentieth century. I suspect that this can only be explained by the dominance of automated production and technological reproduction of media formats at the beginning of the twentieth century.[22] Of course, one may ask, if any of these approaches in a way came close to the reality of industrial automation and its economic, social, psychological and cultural impacts. Certainly, it was not artists who improved working conditions, but the workers' movement. But the least we can say is that some forms of artistic work and some theoretical reflections on the arts did not ignore the new conditions of work and production.[23] Modern art was seldom, if ever, 'autonomous' *l'art pour l'art,* but engaged in different ways with political and economic realities.[24]

Figure 3. Cover of ***Actress***' AZD.

4. Conclusion: Critical Transhumanist Aesthetics?

Given the arguments made in Part 2 that capitalism is always already 'transhumanizing' everyone by inserting everybody into the technological assemblages of the automatic subject with the goal of acceleration and valorization, and given the sketch in Part 3 that strategies to cope with the automaticity of capitalist modernity are an important part of the history of modern art, we can finally ask how the situation is today. Is there an analogue to the constellation in which Ford invented the assembly line and only a few years later Shklovsky demanded of art to deautomatize perception?

One of the most discussed technologies today is AI – mentioned by Steinhoff (2014) as one of the emerging technologies relevant for transhumanist discourse. To cut a long story short, the technologies today grouped under the name of AI are technologies of machine learning; that is, in essence, pattern recognition. These neural nets and similar approaches have to be fed with lots of data to learn to recognize certain patterns and are heavily researched because they can find patterns in big data, for example in science (see e.g. Bourilkov 2019). Machine learning is also very central for big infotech-industry companies like Google or

20 Cf. Breton (2007). See also: Bauduin (2015).

21 It is therefore no coincidence that some Surrealists (like Breton or Éluard) were at some historical point close to the Communist Party.

22 The role of the 'automatic condition' can also be seen in the already mentioned text of Benjamin on mechanical reproduction. Cf. also Krauss (1981) on the relation of photography to Surrealism.

23 The story is of course longer and more complex: There are Warhol's and Judd's very different strategies of emulating and estranging methods and aesthetics of industrial production (cf. Egenhofer 2008), but also the experiments of 'information aesthetics' (cf. Schröter 2019) and many more.

24 Cf. on the vexed relation between form and the historical place of art, amongst others, Buchloh (2015) and Jameson (2007, ix–xxi).

Facebook, who on the one hand have the data to train machine learning, and on the other hand need it to make sense (and profitability) of their masses of data (see Dyer-Witheford, Kjøsen and Steinhoff 2019, ch. 1 on the AI-industry). It is one of the most important capitalist technologies, central for profit in the data-world – and everybody is inserted in this new technological assemblage for accelerating valorization. In that sense, machine learning is the assembly line of our times. Our private lives, and even our unconscious, are analyzed, for example, by tracing our profiles on 'social media'[25] to make us more profitable – be it as workers or as consumers.

This is a first hint at how we can read *Actress/Young Paint* as a form of critical transhumanist aesthetics. The unconscious is already colonized by capital and inserted into the machineries of the automatic subject. Its automatisms can no longer be the site of resistance, as was the case in Surrealism. Cunningham mirrors himself in a machine learning system that on the one hand learns and mimics his aesthetic strategies, but on the other hand produces unforeseeable digressions. This is a kind of 'surrealism without the unconscious' (Jameson 1991, 67), but in a new and critical way. Cunningham forms with his double a new kind of transhumanist assemblage – *Actress/Young Paint* – which enhances his aesthetic self-reflection, because he can see what the system deems to be characteristic for his style and he can react to that. But this is not just happening in a studio – it is made explicit and the dialogue is performed live. In a sequence that can be found on YouTube,[26] we can see Cunningham on Stage and *Young Paint* – in a video – working in his virtual studio. Cunningham splits into two. This was already implicit in the cover of *Actress*' album AZD.

In a *détournement* of Lacan's mirror stage, the artist is split into 'himself' and a virtual double that mimics and transcends him, thereby laying bare the permanent virtual doubling of consumers in form of their virtual profile. By this, the artwork lays bare the constructed character of all transhumanist assemblages.

Moreover, the visual design of *Young Paint* cites the metallic appearance of famous icons of transhumanist cinema, namely the T-1000 from *Terminator 2* (USA 1991, James Cameron), which also contrasts with Cunningham being a person of colour. Questions of the historical emergence of capitalism – colonialism, therefore the ironic British flag on the hat of *Young Paint* (at least in some images) – are juxtaposed with ideologies of the seemingly race- and genderless world of high technology. The name *Young Paint* evokes painting and therefore (parts of) the history of (modern) art, pointing to the difficult relation of self-referential form and political and historical reference in artworks (see Buchloh 2015), as much as to the ever accelerating 'newness' ('young') in avant-garde aesthetics. Painting is the artform most closely connected to the myth of the creative, male, white genius – it is therefore an ironic move to evoke painting in an artwork that is centered around at least a partial giving up of control to automatic – 'unconscious' – machines.

This aesthetic strategy can be heard in the music on the *Young Paint* EP. It is at the same time a repetition of basic blocks of electronic dancefloor music, but also weirdly deautomatized, directing the listeners to their petrified expectations. Rhythmic structures are confronted with sudden irregular eruptions, but also get stuck in hyper-machinic endless repetition. The monotonous repetition of the automatic subject and crisis-as-irregularity are part of the formal design.[27] The sound of many tracks of *Actress* quotes analog procedures, such as badly adjusted analog noise reduction systems in a track like "Don't" from *Actress*' album *Ghettoville* [28] (which is also a typical example of the extreme repetition which is one pole of the musical repertoire of *Actress*). The archaeology of sound technology is present in the sound design and so the historical place of the digital music technology is reflexively exhibited. The permanent technological development, so typical for capitalist accumulation and acceleration, is alluded to.

25 And that's why they are rightly called 'social media' – these systems are the media of the social, transforming the social into analyzable data sets.

26 See https://www.youtube.com/watch?v=ZsZc4Q_eDk4. Accessed October 16, 2020.

27 Cf. Bockelmann (2004) who actually argues in his study on the 'beat of money' that the empty form of value is basically the reason for the emergence of beat in European music.

28 https://www.youtube.com/watch?v=4bxJY-0ut5Y, Accessed October 16, 2020.

Cunningham and *Young Paint* are co-workers in a dialogical process of creation, but further questions are implied: What if the neural net gets so good in simulating *Actress* that it can do *Actress* albums all by itself? Can one day *Young Paint* substitute *Actress* and doesn't this allude to the nervous contemporary discussions on the potential disappearance of labour? Don't their fascinating and disturbing common live performances pose the questions of the collaboration between man and machine in transhumanist assemblages?

Be that as it may: Artforms reflecting on and/or working with AI and other 'emerging technologies' and that comment on our always already transhumanist situation will appear in the future. This essay was only a preliminary sketch of how to address such phenomena.

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Xenofeminism: A Framework to Hack the Human

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ABSTRACT: Out of the gusts of creative energy following the 2013 publication of Nick Srnicek and Alex Williams' "#Accelerate: Manifesto for an Accelerationist Politics," the cyber-feminist collective, Laboria Cuboniks, published their own manifesto in 2015. Entitled "The Xenofeminist Manifesto: A Politics for Alienation," Laboria Cuboniks advocated, broadly speaking, the abolition of gender, increased technological intervention into the means of re-production, and, most controversially, an affirmation of alienation as intrinsically liberatory. Met with mostly positive responses, the Xenofeminist Manifesto spawned a series of workshops, talks, and accelerationist adjacent theorizing. That being said, residual issues of humanism and an open question about what "more alienation" actually means festered just below the surface. In response to recent articles critiquing Xenofeminism as misunderstanding Marxist-Transhumanism at best, and reifying white feminism at worst, the following article seeks to do three things. First, I aim to examine the neo-humanisms (be they trans- or post-humanism) that occupy our current era of technocapital acceleration while sketching out a critique that affirms the transhuman. Second, I attempt to trace the accelerationist lineage of Xenofeminism by looking at early Marx up to Deleuze and Guattari while noting that Xenofeminism can be read as a necessary outgrowth of accelerationism insofar as Xenofeminism seeks to deterritorialize gender as such. Third, I aim to respond to recent critiques levied against Xenofeminism that claim its affirmation of alienation is not only a naïve mis-reading of Marx, but a reification of oppression. While certainly not the last word, I hope this article spawns deeper intellectual theorizing about Xenofeminism and its implications.

KEYWORDS: Xenofeminism, Marxism, transhumanism, feminism, accelerationism

Phase 00: From the Future

The years 2013 and 2015 were turning points for what can, in lieu of a better term, be called the 'contemporary Left.' Expanding upon the works of Mark Fisher and the other 'members' of the CCRU (Cybernetic Culture Research Unit), Nick Srnicek and Alex Williams published "#Accelerate: Manifesto for an Accelerationist Politics" on *Critical Legal Thinking* in May 2013. Seen as a revival of the supposed Prometheanism latent in Marx's *Grundrisse,* "#Accelerate" attracted a cult following which led to numerous conferences around Europe, Urbanomic's publication of *#Accelerate: The Accelerationist Reader* in 2014, and Srnicek and Williams' expansion upon their initial work in 2015's *Inventing the Future: Postcapitalism and a World Without Work.*

Adjacent to this sphere – and indeed, crisscrossed with accelerationist tendencies – the pseudonymous Laboria Cuboniks collective published "The Xenofeminist Manifesto: A Politics for Alienation"

in June 2015. Spawning its own series of blog posts, critical essays, and responses, the Xenofeminist project has been, by and large, relegated to the sidelines of contemporary accelerationist discourse. Following the publication of Helen Hester's *Xenofeminism* and Victoria Margree's *Neglected or Misunderstood: The Radical Feminism of Shulamith Firestone* in 2018, interest was reignited with Verso re-publishing The Manifesto, and various feminist thinkers attacking different aspects of Xenofeminism. From attacks on its affiliation with accelerationism – a 'tainted term' that Srnicek and Williams distanced themselves from – to its questionable usage of the 'xeno-' prefix, to its supposed ignorance of 'true' Marxist legacies, the Xenofeminist project was seen as at once too broad *and* too restrictive.

It is my contention, however, that Xenofeminism, conceived of as an *intentionally broad platform,* is one of the most radical (and positive) outbursts of energy from the Left in recent memory. Melding certain strains of gender-critical transhumanist thought with accelerationist politics derived from critical readings of Marx and Deleuze and Guattari, Xenofeminism represents a reboot of the cyberfeminism of the 1990s. With one eye on existing technologies and methods of biohacking and another on speculative, future technologies of gender liberation, Xenofeminism can be seen as an update of the legacy Marxist-Feminist operating system.

Despite the liberatory potential latent in Xenofeminism's code, apart from Laboria Cuboniks' manifesto and Helen Hester's recent book, there has been insufficient engagement with the future of Xenofeminism *as such*. While numerous reviews and 'long reads' have popped up in recent years, little theoretical work has been done as the members of Laboria Cuboniks continued along their own trajectories. Indeed, apart from spats within the Accelerationist Caves on Twitter, most of the critical engagement with Xenofeminism has taken the form of multiple criticisms published in 2019.

In the following paper, I seek to elaborate on what I take to be the truly radical nature of Xenofeminism and its location at the crux of Marxism and transhumanism, while pushing back against recent critiques. More specifically, I want to explicate *what* Xenofeminism, in its broadest categorization, is and how it weaves together post-Marx/DeleuzoGuattarian Accelerationism with transhumanist ideas about technology and biohacking. To do this, I want to a) briefly look at the neo-humanisms of the technocene (be they trans- and post-human) and sketch what I will call a trans~~humanist~~ alternative, b) attempt to trace the accelerationist lineage of Xenofeminism from the early Marxist-Feminists to the cyberfeminists to the accelerationists proper, and c) respond to recent critiques and allegations of naïve techno-utopianism at best, and a reification of white-feminism, at worst. While by no means exhaustive, I hope this quasi-genealogy can serve to reopen critical and productive discussions around Xenofeminism (and future feminisms, more generally).[1]

Phase 01: One or Several Humanisms

> *Man is programmed to change his programming continuously.* Roberto Esposito (2011, 82)

> *The concept of human must be unraveled. The inhuman must be invited in until the human ceases to be, dissolved through and in the Other.* MahimikoUmbral (2020)

It is far from an understatement to say that 'transhumanism' is a troubled concept. Indeed, what ought to be straightforward – that is to say, merely *defining* the word – proves exceedingly difficult once one

1 Writing about *The Xenofeminist Manifesto* raises difficult methodological questions as it itself was written by the pseudonymous collective called 'Laboria Cuboniks.' While the collective does, technically, consist of six bodies in Meatspace, its history has been troubled. Seemingly intended to be a pseudonym to outlast the bodies, the mask of Laboria Cuboniks has slipped and revealed the 'real' authors behind the text (if there are such things). While it is no secret who the members are, I am disinclined to list them (even if I cite their Laboria Cuboniks-independent work) as "each of the six members … would likely emphasize different aspects of the manifesto, foregrounding some tendencies over others" (Hester 2018, 2). While I am required to stick to citational standards, the reader ought not take any one thing said by any given member that I cite as being the gospel of Laboria Cuboniks as such. Indeed, "an early, lightly held goal for the character of Laboria Cuboniks, too, was for it to be a mask that, in principle, anyone could take up, to speak from it rather than their own particularity" (Fraser 2020). While I have no intention of donning the mask any longer than necessary, the articulation of Xenofeminism that I advance, while textually based in the manifesto itself, ought not be reflective of anyone I choose to cite. In addition, however, I must express gratitude to two specific 'individuals.' I thank David Roden for his careful review of the first phase of this paper and Patricia Reed for humoring my questions and pointing me down new paths. I also thank my reviewer for catching my oversights. Anything positive that comes from this paper is due to their help, while the negatives reflect solely on myself.

dives into the transhumanist literature. Conflated with 'posthumanism,' deflated as 'trans-*humanism,*' 'transhumanism' refers at once to a normative position, as well as a description of various tendencies, as well as a potential ontology, as well as etc.… . For the purposes of this paper (and to irritate those already embroiled in the semantic squabbles), I will take a very specific understanding of transhumanism as a set of what can be called 'Promethean tendencies' and then attempt, by way of an acid bath of 'postmodernism,' to remove the human (and indeed, humanism) as traditionally understood to leave us with a trans~~humanism~~ to which Xenofeminism can be seen as the corrupted heir.[2] Specifically, in this first phase, I will examine transhumanism as a humanism laced with Prometheanism while then moving on to efface the human as traditionally understood. To do so, we will first look at a brief history of the relationship between humanism and transhumanism, with the latter seen as an upgrade of the former, while also noting some critiques. We will then move on to let the bottom drop out of transhumanism as we attempt to undermine the conception of humanism implicit in our discussion.

>>00: Transhumanism and Prometheanism

Following a brief review of the relevant literature, there are at least four different uses of the term 'transhumanism.' Indeed, there is a normative definition, an historico-epistemological definition, a descriptive definition, and an implicitly ontological definition. Before going further, it is important to lay our cards on the table so as not to muddy the waters too much.

Normatively, transhumanism can be understood as "an ethical claim to the effect that technological enhancement of human capabilities is a desirable aim." This normative dimension is echoed, among other places, in Nick Bostrom's "Transhumanist Declaration" (Roden 2015, 9; Bostrom 2005a, 21). *Historico-epistemologically*, transhumanism can be understood as an affirmation of "rational humanism, which emphasizes empirical science and critical reason – rather than revelation and religious authority – as ways of learning about the natural world and our place within it, and of providing a grounding for morality." It is, in a word, Enlightenment reason *par excellence* (Bostrom 2005a, 2; More 2013, 4). *Descriptively*, transhumanism can be understood as both the view that "nature [is] a work-in-progress, a half-baked beginning that we can learn to remold in desirable ways" and that "current humanity need not be the endpoint of evolution." Further, it is a "philosophy of life" that seeks "the continuation and acceleration of the evolution of intelligent life beyond its currently human form and human limitations by means of science and technology" (Bostrom 2005b, 4; More 2013, 3). *Ontologically*, transhumanism can be understood as "man remaining man, but transcending himself, by realizing new possibilities of and for his human nature" while wishing "to preserve and extend capacities and characteristics that we associate with our contemporary understanding of the word 'human'" (Huxley 2015, 15; Philbeck 2014, 175). There are, no doubt, other uses of the word.[3]

Underlying all the above uses of the word, however, is one guiding theme: a commitment to rational humanism (Bostrom 2005a, 2). Given that, a brief discussion of humanism is where we must start.

'Humanism' can, for our purposes, be understood according to David Roden's self-admittedly crude definition:

> A philosopher is a *humanist* if she believes that humans are importantly distinct from non-humans and supports this distinctiveness claim with a *philosophical anthropology*: an account of the central features of human existence and their relations to similar general aspects of *nonhuman* existence. (Roden 2015, 10-11)

Unpacking Roden's definition, we can begin to think of humanism in terms of a commitment to the distinctiveness of an entity that satisfies some list of qualities pertaining to what it means *to be* a human. 'Human' is thus both an ontological category and a series of particulars. While there are many contend-

2 Lest we leave the important unsaid, there are numerous critiques of attempts to move beyond the human as either implicitly reifying classical constructions of race (Jackson 2015) or smuggling in the liberal humanism such moves seek to avoid (Zaretsky *et al.* 2005). Unfortunately, I have neither the spatial nor theoretical bandwidth to engage sufficiently with these critiques. In lieu of a response by me (although I hope my formulation of transhumanism answers some issues), I would say that Badmington (2003) provides a launching point from which Dean (2017), among countless others, offer vital rejoinders.

3 See Fukuyama (2004), for example.

ers for what the aforementioned qualities might be, it is most logical to go back to the individual who was, arguably, located at the genesis of Enlightenment humanist thought: René Descartes.

In his *Discourse on the Method,* Descartes, in setting out to describe methodological skepticism, begins by isolating the mental faculty he sees as being a universal human quality, a quality that is "naturally equal in men." For him, "good sense" – that is to say, the ability to judge claims thereby "distinguishing the true from the false" – "is the best distributed thing in the world." Indeed, this ability to reason is not merely the thing that "distinguishes us from the beasts," but it is also "the only thing that makes us men" (Descartes 1985, 111-112). Such a conception of the human as a rational animal predated the Cartesian formulation in a myriad of different cultures but was reified and (re)made explicit in Sartrean existentialism (Brague 2017, 4-11). Despite nominally rejecting "the concept of the human," Sartre, in *Existentialism*, acts to reify something common to all entities we call human: freedom. Indeed, this 'condition,' as Arendt would later pick up (Arendt 2018), consisted of humans "turn[ing] up, appear[ing] on the scene, and, only afterwards, def[ining]" themselves. As per the existentialist credo that 'existence precedes essence,' "man is nothing else but what he makes of himself" (Sartre 1947, 17, 18). The vital point to take away is that humans are able to change themselves. While metaphysical problems arise from this view (a few of which we will briefly discuss later), we must first expand upon the mutability of the human.

In Roberto Esposito's recent analysis of Heidegger's (in)famous rejoinder to Sartre, Esposito carves a nice path for us to follow by taking the previous line of humanistic thought and coupling it with philosophies of Becoming.[4] While affirming an admittedly rather weird form of essentialism, Esposito continues and recapitulates the existentialist claim that we can make ourselves. As he puts it:

> There is no ontological constraint, fixed character, or natural invariant that binds [the human] to a specific natural modality. He is not nothing, since he can become anything, create himself again and again according to his own liking. Properly speaking, he is not even a being, but a becoming in perpetual change. (Esposito 2011, 79)

Following up on this, Esposito notes that humans are culturally bound, and any discussion of a "nature" must grapple with our relation to history.[5] It is thus evident for him that humans remake themselves in the context of their cultural milieus (Esposito 2011, 82). Further, if there is to be any essential nature to the human, it must be a level of mutability. In response to any classical claims to identify the human with a *fixed* set of characteristics, a staple of early humanist thought, transhumanism upgrades our understanding by affirming another word we must discuss: 'Prometheanism.'

First popularized in reference to supposedly anti-environmental movements that saw growth as unlimited, John Dryzek defined Prometheanism as both the ideology wherein one has "unlimited confidence in the ability of humans and their technologies to overcome any problems – including environmental problems" and the view that "matter is infinitely transformable, given enough energy." Thus, for the Dryzekian view of Prometheanism, not only is technology unlimited, but we ought not have qualms about using technology to alter our environment (Dryzek 2013, 52, 60). While a logical, macro-level extension of the Prometheanism we will be talking about, the issues Dryzek raises around geo-engineering, for example, are far beyond the scope of this paper. Instead, we will be combining this usage of the term with Ray Brassier's articulation in "Prometheanism and its Critics" where he defined the concept, simply enough, as "the claim that there is no reason to assume a predetermined limit to what we can achieve or to the ways in which we can transform ourselves and our world" (Brassier 2017, 470). Coupled with the technism of Dryzek's usage, one would think Prometheanism is a recent idea, but that is not so. Rather, although not explicitly called such, the ideal has been latent for much of human history.

4 See Esposito's book-length treatment of the subject for much greater detail (2008).

5 See also Steinhoff's (2014) analysis of the deep connections between transhumanism and Marxism.

As Bostrom, tracing his history of transhumanism, notes: "The human desire to acquire new capacities is as ancient as our species itself. We have always sought to expand the boundaries of our existence, be it socially, geographically, or mentally." From the *Epic of Gilgamesh* to efforts at fabricating an 'elixir of life' to the Renaissance Humanists, a rejection of the given – or rather, a recognition of the *contingency* of the given – marked human history. Picking up on this trend, Giovanni Pico della Mirandola sets forth the notion that God made humans so as to "not have a readymade form" (Bostrom 2005a, 1-2). Indeed, in his *Oration on the Dignity of Man,* Pico, in recounting God speaking to Adam, says the following:

> Oh Adam … The nature of all other creatures is defined and restricted within laws which We have laid down; you, by contrast, impeded by no such restrictions, may, by your own free will, to whose custody We have assigned you, trace for yourself the lineaments of your own nature. … We have made you a creature neither of heaven nor of earth, neither mortal nor immortal, in order that you may, as the free and proud shaper of your own being, fashion yourself in the form you may prefer. It will be in your power to descend to the lower, brutish forms of life; you will be able, through your own decision, to rise again to the superior orders whose life is divine. (Pico 1956, 7-8; cited in Bostrom 2005a, 2)

Indeed, such trends continued and became an integral part of rational humanism despite critiques from both the Right and the Left (Bostrom 2005a, 1-4). The critiques, however, are relevant for our discussion insofar as they introduce an important philosophical theme Brassier runs with: disequilibrium. In recapitulating the Heideggerian lineage, Brassier reiterates the fundamental assumption behind humanism: humans are, supposedly, *qualitatively* different from non-humans. This difference between humans and non-humans *must* be a difference in kind as opposed to degree. If true, this is problematic for the Promethean project. If the difference between humans and non-humans is a difference in kind – that is to say, if we possess something above and beyond the materiality of non-humans – then the techniques by which we intervene in the natural world might not work on ourselves. If we have an essence – or at the very least, something that makes us unique – we are thus "constituted by an other kind of difference," a difference that places us in a different register than the empirical (Brassier 2017, 473). As such, technological intervention into our material conditions will, at best, prove to be impossible and at worst, existentially disastrous. As Jean-Pierre Dupuy, "a disciple of [Heidegger] and Arendt" notes,

> The human condition is thus an inextricable mixture of things given and things made. This means that man, to a great extent, can shape that which shapes him, condition that which conditions him, while still respecting the fragile equilibrium between the given and the made. (Dupuy 2007, 246; cited in Brassier 2017, 474)

Such a call to respect the "fragile equilibrium" is what Brassier identifies as being "fundamental for the philosophical critique of Prometheanism" (Brassier 2017, 474). Where Dupuy *et al.* call for us to respect the given, the Promethean decries the given by claiming that it too is made.[6] While Brassier critiques specific aspects of Dupuy's argument (namely questioning Dupuy's claim that as we advance, we lose aspects of ourselves), it is more prudent for us to focus on the meta-level issues.

At this juncture, two issues arise, both of which concern the question of limits. On the one hand, we might ask ourselves, 'is there an immutable given?' Obviously, we are born into a world with a specific set of rules that we cannot choose beforehand, but does that fact imply that the rules are themselves immutable?[7] In a word, are there *a priori* constraints on what we can do? On the other hand, behind the claim that humans are rational animals lies the assumption that we can know ourselves. If reason is the primary faculty of humans and a rational investigation of the human animal is conducted, it must be conducted in the first person (hence the structure of the Cartesian *meditations*). The subject cannot

6 While outside the scope of this paper, Brassier's "Nominalism, Naturalism, and Materialism: Sellars's Critical Ontology" (2014) might be of interest to readers.

7 Should one be interested in questions about the mutability of natural laws, I'd suggest Quentin Meillassoux's *After Finitude* (2008).

have unknown depths that defy reason, as all must be accessible to it. Specifically, "the human being," in Descartes' account, "is completely known, knowable, and present to the very being that is engaged in the meditation on what it means to be human" (Badmington 2003, 17). Thus, we must ask ourselves a twofold question: 'Is it true that the self can be completely known? If not, does that pose a problem for Prometheanism?'

While of profound importance, the first issue – namely, the question of an immutable given – cannot be answered here apart from saying that under the transhumanist-Promethean view, we hear a resounding 'no.' Accepting this answer, I must defer justification to those more qualified than I.[8] We will instead operate on the assumption that the transhumanist-Promeheans are correct and there is, in fact, no *a priori* limit to what we can do. The second issue, however, must be taken up as it will lead directly into the problematization of the subject.

>>01: Fuzzy Subjects and Trans~~humanism~~

Our discussion thus far has obviously, and indeed, self-admittedly, been an extension of Enlightenment humanism conceived as the coherence of a rational and autonomous subject – or rather, *I* – as implied following the Cartesian *meditations*. While a useful historical edifice to think about transhumanism, our second issue posed above comes to the forefront. According to traditional understandings of subjectivity, the subject is not merely knowable and present to itself, as Badmington pointed out, but is also static. While perhaps lacking an essence, there is a human ontology. If, however, such a view is an antiquated notion (and indeed, I will argue that it is) and a knowable, static subject is merely an historical myth, might Prometheanism run into problems reshaping an ever-changing subject?

In this section, I want to argue that traditional forms of humanist subjectivity are flawed, and, in fact, the subject is properly thought of not as "a being, but a becoming in perpetual change" (Esposito 2011, 79). This perpetual change, I will argue, does not undermine the Promethean project so much as provides new avenues for self-creation. Thus, to problematize the concept of a static subject, we will bathe transhumanism in the most caustic of acids: 'postmodernism.'[9] Once bathed and dried off with some Derridean towels, the human, now wholly effaced, must take on a new status. As such, it seems necessary to refer to our once stable concept of 'transhumanism' as something new, a transhumanism with semantic vacancy: 'trans~~humanism~~.'

To get there, it is necessary to start with the prime problematic: the subject. Indeed, as we saw above, the initially unspoken assumption behind humanism as such is the supposed coherence of a rational subject. More specifically, this rational subject, the subject that engages in meditation, philosophizes, *thinks*, has uninhibited access to itself. It is at this juncture that we infect the classical concept of a unified, coherent subject with all the fuzziness associated with our new drug, 'postmodernism.' Specifically, while the question of 'what exactly is this "I" in "*cogito ergo sum*"?' has been raised numerous times, I want to (rather arbitrarily) start our discussion of subjectivity with Foucault's problematization of the subject via the 'author function' in "What is an Author?"[10] Indeed, if we are to believe Foucault's critique offers something useful, we ought to in turn be skeptical about the notion of a singular subject.

Foucault traces the birth of a singular, identifiable author – what he will call the 'author function' – to a very specific regime, the regime of appropriation.[11] Specifically, singular appropriation of a text to an author arose out of a regime of punishment

8 Brassier attempts to answer a critique levied by Arendt in the second half of his essay while David Roden takes us on a *tour de force* of the natural, metaphysical, transcendental, and phenomenological limits of what he calls "posthuman possibility space" (2015, 52-104) before going on to defend what he calls "speculative posthumanism" via his "disconnection thesis" (2015, 105-149). As noted, I will simply be taking the rejoinders for granted so as to focus on my part in this puzzle. For a slightly more in-depth, albeit still preliminary, discussion of human conditions vs. human nature in Arendt, see Heft (2020).

9 I place this word in single quotations so as to interrupt any flow this text might have and remind readers that this word, arguably, has no meaning and is merely used for its rhetorical potency.

10 Before being balked at for engaging in a performative contradiction for, on the one hand, denouncing the coherence of a static subject while, on the other, continuing to use proper names and personal pronouns, I recognize the contradiction and offer the following as the only justification for such action: I do it "out of habit, purely out of habit. … Also because it's nice to talk like everybody else, to say the sun rises, when everybody knows it's only a manner of speaking" (Deleuze and Guattari 2014, 3).

11 We can see a genesis of this idea in Barthes' "The Death of the Author" (1977).

where individual subjects were seen as static actors responsible for their texts. Thus, as Foucault notes, "texts, books, and discourses really began to have authors … to the extent that authors became subject to punishment, that is, to the extent that discourses could be transgressive." For Foucault, the singular author was born out of a desire to ascribe responsibility to subjects (Foucault 1998, 211-212). While a more thorough genealogy would likely trace the idea of authorship back to the rise of centralized power amongst States, for Foucault, it is enough to add that not only was the author a literal *author*ity, the name that gave credence to the truth value of what was written, but the author also served to solve apparent discrepancies within texts (Foucault 1998, 212, 215).[12]

Most importantly (at least for our purposes), however, is Foucault's point that "discourses endowed with the author function possess [a] plurality of self." In discussing a hypothetical mathematical treatise, Foucault argues that the *'I'* located within the text does not necessarily refer to a singular subject, but rather refers to a myriad of different subjects depending upon the context. Indeed, the *'I'* of "I conclude … refers to an individual without an equivalent who, in a determined place and time, completed a certain task" whereas the *'I'* of "I suppose … indicates an instance and a level of demonstration," an impersonal 'I' that could be taken up by any third party as they demonstrate the truth of the treatise. The multiplicity of the *'I'* does not stop there, however. There can always be another instantiation that serves as a justifier of the project, "one that speaks to tell the work's meaning," one who is situated within a cultural milieu and needs not say certain things (Foucault 1998, 215-216). By reverse engineering this account of the *'I,'* we can begin to see that within a supposedly singular subject – mathematician John Doe, author of *A Treatise on the function of i* – there are a multiplicity of selves that arise depending upon what *part* of the text is being read. As Foucault notes, "the author function operates so as to effect the dispersion of these … simultaneous selves" (Foucault 1998, 216).

I want to take this a step further, however. Not only does the author function disperse selves found within a text, but the implication can be extended to subjects more generally in any cultural context. As we exist in the world, we engage in a myriad of different situations that require us to don certain masks. My writing as a scholar takes a very different tone than conversations with my local bartender which, in turn, is a radically different persona than the one I adopt when discussing politics, for example. Further, with the proliferation of Internet personae, it becomes increasingly difficult to distinguish 'who' is acting. Indeed,

> when one dons a mask, does one not *truly* become someone else? Does the Shaman who dons the ceremonial mask not become a God?[13] Do churchgoers who are moved into mass not become a molar unit? Can we really say that *The Colbert Report's* Stephen Colbert is *not actually* Stephen Colbert but rather a character played by the real, essential Stephen Colbert? I think not. As we don different masks, take on different social roles, … we *really do* become those new subjectivities and they are not reducible down to a mere game a transcendent (or substantial) subject plays. (Heft 2018)

Placing all the above in contradistinction to the Cartesian subject, the subject that is at once unified and knowable, gives a new, entirely mutable conception of subjectivity that breaks with the tradition of Enlightenment humanism. Further, recapitulating Esposito, we can think of such a subject, a subject devoid of Being but full of Becoming, in terms of Derrida's 'semantic vacancy' or 'to-comeness.'

In *Rogues,* Derrida, recounting the lineage of democracy, invokes what he calls the 'semantic vacancy' within the concept. For him, democracy is always self-defining and in a constant state of self-revision. Indeed, it is something always to come, "a concept without concept" (Derrida 2005, 9, 32). To be clear, it's not that there are no democracies; rather

12 It is important to note that Foucault does adopt a weird variant of the descriptivist view of proper names when he asserts that "one cannot turn a proper name into a pure and simple reference. It has other than indicative functions … it is the equivalent of a description" (Foucault 1998, 209, 210). While Foucault also makes a distinction between proper names and authorial names, his flirting with descriptivism would (rightly) frighten any post-Kripkeans (1990). While there is likely more going on in the author function than pure descriptivism, teasing that out is another project in itself. See Mole (2016).

13 See the introduction to Joseph Campbell's *Masks of God* (1960, 21-29).

there are no *true* democracies as a true democracy is always indefinable and yet to come. It is in this sense that Derrida can say that despite our limited knowledge of this "concept without concept," we have a "precomprehension," we "already anticipate, even if only by a bit, … what 'democracy' will have been *able* to signify, what it *ought*, in truth, to have meant" (Derrida 2005, 18). Our implicit understanding of an ever-changing concept is what we can, and indeed ought, to take to our discussion of humanism. Specifically, taking such an understanding of a possibility to come and applying the Promethean tendencies we've isolated in our half-drowned 'transhumanism' lead to what Roden calls "speculative posthumanism" or the claim that "*there could be posthumans*" (Roden 2015, 5).

Devoid of normative baggage, speculative posthumanism posits that there is some alternative possible way of Being (or Becoming) (Roden 2015, 5-6).[14] Coupled with Derridean semantic vacancy and the mutability of the subject, it seems that such a posthuman can only always be "a concept without concept," a void to be filled with content that is constantly changing. As Esposito notes, there is a fundamental shift in what *humanitas* can mean. It cannot be understood in a singular, myopic sense, but rather must refer "to every [entity] and the world in its entirety" (Esposito 2011, 82).[15]

Thus, taking the conception of transhumanism as a form of Prometheanism applied to the self, we can understand our washed concept in terms of a subject that is always to come but is never here: a trans~~humanism~~. Always overcoming previous limitations (trans-), our conception of the human is never complete (-~~humanism~~) and is always being built so as to include ever more possible/potential subjectivities. *Humanism becomes an empty set.* While it might be objected that under such a scenario, a scenario wherein there is no identifiably stable subject, any Prometheanism is doomed to fail since it is working on a non-existent entity. This rejoinder, an attempt to answer the question posed above, seems foolhardy as it implies that *nothing* can be known about the subject. The effaced humanism of trans~~humanism~~ where the subject is always to come does not imply that certain aspects of the subject are unknowable, rather that there is no essential entity that can be exhausted. As will be seen in the next section where we will explore the Promethean tendencies in Marx while discussing their accelerationist heritages, Xenofeminism, with trans~~humanism~~ applied as the retroactive backdrop, retains both a commitment to a certain kind of rationalism while also affirming the inexhaustibility of the subject.

Phase 02: Xenofeminism for a Future-to-Come

> *Woman cannot exist 'like man'; neither can the machine. As soon her mimicry earns her equality, she is already something, and somewhere, other than him.* Sadie Plant (1995, 63)

> *We are the virus of the new world disorder. We are the future cunt.* VNS Matrix (1991)

'Feminism,' another word with a long history, most clearly saw its articulation in the push for women's rights in the early-to-mid 20th century. Riding the tides of the events of May 1968 and the introduction of increasingly mediated forms of technological production into everyday life, early 'cyber-feminisms' took off with Shulamith Firestone applying dialectical materialism to the workings of sexism and advocating for technological intervention into the means of biological reproduction itself, a key locus of gender(ed) inequality (Firestone 1970). "Neglected or misunderstood," Firestone's legacy was picked up, either explicitly or implicitly, in the works of later cyber-feminists such as Donna Haraway in her "Cyborg Manifesto" (1991), the Australian artist collective, VNS Matrix, in the early 1990s with their "Cyberfeminist Manifesto for the 21st Century," co-founder of the CCRU, Sadie Plant, in her seminal 1998 book, *Zeros + Ones*, and Luciana Parisi's *Abstract Sex* (2004), to name a few.

14 Given this understanding, it might not be too far off the mark to say that transhumanism as a form of Prometheanism that is self-defining *implies* speculative posthumanism. While sure to induce a hemorrhage, these 'definitions' can likely be blended with Philbeck's (2014) articulations of the distinctions between trans- and post-humanism.

15 Esposito says "every man," but it seems far more apt to explode the category so as to include a myriad of possible subjectivities.

All these works (and more) provided the ground upon which Xenofeminism was to grow. A complete genealogy of cyber-feminism (and its relation to Xenofeminism), a potentially Sisyphusian task, will not be attempted here.[16] Instead, I will take for granted many of the early works of cyber-feminism that, were it not for spatial and temporal constraints, would not be taken as such, and attempt a much humbler task in this section. Indeed, in this phase I will attempt to explain what Xenofeminism is (or, rather, *can be*) while pushing back against objections to its most contentious point: the affirmation of alienation. To do so, I will take one step back and look at what is arguably Xenofeminism's largest influence: accelerationism. Following that, I will attempt a definition of Xenofeminism while exploring it as a materialist feminism that, while highly mutable, has a few basic tenets. Concluding, I will look at recent critiques levied against Xenofeminism while ending with a re-articulation of its aspects I see as most salient today.

>>00: Marx's Machines are Accelerating

Portending the inevitable obsolesce of the human, a tendency met with fierce reactionary backlash, Marx's notes on machinery in the *Grundrisse* are particularly telling as to what he saw "not [as] an accidental moment of capital," but rather as a fundamental shift in the labour-labourer relationship. Indeed, as per Marx, the constructive forces of society – the "social brain" – is something that was/is increasingly becoming "absorbed into capital … free of charge" (Marx 2017, 55-56). Such a subsumption of labour power not only emboldens capital as an "alien power," but qualitatively changes the way humans relate to machines. Where humans were previously the primary actors of production, at least nominally guiding the process forward, machinic integration and expansion changed workers into vessels; tools our tools could use. The human became a protheses of the machine as opposed to the historical operators of labour. As Marx famously put it:

> The science which compels the inanimate limbs of the machinery, by their construction, to act purposefully, as an automaton, does not exist in the worker's consciousness, but rather acts upon him through the machine as an alien power, as the power of the machine itself. (Marx 2017, 53-54)

Never one to let the human fully go, however, Marx laced his analysis with Promethean tendencies, asserting the newfound power of the new techno-social subject. Indeed, in one of his more prescient moments, Marx noted that the use of machines doesn't merely *save labour,* rather, "with the help of machinery, human labour performs actions and creates things which without it would be absolutely impossible" (Marx 1993, 389). Furthermore, while machinery changed labour power with one hand, it, as capital as such, changed social relations with the other.

Simplifying society into a binary set of class relations, capitalism broke old bonds of fellowship under the feudal era and created a system ruled by the iron law of exchange. Monetary relations took over religious, familial, and compatriotic relations, all while acting back upon themselves to help "[revolutionize] the instruments of production, and thereby the relations of production, and with them the whole relations of society" (Marx and Engels 1964, 62-63). Operating under a system of positive feedback, revolutions in production became the norm, followed by new social relations as humans had to adapt to the machinic environment in which they were living. "All fixed, fast-frozen relations … are swept away, all new-formed ones become antiquated before they can ossify." Society, and consequently the subjects that made it up, began to change, and with their newfound power they could enact change back upon themselves (Marx and Engels 1964, 63).

It is this tendency, this breaking of social bonds, that Deleuze and Guattari pick up on and run with in *Anti-Oedipus.* Discussing what they call 'the process of deterritorialization,' they note that not only does capitalism break old bonds, but it acts as a quasi-liberatory force, freeing desire from social mores. As the feedback loop continues and social revolutions – be they macro or micro – happen at accelerating rates, capitalism pushes itself to its limit,

16 For some attempts at such a task, see Wajcman (2004), Evans (2014), Burrows and O'Sullivan (2019), >ect (2015), and Wilson (2015) among others.

a limit that it must constantly defer yet can also be exploited for revolutionary potential (Deleuze and Guattari 2009, 139-140). It is this exploitation that lies at the heart of what can crudely be called 'Left-Accelerationism.'[17] Indeed, in Deleuze and Guattari, such an expenditure of energy pushing capitalism to the limit, if not to go beyond it to further deterritorialize social flows, is what lies at the heart of their (in)famous string of questions: "what is the solution? Which is the revolutionary path? … To withdraw from the world market … Or might it be to go in the opposite direction? To go still further, that is, in the movement of the market, of decoding and deterritorialization?" For them, a true revolution of subjectivity whereby subjects can continually remake themselves must occur not by "withdraw[ing] from the process, but [by] go[ing] further, to 'accelerate the process.'" Drawing upon Nietzsche, Deleuze and Guattari insist that "in this matter, the truth is that we haven't seen anything yet" (Deleuze and Guattari 2009, 239-240). Indeed, for Nietzsche, the deterritorialization of contingent social bonds whereby a new, stronger subject can emerge "is the great process that cannot be obstructed"; rather, "one should even hasten it" (Nietzsche 1968, 478).[18]

Applying these insights to the register of revolutionary political action, Srnicek and Williams birthed "#Accelerate: Manifesto for an Accelerationist Politics" which is itself an attempt to overcome what they deride as the "folk politics" of the legacy Left – politics of "localism, direct action, and relentless horizontalism" with a fear of engaging with large-scale, global networks of power (Srnicek and Williams 2017, 354). Indeed, for Srnicek and Williams, the program (or rather, 'platform') laid out in the manifesto is one that seeks to "unleash latent productive forces" – that is to say, the aforementioned deterritorializing tendencies – in capitalism by retooling the hardware of neoliberalism and "repurpose[ing] [it] toward common ends" (Srnicek and Williams 2017, 355). Such a view, the legitimacy of which must be bracketed for the time being, implicitly embraces with it the Promethean tendencies discussed above. As contemporary network theory shows us, "technology and the social are intimately bound up with one another," and thus if one wishes to effect change on the latter, one can utilize the former (Srnicek and Williams 2017, 356).[19] Pushing this to the limit, the two thinkers advocate a renewed Prometheanism of the Left whereby 'anti-capitalist' struggles appropriate the tools of hegemonic global capital in an attempt to 'make the future.'

>>01: Xeno-genesis

In an ironic turn of phrase, Alexander Galloway, expanding upon accelerationism, laid down the term 'brometheanism' to refer both to Epimetheus and Prometheus, the two great brothers, as well as the apparent "macho techno-nihilism" latent in the Accelerationist Manifesto (Galloway 2017; Goh 2019). This turned out to be an accurate description, as gender has always been an integral part of the functioning of capitalism and yet is, more often than not, sidelined in discussions of accelerationism (Plant 1998, 107).[20] Indeed, "it was Helen Hester who noted that many of the seemingly masculinist claims in the [Accelerationist Manifesto] are rooted in unacknowledged feminist histories."[21] While Hester does attempt to bring the aforementioned histories to the fore in her 2018 book, *Xenofeminism*, – specifically the contributions of Shulamith Firestone – in this sub-section I want to look at Xenofeminism as the

17 For a brief introduction to Left-Accelerationism, see Steven Shaviro's "Introduction to Accelerationism" (2015, 1-24). It must also be noted that Left-Accelerationism is, of course, only one variant of Accelerationism as such. The two most common additional flavors – although the question of differences between all three is still very much up for debate – which will not be discussed here are Right-Accelerationism and Unconditional Accelerationism.

18 It must be noted that Deleuze and Guattari, in *A Thousand Plateaus* (the second volume of *Capitalism and Schizophrenia*), take an arguably more conservative stance and ease off the gas by not only affirming that one must "keep enough of the [existent social] organism for it to reform each dawn," but also by conceding that one ought not accelerate too quickly: "If you free [desire] with too violent an action, if you blow apart the strata without taking precautions, then instead of drawing the plane you will be killed, plunged into a black hole, or even dragged toward catastrophe" (2014, 160-161). The tension between the unconditional imperative to accelerate the process in *Anti-Oedipus* and the cautionary notes in *A Thousand Plateaus* is a tension I am seeking to work out in a larger project.

19 For a primer on contemporary network theory, see Bruno Latour's *We Have Never Been Modern* (1993).

20 See also Alexandra Chace's recent engagement with Xenofeminism (2020).

21 From a private conversation with Patricia Reed. Further citations from our conversation will be indexed by an asterisk following the quotation.

corrupted offspring of transhumanism and accelerationism with a focus on the deterritorialization of gender as such. Before continuing, however, it is time to provide a preliminary definition of Xenofeminism. To quote Hester, Xenofeminism

> can to some extent be viewed as a labour of bricolage, synthesizing cyberfeminism, posthumanism, accelerationism, neorationalism, materialist feminism, and so on. … [It] assembles, not a hybrid politics – which would suggest the prior existence of some impossible, un-hybridized state – but a politics without 'the infection of purity' … a project for which the future remains open as a site of radical recomposition. (Hester 2018, 1)

A more succinct view, and one that retains reference to Hester's articulation – indeed, one that I will forward throughout the rest of this paper – can be gleaned from the pages of the Xenofeminist Manifesto itself. While not explicitly stated as such, Xenofeminism can be thought of as the application of accelerated capitalism's deterritorializing tendencies to gender as a social construct. Being "vehemently anti-naturalist" and "gender-abolitionist," the Xenofeminist rallying cry is the spray-painted slogan, "Let a hundred sexes bloom!" (Cuboniks 2018, 15, 55).

In contradistinction to the explicit push for the rights of women as an abstract and universal group, Xenofeminism seeks to hijack the tendency for capitalism to destroy old social bonds (either via alienation or monetary abstraction) in the service of the liberation of subjectivity itself. Indeed, the question is not 'for whom is Xenofeminism?' but rather, 'for what is Xenofeminism?' Taking descriptive accelerationism – that is to say, the affirmation of the above analysis that capital continually deterritorializes subjectivities – as its starting point, Xenofeminism recognizes that subjects are not what they used to be. "Ours is a world in vertigo," Laboria Cuboniks state; "it is a world that swarms with technological mediation, interlacing our daily lives with abstraction, virtuality, and complexity" (Cuboniks 2018, 13). This world produces positively rootless beings, beings for whom alienation is not a contingent feature of variable labour relations but is rather an existential feature of the 21st century. "We are all alienated – but have we ever been otherwise?" (Cuboniks 2018, 15) A bold claim, no doubt, but a claim grounded in the queer historiographies of what Halberstam and Livingston call "posthuman bodies." For them, posthuman bodies are mutable subjects created by constantly shifting "relations of power and pleasure, virtuality and reality, sex and its consequences." The body, under the posthuman condition, is not merely a tool, but is instead "a technology" (Halberstam and Livingston 1995, 3).

Facing these constantly changing relations and integrations, Xenofeminism draws from its Promethean 'heritage' and asks us not to shy away from mediated modes of Becoming. Like the Promethean project latent in the transhumanism discussed above – a project that seeks to rework the already unstable self into a new image – Xenofeminism seeks to apply and "strategically deploy existing technologies to re-engineer [not only] the world," but also the body as such, for "nothing should be accepted as fixed, permanent, or 'given,'" least of all so-called 'unnatural' differences, too often used as the basis of exploitation (Cuboniks 2018, 17, 15). Thus, Xenofeminism was initially conceived as a rationalism: a positive application of technological mediation to human existence. Despite claims that rationalism is a patriarchal enterprise, an enterprise dominated by male minds, Laboria Cuboniks note that this is only a contingent fact of the world. For them, "there is no 'feminine' rationality, nor is there a 'masculine' one," as to affirm such dichotomies would be to reify gender essentialism. "Science is not an expression but a suspension of gender," they say (Cuboniks 2018, 21). Despite profoundly gendered technologies (and indeed, gendered questions of epistemology as they relate to technology),[22] Sadie Plant's account of women's role in early computing is exceptional and ought to be read in tandem with Xenofeminism's affirmation of rationalism (Plant 1998).

Furthermore, and in line with our discussions above, Xenofeminism rejects localized identity politics as being both too utopian inasmuch as attempts

22 See for example Wendy Faulkner's "The Technology Question in Feminism: A View from Feminist Technology Studies" (2001).

"to secede from or disavow capitalist machinery will not make it disappear," and fundamentally privileged as the notions of "slow[ing] down and scal[ing] back" are themselves "available only to the few," namely the bourgeoisie in the Global North (Cuboniks 2018, 43). Instead, Xenofeminism calls for us to embrace the complexity of variable subjectivities by engaging not in reactionary attempts to apply the brakes, but rather by using a universal (although not totalizing) openness of and to the tendency to technologically tinker with all that was once held 'sacred': to change nature itself. For "to say that nothing is sacred, that is nothing is transcendent or protected from the will to know, to tinker and to hack, is to say that nothing is supernatural"; a materialism in the most Marxian sense of the word (Cuboniks 2018, 31, 59, 65; Marx 1986, 25-28; Steinhoff 2014). The most concrete, and yet vitally important mechanism for the survival of marginalized groups under disparate regimes of gender, is bio-hacking, generally speaking. For Laboria Cuboniks, "the distribution of hormones … is of paramount import" as it allows for bodies to experiment on themselves, become who they want, and wrestle "control of the hormonal economy away from 'gatekeeping' institutions" (Cuboniks 2018, 81). Indeed, such calls to bio-hack and to, as Hester notes, embody "a tradition of radical amateurism," realign with Halberstam and Livingston's articulation of the posthuman body (Hester 2018, 89).

Adding to critiques of humanism levied above, we can look at Halberstam and Livingston and see that "the human has been configured as a tribal circle gathered around the fire amid the looming darkness of a dangerous [– that is to say, subjectively unstable –] world": an exclusive group that fears difference while fetishizing sameness. Such a concept, a concept that is increasingly becoming outmoded, gives way to the posthuman (what I call the trans~~human~~, above); the subject that "participates in re-distributions of difference and identity" by playing multiple parts at the same time (Halberstam and Livingston 1995, 10). As opposed to the homogenizing logic of the human – a logic that "functions to domesticate and hierarchize difference" – the bio-hacked posthuman is a disruption of this static order that rejects naturalism and not only embraces its alienation, but affirms it (Halberstam and Livingston 1995, 10). As Laboria Cuboniks provocatively state, "the construction of freedom involves not less but more alienation" (Cuboniks 2018, 15).

>>02: Affirming the Alien

Two recent interventions into the discourse surrounding Xenofeminism, Annie Goh's "Appropriating the Alien: A Critique of Xenofeminism" and Jules Joanne Gleeson's "Breakthroughs & Bait: On Xenofeminism and Alienation," created ripples amongst the Fall 2019 Twittersphere spawning several back-and-forths. While it is not my intention to reply to all the criticisms raised in Goh and Gleeson's articles – indeed, Gleeson attempts to reply to and expand upon Goh in her own way, and Matt Colquhoun has responded in numerous blog posts (2019a, b, and c) – the underlying theme of *alien*ation runs through both pieces as a point of contention.

Discussed above, the affirmation of alienation is a relatively crucial part of the Manifesto. Indeed, it is arguably the point that "raised the most negative responses to the text" while also "not [being] adequately theorised" within the manifesto itself.* Despite Lucca Fraser saying that "there was something a little beligerent [sic] in using the term," adding that it "is needlessly confusing" with "its contrarian sheen" tempting (or rather, taunting) Laboria Cuboniks to include it, I think there's more to it than that (Fraser 2020). Thus, what I want to do is look at Goh and Gleeson's critiques of Xenofeminism as a politics for alienation and ultimately reaffirm not only the positivity of *a certain kind* of alienation, but conclude that alienation is part of the trans~~humanist~~ lineage.

Before continuing, however, it is important that we clarify what we're talking about when we discuss alienation. Indeed, the concept of alienation in Marxism proper is a contentious subject, with Marx himself seemingly shifting his views as his writing evolved. Despite the changes in articulation from his "Comments on James Mill" up to *Capital*, an underlying thread of authenticity remains within the concept. While a broader discussion of commodity fetishism is interesting, it is not what will be attended

to here. Instead, we will briefly recapitulate the moves Marx makes in "Comments on James Mill" and "The Economic and Philosophical Manuscripts of 1844" to elucidate what we do – and subsequently, do not – mean by alienation in the context of Xenofeminism.

For Marx, the first and clearest understanding of alienation comes when discussing our relationship to others as mediated by production. Taking Hegel's understanding of the master-slave dialectic and applying it to labour, Marx argues that production motivated by selfish means (and with the added 'benefit' of surplus) changes the 'natural' relation to our products from one where we find ourselves authentically represented within our work (*à la* Hegel), to one where we become objectified by our labour as it holds power over us via the satisfaction of a need (Marx 1986, 32). Further, as one produces more than one needs, one's "*surplus* production is cunningly *calculated* for [one's] need" so that the relationship between individuals becomes materially mediated. Indeed, our "essential nature," a nature wherein we are related to our work as an expression of ourselves and related to each other as purely social beings, becomes twisted into "the *value* of our mutual objects"; we become "estranged" from each other by a third party: capital (Marx 1986, 32-34). When one's work ceases to be the site where the subject finds themselves, it becomes instead both a mode of interaction between people and a mere "*means* of life" (Marx 1986, 35). What's more, for Marx, labour that is not tied to self-actualization and is instead tied to mere survival reverses the relationship between worker and worked matter such that the worker becomes a commodity in and of themselves;[23] a means to actualize the finished product of their labour (Marx 1986, 37).[24]

What is of vital importance for us is the implicit contrast between an internal and external existence. To tease out this distinction, it is necessary to quote Marx at length:

> The worker puts his life into the object; but now his life no longer belongs to him but to the object. Hence, the greater the activity, the more the worker lacks objects. Whatever the product of his labour is, he is not. Therefore the greater this product, the less is he himself. The *alienation* of the worker in his product means not only that his labour becomes an object, an *external* existence, but that it exists *outside him,* independently, as something alien to him, and that it becomes a power on its own confronting him. (Marx 1986, 37-38)

The last sentence alone provides us with everything we need to continue.[25] Pre-alienation, if such a state can be talked about, a labourer put "his life into the object [of his construction]" and was defined by such a relationship (Marx 1986, 37). The relationship of labourer to laboured matter was a way for the slave (in Hegel) to transcendentally overcome their master by receding inward and defining themselves solely in relation *to themselves.* The alienated labour of the worker created by scarcity and competition, however, is the labour that turns the worker into an object with an existence that "exists *outside him*" and "as something alien." The labourer no longer has a stable, self-defined essence, rather their essence is materially created by the conditions of their labour.[26] Thus, what is being bemoaned in the transition from the former to the latter – internal, 'authentic' existence to external, 'inauthentic' existence – is what Marx is naming alienation, and this is what we will be

23 For the sake of thoroughness, it ought to be noted that this view of worker as commodity is a view that shifts in Marx's thought. As he continued to theorize capital, the worker ceased to be a commodity *as such*, with labour-power taking its place. Indeed, in *Capital*, commodities are explicitly defined as "external object[s]" and thus the worker themselves ceases to be a commodity (Marx 1990, 125). While not terribly significant for the overall vector of the argument in this paper, noting the above is important. I thank my reviewer for pointing out my oversight.

24 To add: Arendt thoroughly problematizes Marx's conceptions of labour and work in *The Human Condition* (2018). Such a discussion, however, is beyond the scope of this paper.

25 Marx later provides a more poetic explanation (to which Lyotard (2017) responds) and reification of 'human nature' when he says, "What, then, constitutes the alienation of labour? First, the fact that labour is *external* to the worker, i.e., it does not belong to his intrinsic nature; that in his work, therefore, he does not affirm himself but denies himself, does not feel content but unhappy, does not develop freely his physical and mental energy but mortifies his body and ruins his mind. The worker therefore only feels himself outside his work, and in his work feels outside himself. He feels at home when he is not working, and when he is working he does not feel at home. His labour is therefore not voluntary, but coerced; it is *forced labour.* It is therefore not the satisfaction of a need; it is merely a *means* to satisfy needs external to it" (Marx 1986, 39).

26 Similar understandings of self-creation via alienation (alternatively: estrangement) can be garnered from the early Russian Formalists and, later, Brecht's critique of Aristotelian Dramatic Theatre (Shklovsky 1991; Brecht 1964). I thank Jessica Harvey for unknowingly putting me on this track.

looking at.[27] While it may be true, as Steinhoff notes, that Marx does not have a rigid conception of a human essence – rather, "we actually produce ourselves in other objects" such that they "constitute a world in which we see ourselves everywhere" – and, indeed, our existence is determined by our material conditions, I want to continue to pull the thread between labourer and labour (Steinhoff 2014). For Marx, a *specific mode* of production is nevertheless preferable insofar as we regain a level of *authentic social existence* whereby we relate to one another 'naturally,' and not under a commodity relationship (Marx 1986, 33-34). The inauthentic, commodified existential relationship is what young Marx seems to be deriding as 'alienation.' Ultimately, my contention following Marx's thinking, rejects the claim that a commodified existence (an alienated existence, an existence of "estrangement" where the worker no longer finds themselves within their labour) is intrinsically bad or somehow 'inauthentic.' Indeed, if we are to buy the accelerationist thesis, such an estrangement is a particularly unique way of escaping existent material and historical social relations by allowing us to redefine them from the outside.

It is this articulation (or rather, her *ignore*-ance of it) that Gleeson finds problematic. Indeed, for her, alienation is *not* a disruption or destruction of one's essence – such a reading has no place in her critique. For her, "alienation is not an indication of a life drained of authenticity," but rather is solely "a relational feature of *class domination*" (Gleeson 2019). While class domination is surely an aspect of alienation – indeed, one only needs to look to Marx's other articulations of alienation in "The Economic and Philosophical Manuscripts of 1844" – that is *not* the kind of alienation Xenofeminism seeks to affirm. Such a form of alienation, one based on "*class domination*," is exactly what Xenofeminism seeks to abolish. Indeed, Laboria Cuboniks note that "every emancipatory abolitionism must incline towards the horizon of class abolitionism" (Cuboniks 2018, 55).

Thus, while Gleeson notes that "the 'pro-alienation' position of the Xenofeminists can only be made sense of as a contribution to discussion of technology," she simultaneously notes that such a view is both "deficient" and "baffling for those schooled primarily in Marxism." Providing no rejoinder to alienation "counterposed to *authenticity*" (apart from saying, 'that's not what alienation is'), Gleeson's critique misses the boat entirely (Gleeson 2019). To ignore alienation as an opposition to essentialism (that is to say, an affirmation of an authentic human subject) – the alienation Laboria Cuboniks speaks of and what Marx thoroughly theorized in his early writings – and rewrite Xenofeminism as an affirmation of alienation as a tool of class domination is a fundamental misreading. Gleeson needn't be taken further.

Goh's critiques are more of a force to be reckoned with as she correctly isolates something that could be very problematic in Xenofeminism: it's apparent attempt to speak for everyone. Indeed, Laboria Cuboniks tacitly admit as much when they name "reason as an engine of feminist emancipation, and [declare] the right of everyone to speak as no one in particular" (Cuboniks 2018, 21). While not intrinsically a claim that Xenofeminism speaks for everyone, too often the attempt to speak "as no one in particular," to take the view from nowhere, manifests itself as a reification of the status quo. As Goh aptly points out, "it is hard to imagine how [such a view] radically departs from Eurocentricism [sic] when there is little effort to divest the overburdened term 'universalism' of its whiteness" (Goh 2019). Goh's concern does not go unheeded. For Hester however, Xenofeminism ought to borrow from Haraway, adopting the terminology of 'kin' as opposed to 'family' in its charge against a reproduction of the same. Ever so slightly at odds with the universalism advocated in the manifesto, Hester advocates for a form of hospitality that allows for "the creation of the ideological and material infrastructures required to synthesize new desires" (Hester 2018, 64). This opening of possibilities and explicit rejection of the given, while itself a universal claim, is a claim made in the service of what she calls "counter-social reproduction": "*social reproduction against the reproduction of the*

27 See also Patricia Reed's understanding of alienation as a force opposed to the familiar (2017).

social as it stands" (Hester 2018, 64). While the view from nowhere implied in the manifesto *does* have with it the baggage Goh notes, it needn't carry such baggage any further, as the affirmation of the Other as a social being in and of themselves, and further critical race theoretical interventions into feminist theory that Goh cites can likely mitigate, if not excise, the whiteness she isolates.

Further, and linked to the above, Goh is concerned about the usage of "we" in the manifesto. For her, this "we" implies a "shared subject position – which infers that 'we' are somehow all equally alienated – [that] creates particular difficulties when attached to the accelerationist injunction to go for *more* not less alienation" (Goh 2019). Pushing back against this, however, while the "we" of Xenofeminism does imply a certain shared subject position – namely, the subject position of being Other by virtue of being a woman,[28] something explicated by de Beauvoir and recapitulated by Plant, among many others (de Beauvoir 1974; Plant 1998, 35) – it does *not* imply uniformity. Indeed, Plant's account is likely the most helpful here. The "we" that is shared is the "we" that is excluded by patriarchal rule: it is the woman as lack, or rather, the lack of a universal "*The*," as Plant quotes Lacan. Such Others, 'not-x,' are what is being talked about when the "we" is invoked (Plant 1995; Plant 1998, 35; Ireland 2017). This does not, however, imply a uniformity of experience. As Laboria Cuboniks make clear at the start of the manifesto, Xenofeminism is a feminism that seeks to address the needs "of every human, cutting across race, ability, economic standing, and geographical position." While not providing a laundry list of groups for whom Xenofeminism is for (as such a task would necessarily be exclusionary), Laboria Cuboniks instead affirms an 'opt-in' model where those who identify with the "futureless repetition" they cite can jump on board. The "we" of Xenofeminism is intentionally expansive so as to *not* homogenize difference and imply uniformity (Cuboniks 2018, 13).

That being said, if there is homogenization occurring within the manifesto, it is because it was written for 21st century human-like-entities. As Deleuze and Guattari, drawing upon Marx, note, capital is a world-wide phenomenon:

> Today we can depict an enormous, so-called stateless monetary mass that circulates through foreign exchange and across borders, eluding control by the States, forming a multinational ecumenical organization, constituting a de facto supranational power untouched by governmental decisions. (Deleuze and Guattari 2014, 453)

Given that, there are things common to all human-like-entities living under industrial capitalism: they can become alienated or bound in relentless cycles of repetition. The universalism of Xenofeminism is thus *a claim to the world as it is*. Furthermore, Goh launches another two-pronged attack when she argues not only that "the 'xeno' of xenofeminism uses alienness univocally," but Xenofeminism as such fails to provide a "convincing account of difference" (Goh 2019). I will take these two criticisms in stride. It must be noted that the prefix 'xeno-' has a plurality of meanings, all of which are at play in our understanding of Xenofeminism. Indeed, as Rebekah Sheldon notes, not only does 'xeno-' mean 'alien,' but it has particular biological and scientific meanings as well – grafts and vectors, for example. "XENO is trans": it is not merely 'alien' or 'foreign' or 'other,' but it "names the movement between the moving entity" such that, similar to Derrida's semantic vacancy discussed above, its meaning is always shifting as it is applied in different contexts – 'xeno-' acts as "the eruption of another meaning" (Sheldon 2017). It thus makes no sense to speak of 'xeno-' in the abstract, as it is always attached to something; a lived being, an entity, a *becoming*. Xenofeminism is thus an intrinsically transitory feminism, applied differentially depending upon who takes up the call for alienation.

What's more, when Goh claims that Xenofeminism fails to provide a sufficient "account of difference," she, on the one hand, expects too much from a manifesto while, on the other, tacitly implies that a non-exclusionary "account of difference" can,

28 It is important to note that the status of trans* women and/or 'feminine' identifying people is incredibly problematic and is still hotly debated. I do not feel that it is fair for me to comment apart from affirming my own personal commitment to individual freedom of Becoming and desire to never exclude trans* people from any feminist politics.

in fact, be provided (Goh 2019).[29] Xenofeminism, however, was never meant to delineate difference; rather it "is a platform," an *intentionally broad and inclusive platform* "to construct a new language for sexual politics." As Laboria Cuboniks very poignantly say: "Xenofeminism indexes the desire to construct an alien future with a triumphant X on a mobile map. This X does not mark a destination [but rather] the formation of a new logic" (Cuboniks 2018, 91-93).

Thus, we return to the quintessential question: what does Xenofeminism mean when it posits that "alienation is the labour of freedom's construction" (Cuboniks 2018, 15)? Taking alienation as the externalization of existence brought about by, among other things, changing material relations, and as opposed to a transcendent and internally consistent human nature, affirming alienation is, put simply, *affirming the uprooting of the self*. Opposed to the affirmation of an authentic, intrinsic nature to the human, Xenofeminism, as the corrupted heir to trans~~humanism~~, rejects such a notion not only as antiquated, but harmful. Indeed, we can apply the above discussion of deterritorialization to our understanding of the subject as such. If, as per the initial Marxian formulation, labour under a capitalist system necessarily estranges one from their authentic self, we can say the following: 'good, for any dream of an authentic self is itself a reification of purity politics.' As Plant and Land ask, "to what could we wish to return?" (Plant and Land 2017, 306). The notion of an authentic self, abstracted from all its material relations – pure Being – is another myth of an essential subjectivity from which we have fallen. Breaking with this, Xenofeminism asserts that "nothing should be accepted as fixed, permanent, or 'given'" as such conceptions rely upon an immutable "natural order," that only serves to re-legitimize certain subjectivities while de-legitimizing others (Cuboniks 2018, 15).

As anti-ontological, Xenofeminism follows Haraway's lead by not only asserting a preference for the cyborg over the goddess, but also by doing away with "puritanical politics of shame." "We want neither clean hands nor beautiful souls, neither virtue nor terror. We want superior forms of corruption" (Cuboniks 2018, 27). And why not? "Being died in the führer-bunker, and purity belongs entirely to the cops" (Plant and Land 2017, 306). Critical of nature, a concept in whose name so many have been oppressed, estrangement from an authentic self is the next move. By becoming so materialist that even the historical materialists can't stand it, Xenofeminism makes room for new assemblages of Becoming between a myriad of different material conditions. Affirming not only the *contingency and variability* of lived experiences, but of *life as such*, Xenofeminism encourages Becoming in the transhumanist sense: a rejection of stability and staticity in the name of experimentation.

29 While Deleuze's account of difference in *Difference and Repetition* (1994) may be able to provide such a non-exclusionary account of difference as such, the discussion is arguably too abstract for a pragmatic feminist platform and instead operates on a metaphysical register.

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Left Accelerationism, Transhumanism and the Dialectic: Three Manifestos

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ABSTRACT: Left accelerationism and the transhuman subject who embodies this movement's political potential have multivalent relations to Marxism. Whilst recent interventions such as Srnicek and Williams' *#Accelerate: Manifesto for an Accelerationist Politics* and Bastani's *Fully Automated Luxury Communism (FALC)* situate themselves within the Marxist tradition (typically relying heavily on the "fragment on machines" section of the *Grundrisse*), immediately apparent is a problem of both politics and epistemology. In positing a transhuman subject that resolves ontologically the antagonism between labour and capital, left accelerationism flattens and dehistoricizes the specific and contingent historical and material conditions that make possible the thinking of this subject at all, and lapses from a properly dialectical mode of thought in its breathless rush to adumbrate the "inevitable" conditions for this subject's emergence. Here, we are close to Althusser's notion of history as a "process without a subject" (Althusser 1969), and a similar lack of dialectical rigour can be discerned. E.P Thompson's polemic against Althusser reminds us of what is at stake in a Marxism that is fundamentally antagonistic to a thorough engagement with – and immersion in – history, specifically history as lived and made by real human subjects, and we can likewise trace in left accelerationism's idealised transhuman a subject for whom history offers no socially embedded place, only an abstract theoretical subject-position. In short, despite the inventiveness and optimistic constructivism evident in Bastani and Srnicek and Williams' manifestos, these very qualities speak to the lack of a properly and consistently dialectical epistemic framework: they thus implicitly reject what Jameson describes as "the austere dialectical imperative" necessary to think capitalism as "progress and catastrophe all together" (Jameson 2000, 226). Drawing on Noys, Brassier, Wood, Thompson and Jameson, this paper will critique left accelerationism's consistent divergence from a materialist dialectic, and show how these lapses elide the contingent and always in-process nature of the political struggles that determine who the subject/s of any future historical period will be or can be. Left accelerationism contains seeds of radical political potential, however the lapses into idealism and techno-utopianism to which it is so prone result precisely from an abandonment of dialectical materialism in the very instances where a generic transhuman subject is articulated: in conceiving class relations thus, an inattention to "the hard lesson of some more genuinely dialectical way to think historical development and change" (Jameson 2000, 225) is revealed. The paper will contrast Srnicek and Williams and Bastani's manifestos with the X*enofeminist Manifesto*, arguing that this latter offers a more promising basis for an emancipatory class politics precisely because it demands serious and sustained engagement with the forces and relations of production at the level of their bounded and contingent historical specificity. It is only by resisting the abandonment of the dialectic in order to imagine the future that we might seriously arrive at a useful picture of our destination.

KEYWORDS: Left accelerationism, Transhumanism, Marxism, labour, subjectivity, Xenofeminism, ontology.

> *In the kitchen he fished in his various pockets for a dime, and, with it, started up the coffeepot. Sniffing the – to him – very unusual smell, he again consulted his watch, saw that fifteen minutes had passed; he therefore vigorously strode to the apt door, turned the knob and pulled on the release bolt. The door refused to open. It said, "Five cents, please." He searched his pockets. No more coins; nothing. "I'll pay you tomorrow," he told the door. Again he tried the knob. Again it remained locked tight. "What I pay you," he informed it, "is in the nature of a gratuity; I don't have to pay you." "I think otherwise," the door said. "Look in the purchase contract you signed when you bought this conapt." In his desk drawer he found the contract; since signing it he had found it necessary to refer to the document many times. Sure enough; payment to his door for opening and shutting constituted a mandatory fee. Not a tip. "You discover I'm right," the door said. It sounded smug. From the drawer beside the sink Joe Chip got a stainless steel knife; with it he began systematically to unscrew the bolt assembly of his apt's money-gulping door. "I'll sue you," the door said as the first screw fell out. Joe Chip said, "I've never been sued by a door. But I guess I can live through it."*
>
> Philip K Dick, *Ubik.*

Transhuman Futures? Kurzweil and Marx

At the turn of the millennium, transhumanist theorist Ray Kurzweil described a utopian experience of future consumerism in his foreword to *The Eternal E-Customer: How Emotionally Intelligent Interfaces Can Create Long-Lasting Customer Relationships.* Kurzweil (2000a, xi) predicted that within ten years:

> going to a website will mean entering a virtual reality environment … where we can directly interact with products and people, both real and simulated. Although the simulated people will not be up to human standards … they will be quite satisfactory as sales agents, reservation clerks and research assistants.

Although not all elements of this claim have been borne out 20 years later, the "simulated people" Kurzweil claimed would replace real humans and their labour have certainly appeared. On many websites, common consumer questions are answered by chatbots, who are also able to accurately "store the customer's purchasing history" (Finextra 2019). More importantly, bots provide "customer service that is available 24 hours a day, seven days a week" (Finextra 2019). These labour-saving algorithms are anodyne compared to Kurzweil's more radical predictions, however:

> Intelligent nanorobots will be deeply integrated in our bodies, our brains, and our environment, overcoming pollution and poverty, providing vastly extended longevity, full-immersion virtual reality incorporating all of the senses (like *The Matrix*), "experience beaming" (like "Being John Malkovich"), and vastly enhanced human intelligence (Kurzweil 2005).

The contrast between such utopian futurism and the prosaic, individually-tailored consumption prophesied in the initial passage reveals contradictions and elisions in the project of theorising the transhuman. Despite the breathless claims of accelerationists like Kurzweil, the emancipatory potential of transhumanity – the unleashing of utopian possibilities via the merging of human and machine – remains largely unrealised bar the avant-garde experiments of a privileged few.

Kurzweil would not identify as an accelerationist, however despite distinct theoretical lineages accelerationism and transhumanism have many points of conceptual overlap. Both are ahistorical and tend towards determinism, and both position an ideal subject – implicitly or explicitly transhuman – that emerges once certain technological thresholds are crossed. As Moishe Postone notes, however,

> any theory that posits an immanent logic to history … without grounding this logic in a determinate process of social constitution … *projects as the history of humanity the qualities specific to capitalism*. (Postone 1993, 306, italics mine).

Just as accelerationism positions a collective subject who emerges once enough fetters are removed from the forces of production, so Kurzweil imagines the inevitable becoming of the transhuman at a (near) future juncture. Following Hegel, we find a "negative

unity tying … together … the simple point empty of content" (Hegel 2010, 462), and these apparently distinct theoretical forms are filled with content that elides the potentiality of agential human labour to transform what it means to be human. For both accelerationism and transhumanism, a non-dialectical process of subjective transformation is posited, either by a "'fetters' view of history" that has "the effect of suggesting capitalist social relations impose themselves upon an otherwise natural socialism expressed in the forces of production" (Cruddas and Pitts 2020, 4), or by an inevitable techno-embodiment which functions as a techno-utopian 'TINA'.[1] There is perhaps less genuine promise of emancipatory transhumanism in 2021 than there was for the merging of human and machine celebrated by the futurists or early-internet cyber-punks, however.

In our current conditions, such a merging is more likely to lead to the vanguard of alienation than a reciprocal integrated enhancement: Benjamin Noys describes how this integration "reshapes the proletariat from subject of history into disappearing vector of acceleration" (Noys 2014, 58). Noys (2014, 59) further problematizes a Kurzweilian integration in pointing out that "the merging of humans and computers in a new technological synthesis" results not from a voluntarism whereby humans go beyond our bodily or cognitive limits but rather a failure of human agency. Indeed, within Kurzweil's utopian accelerationist epistemology, we find a flat and static submission to determinist and abstract necessities that elude human control, or perhaps even conception. There exists no dialectical process via which the transhuman might emerge, and we as human subjects are not partners in the dance of transhuman becoming. Rather than the dialectical materialist insight that "only what has become can be retrospectively considered essential" (Brassier 2019, 102), we find the essential projected into an "inevitable" future that will reshape our selves and our social conditions, with little scope for human reciprocity.

Marx would likely agree with Kurzweil's (2005) declaration that "some observers define humans based on our limitations. I prefer to define us as the species that seeks – and succeeds – in going beyond our limitations"; recall the famous passage in the Manifesto where he marvels at how a capitalist mode of production has meant "wonders far surpassing Egyptian pyramids, Roman aqueducts and Gothic cathedrals" (Marx and Engels 2015, 6). Humans tendentially exceed what we conceive of as our current limits, and this accelerationist drive is arguably ontologically-constitutive for us as species-beings, although it does not necessarily lead to a more enlightened or rational society. Whatever Kurzweil understands as our limitations, these *are* eminently transcendable, as Marx notes in his discussion of the progression from a feudal to a capitalist mode of production:

> Limits became barriers only after the forces of production and the relations of intercourse had developed sufficiently to enable capital as such to emerge as the dominant principle of production. The limits which it tore down were barriers to its motion, development and realization (Marx 2013, 650).

It is important to remember, however, that in turning limits into barriers and then tearing these down, Marx is not positing any kind of technological determinism. Rather, he highlights the fundamental shift in social relations necessary for capital to emerge from and structure such relations. Brassier is again useful to bolster Marx's thinking here. He notes that "a genus-being must harbour a transcendent potential" (Brassier 2019, 100): the very stuff of our subjectivity contains the germ of overcoming what *is*. However, there exist radically different understandings of the *process* of going beyond, or transcending, our limitations. Witness the contrast between Kurzweil's faith in human subjectivity being (deterministically) remade by technologies that may overtake humans' capacity to control them, and Marx's dialectical understanding of collective emancipation *from* the exploitation inherent in capitalist social relations as made *possible* by capital *as* a social relation.

Not all limitations are created equal, and throughout history antagonism between classes has functioned as motor. Class struggle's "terrain is

1 Theorising the posthuman, which materially becomes after a transitional period of transhumanity, explicitly involves "disengaging … from critique defined as negativity" (Braidotti 2013, 35).

the social organisation of production which creates the material conditions of existence itself" (Wood 2016, 108). However more subtle class antagonism may appear in an era where "the core of capitalist production … is not the production of commodities but of their cultural-informational content – standards, norms, tastes" (Puar *et al*. 2012, 175), human limitations, including barriers of access to technologies of personal transformation, remain profoundly and structurally asymmetrical in their distribution. This reinforces the necessity of "debate on the Left … between accepting 'existing resources' as a challenge to struggle and submitting to them as a limit upon it" (Wood 2016, 107). In light of this insight, we can see how even explicitly progressive variants of accelerationism can fall into the error that structures Kurzweil's project of theorising transhuman becoming. Submission to our "existing resources," even and especially via Deleuze and Guattari's (2019, 162) oft-quoted prescription "to go further, to accelerate the process," means that left accelerationism abstains from turning limits into barriers, and therefore affirms that "the relation between class and the relations of production is fixed" (Wood 2016, 100). In *The Persistence of the Negative,* Noys (2010, 7) presciently highlighted the problem of subjectivity in accelerationist discourse, wherein "a figure of revolution or revolt traced along existing tendencies of capitalism" becomes "increasingly detached from any actual social or political agency." To achieve emancipation from capitalism via accelerating our existing resources leaves capital itself – and crucially, capital as an exploitative social relation – as the horizon of our struggle.

In the *Economic and Philosophic Manuscripts*, Marx (1963, 157) wrote that "as society produces man as man, so it is produced by him." This impeccably materialist logic allows for a dialectical interplay between real human subjects in their specific historical conditions and the structures and technologies that they shape as these in turn shape them. By contrast, Kurzweil's "human standard" sales agents, reservation clerks and research assistants fall out of the materialist realm as an epistemic and political divide sunders "the consumer" from former wage labourers replaced by simulations.[2] These labourers appear not as enhanced transhumans but as expendable and disposable. Indeed, their potential transhumanity arises only in a negation of their use value for capital: to remain viable in the hypercompetitive labour markets of the near future, many generic skill-sets necessitate techno-embodiment. The progression from "*external* computers that help us conduct our business and access information, to the next level where computers gradually become *part of us"* (Grossman 2001) echoes the movement of neoliberal human capital from a "working self to a self as work" (Hearn 2012, 27). Transhuman subjectivation is inherently a project of transcending human limitations; however in accelerating past such limitations it is easy to lose our critical footing, as well as any potential for a socially embedded – let alone empowered or emancipated – subjectivity. Kurzweil (2001) notes that relinquishing technological advancement would be "economic suicide for individuals, companies and nations," although it is difficult to imagine equitable access to technological advancements, let alone the technologies for volitional transhuman transformation, amongst surplus labourers within 21st century neoliberal capitalism. How then might this surplus population avoid "economic suicide"? They may be capable of making appropriate investments in themselves as competitive human capitals who "decide on their education, training, medical care, and other additions to knowledge and health by weighing the benefits and costs" (Becker 1996, 145), but enhancing one's individual personhood in order to remain economically competitive sees the utopian promise of transhumanity run aground on the reef of capitalist social relations.

Transhuman Futures? Left Accelerationism

Left accelerationism attempts to address the political problem that Kurzweil evades – or at best abstracts – with his claim that "exponential progress in com-

2 We should note here that labourers are also consumers: as Marx describes, "the continuous existence of the labouring class is necessary for the capitalist class, and this requires the individual consumption of the labourer" (Marx 1913, 85). Capitalists are obviously individual consumers as well: "the accumulation of wealth, does not exclude an increasing consumption on the part of the capitalist … on the contrary, it promotes such an increasing consumption" (Marx 1913, 78).

putation and communications technology is greatly empowering the individual" (Kurzweil 2000b). Under the social divisions of neoliberal capitalism, of course, the technological advances about which Kurzweil waxes lyrical commence from and return to a grounding in exploitation, just as in the circulation of capital "every element appears as a point of departure, transit and return to the starting point" (Marx 1913, 114). Quotidian human being is tendentially precarious and atomised in our present economic and ecological conditions, and an emancipated and *collective* transhuman subject is neither currently evident nor inevitable. Regardless, in his left accelerationist manifesto *Fully Automated Luxury Communism (FALC),* Aaron Bastani insists that technological acceleration will ultimately determine the subjects that emerge: "our technology is already making us gods – so we might as well get good at it" (Bastani 2019, 189). Contrary to such ahistorical claims, Brassier rightly reminds us that "If Marx succeeds in materializing dialectics, it is precisely to the extent that he refrains from positivizing the potentiality he construes as generically human" (Brassier 2019, 103).

Our transformative, transhuman potential is necessarily and inherently latent in us as historical subjects: ontologically constituent yet always contingent.

Contra Kurzweil, Bastani does register a warning about the asymmetry of access to the means for individuals to remain competitive in labour markets with his allusion in *FALC* to "a growing surplus of global poor who form an ever-larger 'unnecessariat'" (Bastani 2019, 23). Bastani's text is notable for the conceptual oscillation that occurs as he sets out the epistemology and politics of left accelerationism, however. In *FALC,* we find a future that is "a departure from all history before it … dramatically different from our own … inevitable and near at hand" and an insistence that *FALC* is "a politics rather than some inevitable future … outlining the world as it could be" (Bastani 2019, 14-15). Although this politics is an attempt to adumbrate an economically and ecologically just future, *FALC's* conceptual slippage between inevitability and contingency is indicative of a problem that left accelerationism shares with Kurzweil's bourgeois techno-utopianism. In the rush to theorise a transcendence of our current human limits, the "exploitation, oppression [and] humiliation" (Lefebvre 2020, 91) that define these limits are understood in an ahistorical fashion. Bastani demands a future where each individual can "be who you want, rather than your life being shaped by forces beyond your control" (Bastani 2019, 192), however as species-beings whose potential for becoming is inextricably bound up with the being and becoming of others (and the products of others' past and present labour), we are not able to subjectivate in such an individualist, atomistic and linear fashion. Here Bastani is alarmingly close to theorists of human capital, for whom subjects are merely "a produced means of production, the product of investment" (Schultz 1961, 3). We must further note an ironic contradiction in Bastani's proposed emancipation from "forces beyond … control": whilst "an appropriate politics" for an accelerationist future "remains unclear," "the forces underpinning it are already present" (Bastani 2019, 11). It seems, therefore, that forces beyond our control *will* determine and structure our social relations, and thus our politics and who we want to be, and also that a politics adequate to controlling these forces may not even be predicated on changing our social relations. This underpinning theoretical idealism means that *FALC's* "inevitable future" relies on either the continuation of capitalist social relations or their overcoming via a one-sided technological determinism.

In *#Accelerate: Manifesto for an Accelerationist Politics,* Nick Srnicek and Alex Williams offer a more sophisticated account, noting that "technology and the social are intimately bound up with one another, and changes in either potentiate and reinforce changes in the other" (Srnicek and Williams 2019, 356). This dialectical understanding is more tenuous in *Inventing the Future*, however. Discussing a universal basic income (UBI), Srnicek and Williams (2016, 120) propose that such a measure will "overturn … the asymmetry of power that currently exists between labour and capital. … A UBI … transforms the political relationship between labour and capital." Is it from such a transformation that a *democratic*

transhuman project, or a collective transhuman subject, might emerge?

First, we must raise a problem of method. Obviously the asymmetry of power between labour and capital is not something that exists only currently, although it is possible that a well-implemented UBI accompanied by an increase in automation could set us on the road to the world Keynes (1963) described in *Economic Possibilities of Our Grandchildren*. With wage-labourers empowered by a UBI to resist the austerity and alienation imposed by neoliberal capitalism, a transformation of capitalist social relations could perhaps be achieved. Again, however, the ahistorical thrust of left accelerationism leads to what Noys (2010, 17) has described as the "fatal slackening of thought" that results from a "departure from the tension of dialectical difference." The history of capitalism reveals constant shifts in the power asymmetry between labour and capital – as Stuart Hall (2011, 727) noted, "hegemony … is a process, not a state of being" – yet this asymmetry *as process* is inherent to capitalism as a mode of production. To overturn the asymmetry would be to overturn capitalism itself: a disruption of capitalist social relations via the deployment of a UBI and an acceleration of productive forces glosses over how "the process of production and the fundamental social relations of capitalism are interrelated" (Postone 1993, 23), simultaneously in tension and mutually constitutive as they structure each other's ongoing being and becoming. Technological development is certainly socially transformative, "but if societies were not ready to accept it, to control technology … then the worst consequences would result" (Lefebvre 2020, 103). A social readiness to accept new technologies does not inevitably or unilaterally reinforce emancipatory tendencies or produce material changes in structures of power: indeed, it may potentiate existing asymmetries. Acceleration may likewise alter processes of capital accumulation, yet the current complexities and historical volatility of capital as *moving* contradiction are necessarily downplayed in accelerationist accounts: by what processes will staggeringly unequal societies control technologies of economic democratisation?

If we historicize the theoretical potentialities of automation, for example, we find that

> automation theory may be described as a spontaneous discourse of capitalist societies, which … *reappears* in those societies time and again as a way of thinking through their limits. (Benanav 2019, 11-12, italics mine)

Equally, a UBI is not sufficient to emancipate subjects from the exploitation inherent in capitalist social relations. Even if we accept Srnicek and Williams' claim that a UBI and automation will disrupt the labour/capital antagonism, we still need to know who the subject that arises from the flux of this disruption might be, and how they might embody the sublation of the antagonism. If a UBI does indeed "unbind … the coercive aspects of wage labour" (Srnicek and Williams 2016, 120), then we are free to direct our labour-power towards utopian projects of self-development and enhancement, for which the transhuman – as transitional subject towards the posthuman – is indeed an ideal-type. But does a UBI function thus? Following Martin Hagglund, we see instead that "no form of universal basic income can free us from capitalist exploitation, since only wage labour in the service of profit can generate the wealth that is distributed in the form of a UBI" (Hagglund 2019, 287). A UBI and automation are posited as preconditions for transhuman subjectivation, yet in left accelerationism they appear as one-sided, disembedded from the historicity that is necessary to rigorously think the possibilities of their becoming. This is not by any stretch to reject utopian thinking, but to note that the utopianism particular to a UBI (and current automation discourse) has a history; Frederic Jameson, the theorist of utopia *par excellence,* could be speaking specifically about a UBI when he dryly notes how

> in the Roman style of bread and circuses … the excess wealth of the state … is sensibly and tactically motivated in order to produce the consumers required to keep the system functioning and to absorb production. (Jameson 2006, 21)

Second, we can easily imagine a Polanyian "double movement" against a UBI. As "the action of two organizing principles in society" is set in motion, "each of them setting itself specific institutional aims, having the support of definite social forces and using its own distinctive methods" (Polanyi 2001, 138), the reactionary wing – organized capital as organizing principle – might deploy methods like the expansion of credit markets and innovation in exotic financial products in support of its institutional aims, as well as an increase in commodification entirely congruent with the rampant immaterialization of labour in our historical moment. Indeed, such neoliberal countermeasures have a long and productive history,[3] which suggests that a UBI and the full automation with which it forms a "positive feedback loop" (Srnicek and Williams 2016, 122) could provide numerous avenues for financialization. In late neoliberal capitalism, the institutional embedding of a UBI would effectively serve to increase the consumer base for investment in both the real and financialized economy: here capital's circulation expands and adapts in tandem with a UBI, further cementing capitalism as epistemic horizon. Investment is not merely a matter of purchasing commodities; it also defines the contours of subjectivities via both individual and collective participation in the wage-labour and consumer rituals that maintain the system and (perhaps) enable immersion in its *jouissance*. Via automation and a UBI, left accelerationism promises to redirect the abstract and atomised enjoyment that capitalism allows as a trade-off for the sale of labour-power, so that "the pursuit of leisure for some" no longer means "making others work harder" (Bastani 2019, 241). Indeed, Srnicek and Williams (2016, 92) claim that "the very social basis of capitalism as an economic system … is crumbling"; a UBI and automation should therefore accelerate this collapse and transform our subjective possibilities. Although left accelerationism cannot be critiqued for not taking Covid-19 into account, such claims are nonetheless detached from the real social relations of our current historical moment: Amazon hired an average of 1,400 new workers a day in 2020, for example. Martin Hagglund points out that a UBI and automation remain "altogether dependent on the social form of wage-labour" (Hagglund 2019, 287); they also propel a techno-utopianism that neglects what Jameson has called "the hard lesson of some more genuinely dialectical way to think historical development and change" (Jameson 2000, 225).

Technological determinism therefore prevails in both Kurzweilian futurism and left accelerationism. An idealist faith in the smoothing over of social tensions via technological advancement is par for the course in bourgeois theorising, however Williams has recently described left accelerationism as "a theoretical and political project broadly seeking to resuscitate a Marxian tradition of rationalistic hegemonic politics" (Williams 2019, 15). A would-be hegemonic project must seek "the points of least resistance, at which the force of will can be most fruitfully applied" (Gramsci 1999, 209), yet the valorisation of relentless technological advancement – and crucially the consequences for those subject to it – tendentially erodes much of the agency of "surplus humanity" *vis a vis* hegemonic contestation. Marx perhaps alluded to this in the *Grundrisse*, although left accelerationists typically do not register the ambiguity evident in the passage:

> Nature builds no machines. … These are products of human industry; natural material transformed into organs of the human will over nature, or of human participation in nature. They are *organs of the human brain, created by the human hand;* the power of knowledge, objectified. The development of fixed capital indicates to what degree general social knowledge has become a *direct force of production,* and to what degree, hence, the conditions of the process of social life itself have come under the control of the general intellect and been transformed in accordance with it. (Marx 2005, 706)

Although such development means "material conditions to blow this foundation sky-high" (Marx 2005, 706) are evident, as Bastani echoes in *FALC,*

3 We might even posit that neoliberalism, as a project of defensive constructivism, is a response to the ascendancy of collectivist political economic organisation after WWII. See Mark Fisher in *Acid Communism*: "neoliberalism is best understood as a project aimed at destroying – to the point of making them unthinkable – the experiments in democratic socialism and libertarian communism that were efflorescing at the end of the Sixties and the beginning of the Seventies (Fisher 2018, 754).

history has borne out that the transformation of "the conditions of the process of social life" by the "general intellect" is not unidirectional nor necessarily emancipatory. We need not unconditionally expand classical Marxist categories like alienation, or the exploitation of labour inherent in generating surplus value, to register their pertinence today: the "gig economy," zero hour contracts and the preponderance of unpaid internships are vanguard processes of exploitation, to focus merely on the Global North. Additionally, the "immaterial labour" performed around the clock on social media platforms bears out the common-sense neoliberal insight that "the man of consumption … is a producer … he produces his own satisfaction" (Foucault 2004, 226). The production of an online persona, for example, necessitates and propels a constant distillation of the "general intellect." Micro-targeted consumer opportunities then propel further productive consumption,[4] subtly but definitively alienating the consumer from this general social knowledge as they participate in its ongoing becoming. Likewise, the unpaid labour involved in social reproduction, or even non-abstract labour performed outside of the wage relation, remains mired in the totality of capitalist social relations: "even my concrete labour … is not performed during and for a time of my own choosing or in forms that I can determine" (Bhattacharya 2017, 10). As Ray Brassier eloquently notes, "the ensemble of social relations harbours a potentiality to become that is at once enabled and disabled by the social divisions of labour and class that they have generated" (Brassier 2019, 99). Under neoliberal capitalism, "agency disappears into a fundamental passivity – becoming agents of capital" (Noys 2010, 8). Such agency must be materially re-constituted before we can begin to dream of transhuman subjectivation or fully automated luxury communism. We cannot invent the future without organising to change the present.

Srnicek and Williams lament that "since the end of Fordism, we have witnessed the "enslavement of technoscience to capitalist objectives" (Srnicek and Williams 2019, 355), but how might we emancipate technoscience without emancipating ourselves from neoliberal precarity? Enslavement implies a fundamental and pervasive passivity, which obscures how capitalist objectives, as moves towards hegemony, are always evolving and in various degrees of contestation; Polanyi's double movement continues to structure how processes of surplus-value extraction proceed. Despite the weakness of the left in our recent past, the "enslavement of technoscience" posits the need for an historical rupture to bring a more rational set of social objectives into being. Srnicek and Williams have spent plenty of time analysing neoliberalism,[5] including calling for "mimicking the Mont Pelerin Society" (Srnicek and Williams 2019, 359), so it is surprising to note periodic elisions of the dynamic, historical struggles that establish and transform the conditions that underpin technological change in their work.

Moishe Postone calls into question the contemporary usefulness of Marxist and Marxist-derived theory whereby socialism (or post-capitalism) "is thought to be a social form of distribution that is not only more just but more adequate" (Postone 1993, 9). Left accelerationism largely concurs that it is merely capitalist political economy that is holding back the socially transcendent potential of technology, however. Bastani highlights this tendency in an already-quoted passage: with the forces necessary to move beyond capitalism "already present," an Althusserian epistemic break beckons as soon as an "appropriate politics" arises. An appropriate politics would unleash these forces, yet with an inconsistent dialectical understanding of the dynamic tensions between classes that propel and repel vanguard processes of capital accumulation, in left accelerationism the actual agency of subordinated subjects to collectively contest their class position is elided. By contrast, the *Xenofeminist Manifesto's* (Cuboniks 2018, 33) call to "redeploy existing technologies and invent novel cognitive and material tools in the service of common ends" remains ontologically grounded in our current social relations as it simultaneously highlights the

4 This productive consumption is two-sided: we produce and reproduce ourselves as human capital, unique and precarious commodities, as we consume. Transhuman subjectivation is arguably the apotheosis of atomised productive consumption.

5 See Chapter 3 of *Inventing the Future* and the "Introduction" and "Interregnum" sections of *#Accelerate: Manifesto for an Accelerationist Politics.*

dialectical process by which we might overcome the exploitation inherent in these, thus delineating a concrete yet contingent telos via which the conditions for collective transhuman subjectivation might arise.

Left accelerationism also elides exactly how surplus humanity might appropriate technologies for non-market purposes, or organise around the goal of a universal basic income. Again, contrast the *Xenofeminism Manifesto,* which highlights how

> there are incessantly proliferating tools to be annexed … This is not an elision of the fact that a large amount of the world's poor is adversely affected by the expanding technological industry … but an explicit acknowledgement of these conditions as a target for elimination. (Cuboniks 2018, 35)

Any project of accelerationist *emancipation* must be immanent, grounded in the real social relations of late neoliberal capitalism, however such a grounding of course forecloses the technological determinism that left accelerationism needs to get underway at all. Although often alluring, Srnicek and William's prescription of full automation and a universal basic income in order to support the concomitant mass of surplus humanity thus proceeds from a serious overestimation of the teleological progressivism of technology, and a serious underestimation of one's opponent. Surely *capital's* response to any increased social power of the "unnecessariat" – in an era where neoliberalism has systematically rendered the organised left catastrophically weak – would take into account this history. As Bastani (2019, 22) notes, "capitalism's staunchest advocates draw strength from knowing similar problems have been dealt with before." If technological advancement means transhumanism is our future, how will we unnecessarians organize struggles against capital to equitably and adequately enhance our selves thus? How might we wrest control of transformative technologies from corporate actors – can we direct state power to such ends? What lessons can we draw from recent history to develop movement cohesion in the face of realised structural adjustment and exponential increases in computing power? As Ellen Meiksins Wood notes, any overcoming of capital as organizing principle is possible only because

> production relations are experienced by subordinate classes in their own particular ways that … come into contradiction with the 'common sense of power' … it is such contradictions that produce the struggles which determine the reorganization and transformation of the modes of production (Wood 2016, 65).

Is it perhaps the case that for left accelerationism capital is understood less as a fluid constellation of concrete social relations – a "moving contradiction," "value in process" – and more as an abstract and determinist force of technological innovation? Such an understanding is useful for making futurist predictions, but is ultimately an unpromising ground for a radical materialist politics. There is little scope in left accelerationism for subjects to make their own history, which even in our neoliberal era surely remains the ontological kernel of any project of emancipation. Left accelerationism's departure from a properly Marxist dialectical method means that the capacity of our collective labour to force a radical change in capitalist social relations is obscured. Obscured also are how new modalities of subjectivation might occur. The radical individualism represented by Kurzweil's bourgeois transhuman – the enlightened consumer who can dream of living forever in conditions that blur simulation and the real – is merely the other side of the coin.

The most significant commonality between Kurzweil and left accelerationism, however, is the elision of the position and potentiality of *labour.* Whilst we can agree with Jameson that the injunction to historicise should always underpin theoretical interventions, we can locate in labour a grounding ontological category that is *formally* transhistorical:[6] "the first historical act is thus the production … of

6 Bakker and Gill (2019) make the case for using "the concept of work as a primary category of social ontology." There is "an important distinction between work and labor – *work* is the broader category, defined as a process which 'broadly mediates relations between social and natural orders and combines the theoretical and practical activity of human beings in an understanding of movement and change'. *Labor* … is more narrowly understood as 'a particular aspect of work which in a capitalist social formation is that part which is appropriated and controlled by capital in the labour-capital relation'." Whilst I concur with the distinction they draw, I will persist with "labour" here, with the understanding that it can signify very different conditions and processes via which humans interact with their environment.

material life itself" (Marx 1998, 47), and thus without labour there is no history, although labour as *content* is of course historically specific. Postone has highlighted how "labour in capitalism plays a historically unique role in mediating social relations … labour's specificity in capitalism … is inextricably related to, and molded by, the basic social relations of that society" (Postone 1993, 16). As capitalist subjects, we make ourselves and our world by our labour, just as this dialectical process makes and remakes us. We therefore enhance ourselves and integrate with our technologies as we labour to transform and advance the social conditions created by this same enhancement: "as society produces man as man [sic], so it is produced by him [sic]" (Marx 1963, 157). The ontological primacy of the dialectic of being and becoming reveals a simple but profound insight: we have always been transhuman. Or rather, under capitalism – as "life creating life" (Marx 1963, 127) – we have always *had* and necessarily *have* the capacity to act, think and understand ourselves as such.

Capitalism has accelerated and proliferated processes of becoming radically other, yet the capacity of subjects to conceive of their subjectivity as profoundly changeable – and as integrated and coterminous with technological advancement – is constitutive of capitalism as a social formation and capital as a social relation. Subjectivation into neoliberal human capital heightens such conceptions, however we can trace throughout the history of capitalism various ideological projects of thinking beyond the human: both as an elite preoccupation (futurism is an obvious example) and a taxonomical process of ascribing raced and gendered (sub)humanities. Capitalism grounds us ontologically in such transformative potentiality via the collective social abstraction of our labour-power, "the alienated structures constituted by (abstract) labor itself" (Postone 1993, 325). Our capacity to labour cannot be neatly abstracted from the concrete totality of a capitalist mode of production to produce new subjective categories that experience material life, but it can be (re)organized to shatter ontological categories that are reified under capitalism. Between these fragments now close at hand, and the emancipatory labour that "capital must always obstruct: the *collective* capacity to produce, care and enjoy" (Fisher 2018, 753), a dialectical process can propel the emergence of radically new subjectivities that collectively pose an existential threat to capitalism. Conversely, the elision of such labour's potential ensures that subjects – even those transforming "from creatures of flesh and bone to being mostly machine-made" (Grossman 2001) – remain enmeshed in capitalist social relations.

Synchrony and Diachrony

How then can we know that we are always-already transhuman? Great care must be taken here lest we slip into the same technological determinism and ahistoricism that left accelerationism has been charged with. If we can accept labour as ontologically primary for human subjects – whilst recognising that an elision of labour's potentialities is necessary in order to theorise the transhuman – then two distinct modes of understanding our capacity for transhumanist subjectivation emerge. For the sake of brevity, the contrast between a synchronic and a diachronic understanding of historical change can be posited as blooming into two very different epistemological frameworks for inventing the future. Further, the contrast between the synchronic and the diachronic – between Marx and a certain strain of the Marxist tradition, and Kurzweil, left accelerationism and a different strain of the Marxist tradition – reveals two very different frameworks for understanding the motion of history, technological change, and the subjects produced and reproduced in the dialectical processes of social development.

Why might this division be relevant to an analysis of left accelerationism and transhumanism? At the risk of an initial digression, recall how Frederic Jameson reminds us of "the austere dialectical imperative" necessary to think capitalism "as catastrophe and progress" all at once (Jameson 2000, 226). Crucially for the question of transhuman subjectivation, and the implications of developing such a project on the radical left, Jameson's analysis also highlights the immanent movement that structures any possibility of becoming for subjects of capitalism. As species-beings, the transhuman is always-already

latent in us; the accelerationist rush to transhuman subjectivity in fact posits a rather emaciated vision of human potentiality, entirely congruent with the radical individualism of post-Fordist neoliberal capitalism. We can trace a genealogy of the thinking of such a subject – who is the static bearer of a structure, a locus of power but not of agency – from Althusser via Foucault through to Bastani and Srnicek and Williams. With Althusser, we find a subject whose social position is determined in advance by impersonal and overarching structures in which they are always-already enmeshed:

> The structure of the relations of production determines the *places* and *functions* occupied by the agents of production, who are never anything more than the occupants of these places. … The true 'subjects' … are not … the 'obviousness' of the 'given' of naïve anthropology, 'concrete individuals,' 'real men' … (Althusser 2009, 198).

Althusser's student Foucault takes this further, proclaiming in *The Order of Things* the fundamental irrelevance to "contemporary thought" of "the intermingled promises of the dialectic and anthropology" (Foucault 1994, 263). Here we can locate the birth of the transhuman subject, and see how a synchronic conception of history and epistemology – admittedly richer than Althusser's – leads directly to the eclipsing of the collective subject that Marx called a species-being. The ontological legitimacy of such a subject is revoked by highlighting how this same subject emerges only via historicity being "superimposed exactly on the human essence" in "stony immobility" (Foucault 1994, 262). Undoubtedly the positionality of the taken for granted subject of history, particularly in the late Fordist period when Foucault was writing, needed and continues to need addressing. Displacing the white, patriarchal and hetero-normative subject who occupied a "universal" subject position is a project to be celebrated and continued. But there is a troubling elision in Foucault's project: Wendy Brown (2015, 75) has noted how he "averted his glance from capital itself as a historical and social force," and in slipping free of oppressive anthropological categories the transhuman subject is condemned from its birth to subjectivate with capital as epistemic horizon. In attempting to cleanse radical thought of a diachronic bias, the subject whose becoming blooms in a thousand potential directions remains trapped in synchronic stasis. The space opened up by the synchronic turn was doubtless needed, however in abandoning the dialectic we all too often find an "atomism … foundational to … conceptual outlook[s]" (McNally 2017, 94).

E.P Thompson's critique of Althusser in *The Poverty of Theory* is pertinent here. Thompson's unveiling of Althusser's structuralist method shows how within such modes of analysis

> the diachronic is waived away as mere unstructured narrative. … Only the stasis of structural analysis can disclose knowledge. The flow of events ("historicist time") is an empiricist fable. The logic of process is disallowed. (Thompson 1978, 263)

We can discern a similar stasis – a lack of dialectical motion – in many of the claims made by Bastani and Srnicek and Williams. The capacity of humans to make their own history – "how human agency gives rise to an involuntary result … at one and the same time … 'we make our own history' and 'history makes itself'" (Thompson 1978, 279) – disappears in synchronic accounts. Brassier, who occupies an ambiguous position relative to left accelerationism – certainly his reading of Marx is richer and more committed to the complexity of Marx's thought – echoes Thompson's point in what might also be read as a critique of the stunted dialectics evident throughout left accelerationism:

> History is at once something we make and something that happens to us. … History dispossess us even as it provides us with the sole resource for becoming free. (Brassier 2019, 104)

Left accelerationism ultimately departs from a properly Marxist dialectical method in projecting the future and engaging with history; its idealism and techno-utopianism, which freeze subjects in abstract theoretical categories, thus logically follow. A significant consequence is that class antagonisms tend to be downplayed, engaged with only so far as they

conform to a pre-given theoretical structure: precisely what Noys identified as "the abolition of friction in the name of immersion" (Noys 2014, 102). The class position/s of the transhuman (and thus the posthuman), in both being and becoming, are tendentially evaded, as politicised social solidarities do not emerge from conditions found close at hand (Marx 2009, 9). Rather, they are determined in advance by predetermined social, cultural and economic structures. R.W. Cornell's critique of Althusser's functionalist class categories allows us to see the one-sidedness of transhuman class assignations:

> People, in other words, form classes only insofar – exactly insofar – as they are the "agents" of the system, the bearers of a structure which defines class places for them and distributes them among these places. (Connell 1979, 317)

The transhuman subject can thus only come to be, or act as a bridge to the posthuman, as part of a broader political project of idealist utopian acceleration. It can only be thought as part of an epistemology that dissolves class antagonisms and tacitly validates technological determinism.

In her discussion of Althusser, Connell notes that "the ideological apparatuses in Althusser, are … theorized in terms of the function they perform in a social order *whose class nature is known a priori*" (Connell 1979, 333). Similarly, understanding a UBI and automation as preconditions for transhuman becoming posits an emancipation from capitalist social relations as inherent in the development of capitalist productive forces, regardless of historical specificity. Srnicek and Williams' inconsistency on this point is worth noting: first, they underscore that "without a simultaneous shift in the hegemonic ideas of society, new technologies will continue to be developed along capitalist lines, and old technologies will remain beholden to capitalist values" (Srnicek and Williams 2016, 153). Second, they claim that "if deindustrialisation is a necessary stage along the path towards a postcapitalist society, then the industrial working class could never have been the agent of change" (Srnicek and Williams 2016, 157). Here, we can see technological determinism in tension with a more dialectical understanding of historical change: determinism continues to rupture the historical fabric in the process of its knitting. Much like Althusser's static class categories, a linear teleology is imposed to legitimate a structuralist and synchronic epistemology; a rupture then becomes both discursively and historically necessary in order for profound social change to occur. Althusser's epistemic break is also a break with a dialectical understanding of history, and left accelerationism likewise posits an emancipatory rupture that floats free of the conditions via which it might arise. Noys has highlighted how the abandonment of the dialectic, common to historical variants of accelerationism, results from accelerationism's "difficulty in engaging with the problem of labour" (Noys 2014, 23). Similarly, Diane Elson's seminal essay on the labour theory of value highlights the inadequacy of Marxist accounts that take for granted

> that any theory requires separable determining factors, discretely different from what they are supposed to determine. … Such a method can only identify static structures, and is forced to pose a qualitative change as … a quantum leap between structures; and not as a process. (Elson 2015, 131-141)

Left accelerationism implicitly yet consistently posits exactly such an understanding of historical change. In *Inventing the Future,* "no answer readily presents itself" as to who "the transformative subject today" might be (Srnicek and Williams 2016, 158), or how they might emerge, yet the "power asymmetry between labour and capital" (Srnicek and Williams 2016, 120) stands waiting to be overcome. Left accelerationism offers much rhetoric about moving beyond, however its theoretical iterations evince a distinct lack of movement. Noys again is the critical voice *par excellence*:

> The irony is that accelerationism, which is relentlessly directed towards the future, turns out to be nostalgic … The nostalgia is … a desire for something, anything, to generate enough energy and momentum to break the horizon of the present. (Noys 2014, 23-97)

The genealogy of the thinking of such a break shows that "the lonely hour of the last instance never comes" (Althusser 1962), of course, and likewise we can see that a subject who might embody the enhancements of a liberated technoscience can only come to be *after* this break has occurred; they cannot participate in a break's becoming because a break offers no reciprocal positionality for a subject with transformative potential. The transhuman subject, although expanded beyond its "immediate bodily form" (Srnicek and Williams 2019, 361), commences life in – and as – a category of stasis (Thompson 1978, 287).

Just as class is only visible as a phenomenon in process (Wood 2016, 81), likewise any realistic picture of a transhuman subject, or crucially of a process of transhuman subjectivation, must be both grounded in and inherently responsive to the dynamism and diachronic thrust of history. If human emancipation seemed more possible for a subject producing society as society produces subjects (regardless of their production by an anthropological dialectic), or from within the labour/capital compromise of Fordism, than under our current conditions, the desire to accelerate out of these so that a democratic transhuman subject can emerge is understandable. But without a grounding in the real social relations of late neoliberal capitalism, such a subject remains the idealized embodiment of a vanguard techno-bourgeoisie. The political *cul de sac* of structuralist thinking, epitomised by the too-premature death of the human in Foucault, is similarly evident in the Kurzweilian transhuman, glimmering yet stranded in a future that our present cannot reach. As we cannot merely accelerate from one structure to another and assume that emancipation will follow, inventing the future must involve "struggles over the state and condition of labour" (Noys 2014, 98) in the here and now.

The Transhuman Labourer

As transhumans, Kurzweil prophecies that

> we'll have a full understanding of the methods of the human brain. One benefit will be a deep understanding of ourselves, but the key implication is that it will expand the toolkit of techniques we can apply to create artificial intelligence (Kurzweil 2005).

This prediction could have been made at any point in human history. It posits a transcendent beyond, where the ultimate destination of subjectivity is the capacity to replicate our most advanced understandings of what is "human" in technology. The necessity and capacity of humans to move themselves into new conceptions of what it is to be human, however – a queen, a slave, a philosopher, a prophet, a wage-labourer, a revolutionary, a transhuman – *is* the very movement of history. Similarly, for all left accelerationism's valorisation of "moving beyond," the starting point for such a movement is always-already deferred, existing in a static future social structure. The movement is not *immanent*; it does not and cannot originate in our current social conditions, as these must be somehow transformed before the emancipatory thrust of an accelerationist future can be unleashed. This is precisely "the lack of any instantiation of 'acceleration' in the present moment" that Noys has described (Noys 2013, 4).

Whilst neoliberalism may be fracturing socio-culturally, processes of capital circulation, financialization and surplus-labour extraction continue to proliferate. As Wood describes, "there is no historical necessity for less productive 'economic structures' to be followed by more productive ones" (Wood 2016, 119). The capacity of species-beings to collectively transcend wage-labour – and direct the ontologically-primary capacity *to* labour towards overcoming capitalism – remains, in our current conjuncture, unfortunately remote. We will always perform some variety of labour, of course, but as long as capitalism persists we will also always need to sell our labour-power. Under neoliberal capitalism, transhuman subjectivation will therefore tendentially reproduce a techno-elite whilst reifying the competitive "potential" of such subjectivation for surplus humanity. The possibility of becoming radically other – a transhuman on the way to posthuman-hood, for example – is always a moment in the dialectical process of capitalist subject-formation, thus transhuman becoming seemed viable, indeed imminent, for proto-accelerationist subjects like the futurists. As futurism celebrated man disappearing into the machine, they "aestheticize[d] the destructive turn of the productive

forces because they cannot truly grasp the possibility of redeploying these forces" (Noys 2014, 17). Similarly, left accelerationists and transhumanists alike see the utopian possibilities of technology as definitively liberating subjects from the burden of a mortal body – or from the burdens of an assigned position in a social body – precisely because they do not ground historical motion in capitalist social relations: instead, contingent ontological possibilities are projected as inevitable and a transhuman subject hypostatized. Transhuman becoming, however, is arguably a more distant possibility in our own historical period – despite the technological possibilities our era offers – than in earlier periods of capitalist development.

The transhuman may well become, but such a subject does not embody a collective emancipatory political potential. The sales agents and reservation clerks to which Kurzweil refers above may develop innovative new means to sell their labour power in the Global North, where neoliberal meritocracy will reward *some*, and a transcendence of wage-labour via transhuman subjectivation will remain a possibility, however remote. In the Global South, and in online retailers' vast warehouses, a transhuman future seems significantly less likely for those labourers who sustain global supply chains, powering the e-commerce Kurzweil extolled two decades ago.

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