DELIBERATIO
STUDIES IN CONTEMPORARY PHILOSOPHICAL CHALLENGES

https://deliberatio.uvt.ro/

*1*(1) 2021, 97–108

ISSN 2810 – 5826 ISSN – L 2810 – 5532 Print
ISSN 2810 – 5532 ISSN – L 2810 – 5532 Online

# The Metahumanities

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**Abstract**

In *On Transhumanism*, Stefan Lorenz Sorgner presents the *metahumanities* as one of twelve pillars of the transhumanist movement. Sorgner defines the metahumanities as a further development of the traditional humanities through the inclusion of non-dualistic insights. This approach is placed alongside two forms of parental education: genetic analysis and genetic enhancement. In this paper, I explore the development of the metahumanities in conjunction with dualistic modes of thinking that have guided the institutional organization of the university, and by association, the corporate model for U.S. higher education. I discuss challenging cultural and structural dimensions of this endeavor, and I argue that as one of the pillars of transhumanism, discourses about the metahumanities are strengthened by an interrogation of the university's consumerist culture, as well as the cognitive capitalist context in which posthumanist curriculum and educational enhancement are emerging. Sorgner describes his transhumanism as a "weak Nietzschean" version within a diverse cultural movement. This essay's consideration of the metahumanities therefore draws attention to Nietzsche's writings about education, as well as his dynamic and perspectival view of values and relationship to equality in a multicultural democratic society. These values are examined in relation to a call for less individualistic reformulations of freedom and education.

*Keywords:* Transhumanism, Posthumanism, Education, Nietzsche, Cognitive Capitalism

## 1. The Metahumanities

*On Transhumanism* (2016/2020) by Stefan Lorenz Sorgner is a primer on many of the emerging social and ethical issues surrounding the transhumanist movement, as well as a response to widely held prejudices against transhumanist thought and values. In the book's concluding chapter, Sorgner designates twelve discursive pillars for his "weak Nietzschean" branch of transhumanism, such as a rejection of the categorical distinctiveness of the human and a recognition of negative freedom as a central achievement of the Enlightenment, and discusses how they fit in with other positions within the movement. Final among these tenets is the *metahumanities*, an educational approach that Sorgner defines in terms of the curricular and pedagogical, as well as the parental. The former promotes the development of the posthumanities—an expansion of classic humanistic studies through the integration of non-dualistic perspectives on the arts, literature, and sciences. On the latter, by drawing a structural analogy between educational and genetic enhancement, Sorgner advises that the moral evaluation of these processes can also be viewed analogously, with parental education affirming genetic analysis and enhancement of one's children. Put together, Sorgner writes that the metahumanities can be considered in terms of the potential they hold for the revision of dualistic moral criteria and ontological assessments (e.g., the Kantian view of the human being) that will help guide us through questions that are likely to emerge during a transhumanist paradigm shift.

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U.S. higher education has become a neoliberal regime assigning central value to the marketplace. This has led to a landscape characterized by a shrinking of academic departments deemed as less important to the technoscientific core of knowledge economies, as well as increased managerial control of the faculty, and the creation of an adjunct teaching force. As a result of these corporate, technologized, and managerial forces, there is growing incongruity between *universitas* (scholarship and research) and teaching (Wernick, 2006). As Braidotti (2018) points out, the development of the posthumanities is "caught in the accelerating spin of the neoliberal logic of capitalizing on life itself" (p. 17), and faculty are "immanent to the very conditions … trying to [be] changed (pp. 11-12). These conditions exist within a system of cognitive capitalism (Moulier-Boutang, 2011) that "saturates the present" and "eats up the future" through its frenzied pace. Discussions about the metahumanities therefore must take a critical stance—an approach that includes an examination of how the culture and structural organization of the neoliberal university has been influenced by the very dualistic thinking that the metahumanities strive to move beyond, and an analysis of the socioeconomic dimensions of educational enhancement in a cognitive capitalist world.

Transhumanists are heterogeneous in their views, especially in terms of how they envision posthumans and what they regard as auspicious enhancement technologies. Yet as Sorgner (2016/2020) explains, the majority is united on their "wish to implement the latest technologies as a way of promoting human survival and prosperity" and shares an attitude that affirms "the use of technologies to increase the likelihood that posthumans may emerge" (p. 34). Most transhumanists also cherish individual freedom and choice pertaining to enhancement because "humans differ widely in their conceptions of what their own perfection or improvement would consist in," and "it would be morally unacceptable for anybody to impose a single standard to which we would all have to conform" (Bostrom, 2005, p. 11). Both Nietzschean philosophy and transhumanism hold a dynamic and perspectival view of values, so the cultivation of a questioning attitude and an openness towards revising one's beliefs and assumptions is encouraged (Sorgner, 2009).

This paper considers these values in relation to a predominant American belief in educational equality. Nietzsche celebrated innate human uniqueness, therefore it is unlikely that he would have found purely meritocratic or sociological approaches to understanding educational achievement to be adequate (Jonas & Yacek, 2019). Nevertheless, in a multicultural democracy and cognitive capitalist society, there are populations for whom the sort of "maximum freedom" offered to individuals by classical liberalism is not a straightforward prospect. For example, not only has the interdependence of the extended family been integral to many Americans' parenting practices (Sarkisian & Gerstel, 2012), but as the journalist Mary Harrrington (2021) suggests, because the ideal liberal subject is unbeholden to care-giving obligations, not only do the so-called "caring professions" hold lesser cultural value, but the experience of symbiosis that many parents have with their children is antithetical to the tech-enabled freedom on offer to the self-directing late consumer capitalist. With these factors in mind, are transhumanists' individually oriented ideals surrounding parental education and enhancement in need of revaluation?

## 2. Posthumanist Theories of Learning

Posthumanist theories have received significant attention within the educational sciences, with issues of discussion including institutional practices, technology-enhanced pedagogies, concerns about the "end of education" (Herbrechter, 2018), predictions about an impending obsolescence of teachers and curriculum, and the development of experimental pedagogies. Hasse (2020) traces areas of overlap and contradiction within these discourses by drawing a main distinction between "posthuman" (i.e., transhumanist) and posthumanist theories, while simultaneously

pointing to how both approaches have awarded inadequate attention to how they may increase educational inequalities.

Transhumanist attitudes towards learning are characterized by "an enhancement approach that uses technology to improve human learning" (e.g., robotic direct feedback and tutoring, "smart drugs," genetic enhancement) and an expectation of "eliminat[ing] the traditional understanding of education as a teleological practice that qualifies, socializes, and subjectifies through a process of systemic teaching" (Hasse, 2020, p. 306). They are predicated upon self-directed, individualistic, and technologically instrumentalist pedagogies—avenues that work towards the educational enhancement of the Enlightenment human into a rational and liberal (post)human.

Transhumanists do not all sing from the same hymn sheet when it comes to their vision of "the posthuman," but they broadly differ from posthumanists on their "understanding of the human of which we are post" (Hasse, 2020, p. 313). Within posthumanism, the view of the human is typically materialist, and there is a reframing of the relationship of humans to non-human animals and technologies. According to this non-dualistic anthropology, which no longer perceives humans as part immaterial soul and part material body, humans have always been posthuman, and the attitude is that learning should be reconceptualized to account for how there is a "constant material entanglement of the human and the nonhuman in the enactment of the world" (Edwards, 2010, p. 5).

What would the de-centering of the human mean within the classroom? One approach is that pedagogies should emphasize playful engagement and experimentation with materials, rather than presupposing that the objective is for a subject (the student) to learn something (curriculum). Hasse (2020, p. 309) advises that this approach, which theorizes learning as an event based upon "discourse meeting materials," is insufficient due to its impersonality: If the posthumanities undo the liberal human subject upon whom "education" has relied, then how can we account for the embodied educational experiences students bring to classroom engagement—experiences deriving from a diversity of cultural backgrounds and structural inequalities?

The critical posthumanities, which include assessments of global capitalism and posthumanism itself, hold the potential to draw attention to how power relations operate through students' experiences in and outside of the classroom. For example, Rosi Braidotti's posthumanist relational ontology, which reframes the liberal subject as posthuman, post-individualistic, and "nomadic," is promising for the recomposition of communities, including racial and class coordinates. From Braidotti's (2013) perspective, if subjects (students) are ontologically polyvocal, then there can be a prioritization of an affirmative ethical principle of "not-One at the in-depth structures of our subjectivity by acknowledging the ties that bind us to multiple 'others' in a vital web of complex interrelations" (p. 100). Yet ultimately, Hasse's concerns echo those of sociologist Andreas Wimmer (2002), who cautions that in recent years, more energy has been invested into making explicit the fluid and ephemeral nature of cultural life than into explaining *why* it is so and *how* power inequalities (understood here as racial and class-based discourses) operate in these nebulous circumstances. In short, Hasse is arguing that in posthumanist learning, there will continue to be a need for analytical tools to explore power relations in the classroom and how they play out within "transversal subject assemblages" (Braidotti, 2018, p. 11) that include non-human actors (e.g., curriculum, technological media). Might the metahumanities bridge this gap?

## 3. Metahumanism and the Metahumanities

Both transhumanism and posthumanism strive to surpass dualistic anthropologies that view the human as consisting of material and immaterial aspects, but as Sorgner (2016/2020) explains, tension often exists between these movements due to their different terminologies (technical vs. metaphorical), modes of thought (linear vs. non-linear), philosophical traditions (evolutionary

and utilitarian vs. continental), methodologies (scientific vs. hermeneutic), and views of the posthuman (technologically enhanced vs. "we've always been posthuman" / materialist). Metahumanism offers a compromise and an alternative to these movements by acknowledging a need for pragmatic and technologically mediated progress as well as theoretical debates about the (post)human. On this latter point, Sorgner (2016/2020) describes metahumanism's relational image of the human as a "further development of the posthumanist [materialistic] concept of the posthuman" (p. 41) and as sharing terrain with neo-Spinozist thought. In del Val and Sorgner's (2011) "Metahumanist Manifesto," it's described in more detail as

> "deepen[ing] the view of the body as a field of relational forces in motion and of reality as [an] immanent embodied process of becoming which does not necessarily end up in defined forms or identities, but may unfold into endless amorphogenesis."

While not yet termed as the metahumanities, item nine of the Manifesto introduces one of its key aspects: "There is no need to distinguish between procedures of genetic enhancement and classical education." By *education*, Sorgner (2015) means "the general transmission of culture by parents, whereby culture is closely connected to an ideal of the good" (p. 33).

Sorgner and del Val admittedly hold slightly different views of metahumanism, with del Val (2021) directing more attention towards immanentism, and Sorgner towards the perspectival and dynamic nature of values due to his aim to bridge the gap between post- and transhumanism. Sorgner's emphasis on Nietzschean perspectivism is evident in his vision of the metahumanites. Its first two components, new forms of parental education, highlight the value of educative freedom via genetic analysis and enhancement (i.e., parents' genetic modification of their offspring according to a radical plurality of differing views of what types of enhancement are most beneficial to their child's development). His view of genetic and educational enhancement as structurally analogous processes underscores his support for the basic transhumanist value of using the latest technologies to promote human progress—an objective that he (Sorgner, 2016/2020, pp. 36-37), as well as Bostrom (2005) note as already being relevant in most cultures around the world. Simply put, they suggest that if intelligence is a widely held virtue, then the process of educational enhancement does not entail that current values are being abandoned. Rather, the idea is that "posthuman values can be our current values, albeit ones we have not yet clearly comprehended" (Bostrom 2005, p. 8). Revising evaluations of educational and genetic enhancement so that they are understood as analogous practices is such a shift in perception. Sorgner (2016/2020) argues that at this juncture, institutional recognition of these emerging and/or currently held technoprogressive ideals is crucial.

Yet American perspectives on educational achievement, while nuanced by a collective awareness of sociological factors like the vastly uneven distribution of wealth, cultural capital, and other social privileges, remain rooted in what the philosopher Michael Sandel (2007, p. 28) calls the *meritocratic faith*:

> We want to believe that success […] is something we earn, not something we inherit. Natural gifts, and the inspiration they inspire, embarrass the meritocratic faith; they cast doubt on the conviction that praise and rewards flow from effort alone. In the face of this embarrassment, we inflate the moral significance of effort and striving, and depreciate giftedness.

Mark E. Jonas and Douglas W. Yacek (2019) advise that it is on the question of educational equality and achievement that Nietzsche's philosophies can serve as a compelling dialectical counterpart, while at the same time providing pedagogical tools for those who take equality seriously. Democratic ideals inform our dedication to achieving as much equality as possible between students and striving to create conditions in which they can reach their full potential no

matter their experiences of socio-economic disadvantage. Yet these goals exist in a state of tension because if everyone is given the same opportunities to maximize their innate gifts, those with more and/or certain talents (e.g., those that are awarded more cultural prestige) will advance faster. They suggest that despite common consensus, Nietzsche (1874/1997) did value a *sort* of equality because he believed that cultural leaders ("philosophers, artists, and saints") would come from all socio-economic classes and be judged on the merits of their unique aesthetic contributions. On the other hand, Nietzsche believed that those who employ a rhetoric of equality are those who wish to draw others down due to their own feelings of inferiority, rather than to raise everyone up so they can realize their maximum potential. While they are not as skeptical as Nietzsche on this point, they suggest that our focus on the sociological and meritocratic faiths is excessive. From a sociological perspective, we focus too much on resources that *can* be distributed among students rather than on their innate gifts, and from a meritocratic perspective, we engage in optimism to the point of naiveté. "To deny [a student's] uniqueness is not only undemocratic, … but [it] actually undermines our ability to improve the situation of the least advantaged… [and] robs ourselves of important resources for combating inequality" (Jonas & Yacek, 2019, p. 18).

Nietzsche's emphasis on uniqueness and its flourishing correlates with Bostrom's (2005) suggestion that the transhumanist value placed on enhancement technologies is closely related to educational virtues we currently hold: individuality and "reaching for your dreams." They are simply those that we cannot see clearly due to their filtering through hegemonic meritocratic and sociological discourses.

The metahumanities third component, the academic posthumanities, represents the importance Sorgner (2016/2020) places on continuing theoretical conversations about the (post)human and directing these discourses into the public domain through the inclusion of non-dualistic insights in curriculum and pedagogy. Examples include bioart, epigenetics, avoidance of speciesism, evolutionary epistemology, and embodied theories of the mind. As with educational enhancement, the posthumanities are not meant to "disrupt" current modes of thinking by replacing the traditional humanities with a non-dualistic regime. The idea is that through supplementation of existing criteria with posthumanities lessons, the increasing prevalence of these ideals may come into focus. For instance, curriculum discussing an avoidance of speciesism and anthropocentrism draws attention to emerging observable practices, such as boycotting brands that perform animal testing, adherence to plant-based diets, and following various other "earth friendly" habits. Sorgner's approach intersects with Jonas and Yacek's (2019) suggestion to incorporate Nietzsche's doctrines in the classroom: perspectivism (a "pedagogy of perspectival empathy"), self-mastery ("embodied rational self-ordering"), courage (avoiding guaranteed learning outcomes), and the *agon* ("inspirational emulation").

Overall, the metahumanities will be hastened by shifts in mainstream perceptions about how biotechnologies and posthumanist theories often amplify rather than contravene common ideals and values. However, it is on the institutional level that the success of the metahumanities may be contingent upon a more definitive break with "long prevailing cultural structures, which are still strongly anchored but have lost their plausibility" (Sorgner, 2016/2020, p. 101). For example, del Val (2021) explains that while the focus of critical posthumanism on power matrices is necessary, it will also be insufficient for "the upcoming world of autonomous algorithms."

Is the university also an institution that will need to be jettisoned? If the academic posthumanities, which the metahumanities encompass, undo the liberal human subject upon which university learning has historically relied, does it entail the "end of [higher] education" (Herbrechter, 2018)? To what extent has dualistic thinking guided both the organization and the structure of the University within which posthumanist curriculum and pedagogies are likely to be most immediately situated? Can the metahumanities proceed within this environment?

## 4. The University

In cultural terms, the university can be described as a "specialized institution for the production, reproduction, and dissemination of intellectual capital" (Wernick, 2006, p. 557). By virtue of this function, which is combined with an educational one, the "university serves as a capital sector within education as a whole," is generally aligned with the economic and political powers on which its existence depends, and operates as a class institution.

Although Wernick suggests that much of the intellectual revival of Enlightenment era, including the flourishing of arts and letters, occurred within Royal Societies, professional academies, and salon societies rather than through universities, Spanos (2015) identifies the Enlightenment as one of three key historical moments in the evolution of the modern humanist university. First, he traces its cultural and structural roots back to this time, when Theologos became Anthropologos and Man rather than God became the measure of all things through a sort of "natural supernaturalism." This humanist secular ontology privileged the Word of Man at the expense of other senses, leading to an instrumentalist and panoptic perspective in relation to knowledge production—a perspective we see reflected in the synecdochical forms of classification developed by Carl Linnaeus and Jeremy Bentham. It is this anthropological-slash-panoptic disciplinary table, and its dualistic logic, that became the structural model for the humanist university. Here the assumption is that an indissoluble continuum of "being" is wasteful and threatening. As such, "it" must be reified, spatialized, and compartmentalized into schools, departments, and disciplines.

Analogously, Spanos argues that students and faculty must take their productive place as part of the larger whole as a way to regulate their potential volatility and guide the cultivation of their vocation—their service to the nation. It was in the 19th century, during the formulation of centralized state bureaucracies and within the context of biopolitics and capitalist industrialization, that several new emphases came to the fore: the importance of a college degree as a ticket into the professions and higher civil service, the professionalization of academia, and pressures pulling knowledge production down an instrumentalist path (Wernick, 2006).

Nietzsche disapproved of the latter of these trends as he observed it happening within the rapidly modernizing landscape of 19th century Prussia. His main criticism was not that more people shouldn't receive a public education (notwithstanding his intricate relationship with the concept of equality), but that he was doubtful that the state could be trusted to regulate an educational system that facilitated anything other than young people's utilization towards the fulfillment of its political and economic needs. So too for faculty. In *Schopenhauer as Educator* (1874/1997), he described the intelligentsia of the day as being mobilized by the state according to an instrumental rationality. In Nietzsche's view, the swift modernization occurring at the *fin de siècle* brought with it an assault against human creativity, privacy, leisure, and contemplativeness.

Spanos (2015) and Wernick (2006) therefore view the contemporary corporate university as being derivative of these political and economic tendencies, all of which became magnified—first during a phase of state subsidized expansion within the wider context of post-Fordist restructuring, Cold War tensions, and a demographic bulge during the 1960s and 1970s, and more recently during a period of "rationalization," which has been marked by market "branding" and fiscal pressures to increase teaching productivity and grow student enrollments. Although in the 1970s a de-centering of the West occurred through the growth of poststructuralist theory, Spanos (2015) argues that the potential of this moment to unsettle Anthropologos did not adequately extend out from the university to more worldly sites. In addition, further disciplinary specialization occurred, blocking solidarity among faculty and rendering them "useful and docile bodies" (Spanos, 2015, p. 26). Post September 11th, the nation-state oriented structure of the university became modified in a global direction. Structural changes have included:

adjunctification of faculty and curtailment of tenure, the elimination of programs deemed as no longer relevant in a global free market, the transformation of humanities departments (e.g., English) into so-called "service" departments, and a quantified concept of academic excellence. Spanos (2015) concludes that the 21st century university facilitates a mode of knowledge production that is "banal" and "renders thinking 'thoughtless'" because of its instrumentalist nature (p. 29) and that academic diversity has been reduced to a dedifferentiated body of consumers whose contemporary "vocation is to serve the totalizing logic of neoliberal capitalism" (p. 27). Although the organization of the university remains dualistic and humanist, a humanities education has become a "luxury" purchase that falls outside the realm of consideration for many students. Wernick (2006) cites growing economic rationality among students and a proliferation of vocational training programs as two additional reasons for this trend.

## 5. Institutional Culture

We can uncover this logic within the culture of higher education as well—particularly through its "language of learning" (Biesta, 2005). Biesta states that within this context, a university education may be understood as an economic exchange between a "provider" (the teacher, the institution) and a "consumer" (the student and/or the student's parents), and its guiding principles are value for money and the idea that educators and the institution should be held accountable to learners-slash-consumers due to the payment they are making—either directly through tuition or indirectly through taxation. This is a flawed logic, asserts Biesta, because while we can assume that *customers* know what they want and what their needs are, it forgets that a major reason for engaging in the higher education process is for students to go through a process of *discovering* what they want and need. In other words, education can only really begin when it is understood that outcomes cannot be ensured and that it is not a risk-free process. Fitzsimons (2001) concurs: "This type of education is not a creative venture, since [economic] rationality is the solution always – and already – supplied. Because the solution is available. …there is no 'life' in the system" (p. 151).

The norms implied through higher education's hegemonic "language of learning" are a very far cry from the experimental ethic that posthumanist educators promote, as well as from the importance that many transhumanists place on the cultivation of a questioning attitude and the exploration of unknown realms of value. Moreover, while transhumanists are often universally glossed as "techno-utopian," it could be argued that many are "techno-realist" relative to those who occupy positions of leadership in higher education and make administrative decisions largely based upon technoscientific market forces. Where the ideals of many transhumanists align with those expressed within 21st century university culture is that they both advance types of *liberalism*, an Enlightenment philosophy that views authenticity and the common good as foremost deriving from whatever autonomous individuals choose as most worthy for themselves. However, whereas the liberalism of the contemporary university promotes the ideal of educational enhancement through a rhetoric of consumer choice, that of transhumanists advocates for individuals' right to educational enhancement through biotechnologies that increase healthspan, longevity, emotional experience, and intelligence (Bostrom, 2005; Sorgner, 2009).

## 6. Universities of the Future

Is the university simply too organizationally and philosophically incompatible with the posthumanities to house them going forward? Will higher education be malleable enough to accommodate educationally enhanced student populations who hold a dynamic view of values and regard themselves as immanent embodied process of becoming?

Neither Wernick (2006) nor Braidotti (2013) dispense with the university as a cultural institution, and they foresee its next era as being driven by globalization and cybernation. Wernick predicts that the hitherto detachment of scholarship and research networks from college institutions will smooth the passage of *universitas* into this new era. Organizationally and in every other way, however, Braidotti outlines a rapidly approaching sea change in the university: the "global multi-versity." While it will include a continuation of the softening of disciplinary boundaries and a rearticulation of the humanities with the sciences, information technology, and other fields—an occurrence that Braidotti (2013) suggests is "less of a theoretical than an administrative crisis" (p. 177) since most scholars are well-aware that disciplinary boundaries are not incontrovertible entities but historical and discursive creations—it will represent a new entity in terms of the negligible role it plays in relation to citizen formation. Campuses will become "virtual and hence global by definition," yet they will also become embedded into local urban environments ("smart" city spaces) in a radically new manner that will initiate novel interactions between academic and civic spaces, an "ethos of communal intelligence," and an obsolescence of the transcendent values (e.g., objective truth, linear thinking) that have defined the western rationalist tradition and the classical humanities. With the university operating as a "hub of both localized knowledge production and a global transmission of cognitive data," (Braidotti, 2013, p. 179), its institutional frame can actualize a posthuman practice that "assumes accountability for the conditions that define our location" (Braidotti, 2013, p. 178).

Braidotti is upfront that this next epoch in higher education will require "conceptual creativity and intellectual courage to rise to the occasion" as well as pragmatism—three virtues that Nietzsche and transhumanists advance (Sorgner, 2009). However, her writings on the critical posthumanities and cognitive capitalism do not delve into the "instrumentalization of the person"—when a person is used as a means to an end—and how its dissimilar conceptualization by transhumanists and critical theorists transfers into conversations about its moral evaluation within the educational realm. In a society in which dissemination of knowledge and decentralized intelligence will increasingly become driving forces of the economy and the modus operandi of the global multi-versity, to what extent can education be understood as a form of freedom? If it is true that economic rationality has captured higher education, then what beliefs and values will inform parents' decisions about the types of education and enhancement that are for their children's good? Could the wide-ranging notions of "the good" of which Bostrom (2005) and Sorgner (2015, 2020) speak become truncated by (and tethered to) a new cognitive form of capitalist ideology?

## 7. Cognitive Capitalism and Educational Enhancement

During the ramping up of industrial capitalism, Nietzsche decried, "What the 'higher schools' of Germany in fact achieve is a brutal breaking-in [of]… numberless young men fit to be… utilized to the full and used up, in the state service" (Nietzsche, 1968/1901, p. 75), and "The scholarly classes are no longer lighthouses or refuges in the middle of all this agitation and worldliness; they become daily more restless, thoughtless, and loveless. Everything serves the coming barbarism," (Nietzsche, 1874 /1997, p. 4). As the story goes, the 19th century university laid down the path for knowledge production to proceed along an instrumentalist course, according to which the intellectual labor of those now studying and working in the 21st century information economy operates as a form of exploitation. But is this accurate?

The capitalism of Nietzsche's time, which was based upon the accumulation of physical capital and the driving role of the factory in the mass production of standardized goods, is now being replaced by a new post-industrial model, in which knowledge is the primary object of accumulation and basic source of value, and its dissemination is the driving role of the economy. According to Moulier-Boutang (2011), within this globalized and "beyond human" system, the

inventive force of active networks of brains operating in tandem with computers is being exploited. Because such activity never ceases and has creative phases that are unpredictable and cannot be consigned to a particular time or place, its actors are particularly vulnerable to being taken advantage of through spatial and institutional forms that allow for knowledge to be captured from modes other than traditional wage labor. He coins this system "cognitive capitalism." By invoking the metaphor of honeybees, Moulier-Boutang explains the polycentric nature of this exploitation as follows: while the ruling class of contemporary knowledge society has figured out how to capture the productive labor of its worker bees when they make "honey," its current aim is to better extract their efforts at "pollination"—the connective, creative, autonomous, and responsive activities upon which the production of information blossoms. "What a company is worth is now determined outside of its walls" and "outside the scope of the classic working day," (Moulier-Boutang, 2011, p.164), so we cannot persist in thinking that this new capitalism is only interested in the *honey* of the bees—a relic of academic Marxism that he regards as showing a "worrying backwardness" in an era of biotechnology (Moulier-Boutang, 2011, p. 165). Universities and their offshoots (e.g., research laboratories and non-profits) carry "the same intensity and importance as big businesses" (Moulier-Boutang, 2011, p. 151) because of the decentralized exploitation of their unofficial fruits.

## 8. Transhumanists and Critical Theorists on Instrumentalization

If, as Moulier-Boutang (2011) argues, information is a game running on the capitalist motivations of *libido sciendi* (a "desire to learn") and *libido dominandi* (a "desire to dominate") (p. 76), then the notion that *scientia potentia est* ("knowledge is power") comes with some significant strings attached. For in this case, knowledge, intelligence, and creative thought—the very attributes through which individual freedom is supposed to flow according to the traditional wisdom of liberalism—are being hijacked by a new type of cognitively-oriented capitalist system. It further throws into scrutiny the university's "language of learning" because it brings up for consideration that even the "secondary" (i.e., non-credentialed) fruits of higher learning are being extracted for profit. From this critical perspective, instrumental domination is occurring because human intelligence (whether garnered through enhancement technologies or not) is being used by a technocratic elite mostly as a means to an end—profit maximization outside of the bounds of traditional wage labor.

If these indictments are understood along the lines of instrumentalization, then it seems they are based upon an ontological distinction between persons and things, and the moral evaluations that follow from it:

> Persons have autonomy, and hence dignity, which implies that no finite value can be attributed to them. Things, on the one hand, can have a merely finite value, which is the reason why they can be treated solely as a means. (Sorgner, 2015, p. 40)

If this dualistic ontology was revised, would the intelligence and innovative thinking of individuals caught in "pollen society" no longer count, in Nietzsche's words, as "being utilized to the full and used up"? It's a crucial question—perhaps *the* crucial question upon which the progression of the metahumanities' parental education will hinge. First it is important to point out that Moulier-Boutang (2011) speaks of cognitive capitalism as a "beyond human" system of exploitation—one that is based upon brain-computer networks. This implies a posthumanist view of the relationship of humans to technology, albeit one that includes the assessment that *both humans and machines* are being exploited. Second, in light of the work of Nietzsche, Darwin, and other post- and transhumanists who view humans as being different from other beings by degree rather than category, Sorgner (2015) concludes that today it might be more plausible to hold this

sort of view than a Kantian one, and as a result, treating a person as a means would not *necessarily* be problematic. Yet, he also stresses that it would be questionable for the foundational law of liberal democracies to suddenly become based on an ontology that *doesn't* distinguish between persons and things because inevitably, if lines are drawn that differentiate between morally legitimate and illegitimate kinds of instrumentalization, they will raise even more fundamental questions about morality itself. He proposes that the ontological neutrality of the state might be preferable, thus bypassing moralistic intrusions into individuals' decision-making. In lieu of this, a political norm of negative freedom would continue to be stressed.

It is important to mention that Sorgner's discussion of instrumentalization is largely a refutation of Jürgen Habermas's position that educational and genetic enhancement are *not* parallel processes. As I have detailed above, Sorgner's conceptualization of education is a cultural and heteronomous enhancement process initiated by *parents*, rather than a top-down method of socialization or large-scale program of enhancement operated through public educational institutions. He is clear, "It is never a case of genetic enhancement if the state or a government decides what ought to be done with people" (2015, p. 34). Therefore, it would be incorrect to simply "copy and paste" Sorgner's ontological and moral argumentation about "the (non)instrumentalization of the child" from a parental context into one of impersonal and instrumental domination over an adult's intellectual creativity through corporate bureaucracy and a cognitive capitalist superstructure.

## 9. Conclusion

In the not too distant future, attention will need to be steered towards ethnographic explorations of how cultural and class differences guide parental decision-making about educational enhancement within global cognitive capitalism. Based on ethnographic fieldwork, Annette Lareau (2003) has written at length about the disparate beliefs that poor, working, and middle-class parents in America hold about their children's education and the role they should play in it. While middle-class parents frequently engage in "concerted cultivation" of their children's talents and feel that it is their shared responsibility (with teachers) to help their children reach educational landmarks, poor and working-class parents more often believe that responsibility for their children's educational success falls solely onto teachers' shoulders. Lareau describes parents of lower socio-economic statuses as adhering more to "accomplishment of natural growth," meaning that they regard their children's development as spontaneously unfolding at its own pace. Moreover, forms of embodied and objectified cultural capital acquired by upper- and middle-class children outside of the school environment (e.g., learning to play the violin, the investment of parental time and money (represented by the violin itself)) can easily become institutionalized through their legitimization in the classroom, especially due to the closer alignment of these parents' expectations and values with those of teachers and institutional authority figures. Addressing concerns that in a *literal* sense, genetic enhancement could become another form of embodied cultural capital that reproduces social inequalities both in and outside of the classroom, will be imperative going forward.

Sorgner (2016/2020) writes that the "Gattaca Argument"—bioethical concerns that enhancement technologies will lead to further global divisions between the "gene-rich" and "gene-poor"—is not necessarily a threat because like vaccinations, these biotechnologies could be made universally accessible and voluntary, and like smartphones, they could quickly become affordable to the many rather than the few. I agree that going forward, certain economic motivations are likely to be a powerful factor in personal decision-making about enhancement technologies, but in light of recent state lottery-based incentives that aimed (and failed) to boost rates of vaccination for a free and universally available COVID-19 shot (Walkey et al., 2021),

ethnographically understanding varied cultural perceptions on biotechnological enhancements will need to remain a point of granular data collection.

The degree to which nuclear family rhetoric reflects the daily lives of many American families is a factor to consider too. Downplaying or excluding the role of the extended family within discussions of child socialization and education is risky, particularly when it comes to adequately assessing the experiences of single-parents and women-led families who are disadvantaged by intersecting inequalities (Sarkisian & Gerstel, 2012). Another perspective is provided by Harrington (2021), who argues that while emerging developments in biotechnology advance the cause of individual bodily enhancement, they are likely to pose greater challenges to women, for whom the notion of freedom has generally been ambivalent. "Gestating and caring for children is a state of radical interdependence. And… those women who long to be entirely liberated from such interdependence are a minority, and likely always have been."

On a global scale, it will also be of importance to continue to ask questions about the diversity of culturally embedded perspectives that exist about what counts as intelligence and the range of conditions (biotechnological, sociocultural, legal) under which its development is sanctioned. Recent studies by Pew Research report that both in America and globally, there is a generally negative view on the use of gene editing technologies to make a baby more intelligent, with an overall perception that this would be a misuse of technology and taking things too far. The majority of respondents in the American survey anticipate that the widespread use of such technologies will have more negative than positive effects on society, with 58% reporting concerns that it will lead to *increased social inequality* and only two in ten Americans saying it's very likely that these developments will benefit society as a whole (Funk & Hefferon, 2018). The global survey reveals some fascinating results from India however, with over 60% of this country's respondents regarding it as appropriate use of gene editing technology to make a baby more intelligent (Funk, et al., 2020). While this study does not include information about the respondents' income levels, extreme (and growing) levels of economic inequality in India (Yang, 2020) make these results especially noteworthy with regard to ongoing conversations about education, enhancement, and class division.

Only time will tell what it means to safeguard educational equality within the upcoming global context of genetic enhancement and what it means to educate well in a cognitive capitalist world. It is inevitable that social science discourses will need to grow to consider these questions from "beyond human" perspectives. Within this reformulation, approaching education, intelligence, and academic achievement as nomadic processes rather than individualistic acquisitions will help us along the way.

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