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AI, digitalization, and the emergence of man3: From enfleshment to disembodiment?

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Abstract

This paper conceives of the structural injustices of modernity as grounded in a Euro-centric, humanist subject overrepresenting universal manhood (Sylvia Wynter's "Man") and engages with the question of moving from enfleshment to disembodiment in post-digital, AI-empowered contexts. Noting that digital technology relies on non-semantic "representation" tied to probability, i.e., binary digits, this paper explores how the sliding signifier of "intelligence," an indicator of Man once incarnated in terms of moral capacities and phenotype/genotype, has been and is being newly enfleshed through the mutual formation of a "representation"-technology intertwinement. It illustrates that, first, to understand familiar institutional injustices related to Man, it is vital to pay attention to the multiple transitions of Man (to Man1, Man2, and man3). The paper maps these historical shifts in relation to Wynter's analytics, the shifting inscriptions of enfleshment and intelligence, and the implications of such onto-epistemological gradients and reformulations within compulsory schooling's histories. Second, the paper focuses especially on the digitally decentered emergence of man3, where "intelligence" is realized, particularly by AI, as flows of digits that attempt to invent, measure, and effectuate sets of emotions "universal" to all human beings. Here we offer three examples in AIEd of how the figure of Man remains operational despite an apparent disembodiment. Last, we consider the questions this leaves education in general and curriculum studies specifically with, when the seeming disembodiment occurring via binary digits does not lead to the eradication of discriminations once associated with semantic "representation." Rather, enfleshment-as-information and as Life, and the emotional turn of AI, remain embedded in and contribute to a complex "representation"-technology intertwinement that is complexifying historical forms of enfleshing Man, and producing no less exclusion and violence than historical -isms have done.

Keywords

Intelligence, Man, enfleshment, disembodiment, artificial intelligence (AI), digits.

Introduction

The 1950s and 1960s in an area now known as the United States are recognized within and beyond domestic politics for the necessary and vital upswing in social protests formulated around the quest for equality, justice, freedom, and the need for nonviolent relationships in a post-atomic world. Leading that process were (ongoing) Civil Rights movements, reporting centuries of murder, torture and bloodshed inflicted upon African American communities and building upon already-enacted protests focused on the problems of White power and systemic racism. This upswing opened the door for a variety of other movements that re-crystallized or were given new platforms, building upon long histories of protest, as well as public and private wars. AIM, second wave feminisms, environmental justice movements, Vietnam War protests, LGBTQIA+ based rights protests, disability rights, immigration reform, linguistic human rights, and more, also gained greater visibility in the wake of what Civil Rights movements enabled.

While Civil Rights movements put domestic torture on the table and received some air time on television (replete with the prejudices inherent in White reporting and media), not all such protests or movements shared the same aims born of "settler society" politics, including indigenous societies which had endured multifarious forms of torture and genocidal and assimilationist policies for centuries (Tuck & Yang, 2012; Weheliye, 2014). Wang (2022) notes the importance of honoring the ir/reconcilability among protests and rights-based movements which necessarily had different aims based on different experiences and therefore a variety of points and counterpoints embedded within and between such movements. Amid 1960s second wave feminism, for instance women of color and women not based in the US insisted on targeting the threat to life that male violence posed across nations, communities, religions, first languages, and families, while the dismantling of racism in Civil Rights targeted White power, including White women. Different movements thus relied on different definitions of freedom and justice and/or did not conceive protest in terms of Western statehood and "the nation-state type of organization" (i.e., was freedom the same as having sovereignty over traditional lands?) (Miller, 2008). While different aims existed and different venues had to be engaged, securing the basic right to live was a fundamental priority, and how to address that and remain living amid the backlash a continuous reality – a threat that has not magically disappeared. Along these lines, Walcott (2021) notes amid the calling into question of colonizing and statist authorities,

that the emancipation of African Americans from slavery and colonization has not yet dismantled the humanism that initially staged dehumanization and that a White supremacist "freedom" must be contested through expressive culture. Taliaferro Baszile (2015) has further challenged the essentialization and universalization of "democracy" based on multiple rationalities (e.g., legal, scientific, and neoliberal) and calls for critical race counterstorytelling as a political strategy to practice a different kind of democracy for a more equitable society. The mid-20th century decades remain renowned and (sometimes) remembered, then, for this collective but not homogenized calling out of power relations, legislation, and changing of expectations regarding what a democracy was, what freedom was, what nationhood was, and who these formats of living were really for.

Parallel to such social protests was another stream of events, the emergence of new technologies developed around electrical, digital, and binary logics, inspired by military research just prior to and during WWII, involving the development of weaponry such as the atom bomb and computing such as the emergence of artificial intelligence (AI). The decades following WWII have more recently became renowned, then, for such revolutionary technologies in the everyday sense. The Macy conferences, are taken as the historical coining and marker of artificial intelligence's emergence in popular consciousness, as well as what Margaret Mead referred to at the time as "the cybernetics of cybernetics." Focused on developing an automated system that could achieve what "a reasonably logical human" could do, the early artificial intelligence efforts at fostering whole-body emulation were soon dropped for more task- and skill-specific innovations (Tegmark, 2017). Together, the atom bomb which could potentially eradicate much of the human and more-than-human life forms on the planet, and AI which could potentially undermine 'the human's' and more-than-human's claims to organic uniqueness signal a vastly changed orientation to being. The impacts of these technologies on what is now thought of as "social life" and life on planet earth are extensive and complex, as depicted in the conversation between Niels Bohr and Robert Oppenheimer in the film *Oppenheimer*: "This [the atomic bomb] is not just a new weapon, it is a new world" (Nolan, 2023).

Today in education, there is still a kernel of these older dividing lines: the protests peaking in the '50s and '60s are seen as "social," as having led to new educational reforms such as multicultural education, decolonization, and indigenous otherways education, the Reconceptualization in curriculum studies, feminist pedagogy, queer pedagogy, eco-pedagogy, bilingual education, inclusive education, and more recently abolitionist pedagogy, to name a few, while the WWII streams such as Macy's point toward something seemingly "technical" investments, to educational technologies, digital media education, gaming, and children and youth's new affection

for chatbots, robotics, and generative AI. While the latter has already raised the question of robot's rights, these discussions are just the beginning of efforts to see these historical pivot points of the '50s and '60s as inherently related rather than the division of a *socio* and a *technium*, or at least to see the consequences of systems such as racism, sexism, ableism and more, as inherent within the development of systems such as cybernetics and new technologies (Benjamin, 2019).

Wynter (2003) notes that at a particular juncture that involved the invention of race and the spread of empires 500 years ago, all the historical -isms that forged systemic discrimination related to humanisms were predicated on judgements about appearance/behavior and phenotype-based judgements – what she terms *flesh*. A colonialism-racialization-modernity vortex redesigned the planet into land-based nation-states over a 500-year period that is ongoing (Wynter, 2003). In the streams and beginnings of AI, however, one might argue that a drift toward fleshlessness, an apparent disembodiment, is becoming more evident, several decades into the 21st century and outside of popular science fiction. Where oppressive systems are operating both as immediate forms of judgement around enfleshment as appearance and phenotype *and* beyond historical markers of enfleshment as surfaces, how is the "beyond" recognized and addressed? What happens to "representation" in the era of the algorithm and where might the previous logics dedicated to maintaining "superiority effects" now reside?

This paper examines the apparent "beyond" conceptually and through concrete examples of AI in education (AIEd). It considers the conditions of possibility for a seeming drift, arguing that claims to contemporary "disembodiment" are but a complexification of historical forms of "enfleshment," where *flesh* has extended beyond allegedly inborn biological traits and the automaticity of reflexes to systems capable of receiving, storing, and processing information to control "themselves." Built on our previous study that delineates the shift of "intelligence" from reason-as-morality to concepts of natural intelligence to a substrate-independent, emotion-driven superintelligence (Bostrom, 2014; Baker & Wang, 2020; Baker et al., 2023), we trace here the mutual formation of the sliding signifier of "intelligence" and different kinds of "enfleshment" and what happens with the eventuation of AI amid a "representation"-technology entwinement. We see the *socio* and *technium* processes that operate today, like stories about the 1950s and '60s, as more braided streams that while dependent upon "each" for definition are constantly mutating in a dynamic weave. The recognition of "disembodiment" as a set of "enfleshments" woven together highlights the fact that historical insults and injuries and the unique forms of privilege inscribed upon certain kinds of appearances/behavior and phenotypes won't simply vanish upon

the informatization and datafication of life. Rather, they can be repeated and reinvented in unforeseen, tricky, and potentially dangerous ways.

To fill out this broad arc of our argument, first, we outline Sylvia Wynter's histography of the humanist subject, which overrepresents itself for universal manhood (capitalized Man), in order to understand the politics and ethics of "representation"-technology entwinements. We introduce Wynter's profiling of Man with its two transitional points: from Man as Christian to Man as political (Man1), and Man as bio-economic (Man2) (Wynter, 2003, 1995). Here, we discuss the shifting inscriptions of enfleshment as they relate to mind and intelligence theories (enfleshment-as-moral-capacity, as phenotype/genotype, as "invisible psychological construct, and as information formatted as epigenetic effects and (binary) digits. Second, we consider the implications of the Wynterian foundational figures of Man, overlapping and not so chronologically or practically discrete, for the uneven effects of compulsory schooling's emergence in the US. Third, we suggest that the 20th century spawned a new figure, an emerging man3 (a deliberate small "m") which we have discussed elsewhere (Baker, et al, 2023). Nascent man3 starts to come more fully into focus during the 1930s via preceding theories of the unconscious, behaviorism-as-reflex-arc, structuralism, quantum physics, and the Turing machine. We suggest that through the 1950s and beyond, man3 becomes characterized by a new computational superintelligence that extends the decentering of capital M "Man" and expands this to challenging Man's primacy. This later move trades on the importance of a narrow and provincial range of emotions in programming. That is, as a technology embedded within the movement of the sliding signifier "intelligence," AI pushes the boundaries of enfleshing "intelligence" via the coding and programming of a "universal" set of emotions. This contributes to and expands the transition of Man's decentering to a nascent man3. Fourth, we examine the politics of man3, especially through three examples of AIEd where onto-epistemological issues in regard to man3 arise, showing how systems of oppression are being (re)mapped through the changing dynamics of "representation"-technology. Last, we conclude with a call to educators to critically engage and evaluate the dynamic and complex riffs in a *socio-technium* when AI interfaces with education. We suggest that the historical forms of claiming "intelligence" as a separator and of enfleshing Man have not resulted in a clear cut so-called contemporary "disembodiment." Rather, narrating being has now become a project of managing earlier and newer forms of decentering alongside the expectation of responsibilization and personhood-crafting, of managing the (machinic) expansion and multiplication of forces, energies, and influences that can (re)constitute *flesh*, "self" and "mind," and that like colonialism's spread, still entails the imperative of control. This so-called pressure toward "superintelligence," of enfleshment-as-information, thereby requires more incisive and specific investigation into what might present as possibilities, limits,

repetitions, and challenges for the field of education in regard to the figure of Man and especially in regard to the ethics of captive audiences who have been made available via compulsory schooling.

The figure of Man and its politics: Man1, Man2, and Man3

Sylvia Wynter offers an insightful explanation of the structural problems in "Western" societies in relation to the humanist subject, Man. She historicizes the "descriptive statements" of humanness, which set Man as the "Western European population *referent-we* [emphasis original]" (Wynter and McKittrick, 2015, p. 24). Before Europe's so-called "discovery" of the New World in 1492, the binary code applied to the concept, human, is clergy/laymen. From the late 15th to 18th century, humanness is secularized and naturalized so that the transition from religious society to modern nation-state and the launch of modern sciences could be made possible.

Wynter separates these moves out with her now iconic notation. She refers to "the human" epitomized as Man1 as emerging when: "…the new order of adaptive truth [of the West's own self-conception]…had begun to be put in place with the rise to hegemony of the modern state, based on the new descriptive statement of the human, Man, as primarily a political subject" and "a lawlike part of the systemic representational shift…[was] made out of the order of discourse that had been elaborated on the basis of the Judeo-Christian Spirit/Flesh organizing principle…to the new rational/irrational organizing principle and master code" (Wynter, 2003, p. 300). In other words, according to Wynter, the concept of Man1 arose when the "West" began talking about the distinction between a "full" human and its Others based on the binary of "rationality/irrationality" instead of primarily relying on the Judeo-Christian ideas of Spirit and Flesh.

From the 19th century to present-day contexts, "the human" is further framed within the paradigm of evolution, especially that of Darwinian evolutionary biology, which took form in "the wider context of the intellectual revolution of Liberal or economic (rather than civic) political humanism … from the end of the eighteenth century onwards by the intellectuals of the bourgeoisie" (p. 322), like Adam Smith. Here, humanity is rewritten as of "differential degrees of evolutionary selectedness/eugenicity and/or dysselectedness/dysgenicity" (p. 316), as "biological," and as having differential degrees of rational self-interest and economic competitiveness. Wynter refers to this iteration as Man2, claiming that it is Man1, Man2, colonialism, the invention of race, and the narrative of a secularized Christianity spreading its empire weaving together that newly function as the "descriptive

statements" of Man. Man2 continues, then, to overrepresent for other available "genres" of humanness: "…as Christian [Man] becomes Man1 (as a political subject), then as Man1 becomes Man2 (as a bio-economic subject), from the end of the eighteenth century onwards, each of these new descriptive statements will nevertheless remain inscribed within the framework of a specific secularizing reformulation of that matrix Judeo-Christian Grand Narrative" (p. 318). To put it succinctly, Wynter argues that the rise of Man1 and Man2 does not bring existing ontologizing gradients to an abrupt halt but further complexifies them.

The predominance of the "descriptive statements" of Man and their spread has consequences. Fitzpatrick argues, for instance, that "All the colonialized darker-skinned natives of the world and the darker-skinned poorer European people themselves" (Fitzpatrick, 1992, as cited in Ferreira da Silva, 2015, pp. 94–95) are put onto a scale, depending on how successfully people are judged by colonizers as having "evolved" towards Man. "Levels" are formulated and "appropriate" levels are designated in a political, biological, and economic hierarchy where a narrow range within Man becomes the Norm. Imperial expansion and colonial violence become on this basis rationalized, as those positioned as non/less-than-humans are placed, at best, as though in need of salvation, and at worse, as though in need of suppression or genocidal and eugenic eradication. Being posited as "Other" lies "within" the system of descriptive statements, menacing Man's supposed supremacy and "order" and thereby establishing further bases for both the presumption of "superiority effects" and massacre.

In the late 20th century, with the rise of cybernetics, systems theory, and information technology, the figure of Man, together with its politics, has been undergoing dramatic reconfiguration. In fact, Wynter (2015) has already incorporated cybernetics in her account of changing genres of human nature, where human beings are now considered autopoietic systems of the neurological (atoms)-rhetorical (information) hybrid. Our previous study (Baker et al., 2023) extends beyond Wynter's reference to cybernetics and proposes the transition of Man towards a digitally decentered subject (thus a small "m") capable of measuring, interpreting, and expressing a select set of emotions, which we name as a nascent man3. It is important to note that the advent of Man1, Man2, and man3 are not mutually exclusive forms of subject-making but are woven together, enabling various forms of oppression and privilege in complex and unexpected ways. In the following section, we survey the institutional problems persistent in education and compulsory school settings with respect to the figures of Man.

Education and compulsory school settings: Setting the stage for different ideas about "intelligence" and enfleshment.

"The history of modernity and of modern disciplinary knowledge," Lowe and Manjapra (2019) hold, "are…a history of modern European forms monopolizing the definition of the human and placing other variations at a distance from the human" (p. 23). As the "gene" of modern disciplines in the humanities, Man drafts the starting point, life trajectories, and fatal problems of these disciplines. This is why in Lorde's formulation, the institutional inequalities attributed to gender could not be tackled by "difference of race, sexuality, class and age," for "only the most narrow parameters of change are possible and allowable" when "the tools of a racist patriarchy are used to examine the fruits of that same patriarchy" (Lorde, 1984/2007, p. 110). Or, in Wynter's (2006) follow-up, the "master's tools," such as notions of race, gender, and sexuality, will never dismantle the "master's house," Man. She states, "I am trying to insist that 'race' is really a code-word for 'genre.' Our issue is not the issue of 'race.' Our issue is the issue of the genre of 'Man.' It is the issue of the 'genre' of 'Man' that causes all the '-isms'" (p. 24). Here, Wynter proposes adopting a historical perspective on the structural inequalities of modernity, often referred to as various "-isms," which entails exploring the onto-epistemological conditions that contribute to the emergence of these "-isms."

Modern education is amongst the disciplines in which "human beings" endeavor to understand a world of "human experience" through the work of "human minds." In this humanist mode, education has focused almost exclusively, until recently, on sociologically and psychologically inspired renditions of Man as human-to-human relations and critiques of human-to-human relations still indebted to the master's tools. Within this focus, the battles for the subjectivation of children and youth are staged and narrated, giving shape to what is then seen as unique about the profession of teaching. For example, while multiple fields and professions are shaped by the vested interests of multifarious stakeholders, in education the "clients" typically remain for over a decade in a system of relationships and knowledge production/transmission that is controlled locally and nationally. In addition to these controls, an educational system operates with particularity, through the individuation of "docile bodies" situated both within formal classroom settings and in instructional scenarios beyond them (Foucault, 1995; Malabou, 2019). From students to parents, to teachers, from corporations to non-profits and wider, ill-defined communities, from district to state, national and global levels, the input remains variegated, the effects lifelong, and the stakes high regarding subjectivity-formation.

In its compulsory variation especially and amidst a kind of developmentalist humanism born of Man2, the youth factor also marks education's distinction, as both a self-evident and potent contextual shaper. For example, the "genres" about education often note that it is focused intensely on minors who in democracies have no right yet to

vote and who are compelled by law to attend, changing the daily conditions of what the teaching workforce experiences relative to other professions. It also changes what kinds of research are permitted upon a captive audience, with classroom-based settings being subjected to unique human-subject conditions and with school districts and individual schools taking increasingly greater control over what they permit and enable in terms of study within such sites. Teaching is also narrated in humanist vein: compulsory school settings require a high degree of ongoing affective labor by teachers and that is often not recognized by those who have never tried it fulltime and that contributes in many countries to burnout and high turnover. Teachers work with the largest number of people per week of all the professions, in daily interfaces with different subsets of students, and in terms of year-long and sometimes multi-year relationships. This is distinctly different from one-off interactions between an adult client meeting a professional for specialized service or contracts. In teaching in a human-to-human world, the engagement with students is holistic, with a large number of individuals assigned to a teacher's daily care, and with the teacher typically charged with *in loco parentis* responsibilities for each individual - a child to adult ratio that far exceeds the average family size but places similar responsibilities on its head. Last in terms of available genres that humanism's have spawned, 'the teacher' is not a generic subject but patterns are considered to exist. In contexts such as the United States the racial and ethnic composition of the teaching workforce is not reflective of the national population being taught with the vast majority of teachers hailing from white, monolingual, Christocentric, and cis-gender backgrounds.

What can be narrated and experienced then fundamentally relies on the presumptions of humanism and its ontologizing gradients. The populational, administrative, and juridical structures, in turn, require continuous navigation within and beyond compulsory schooling. In terms of within, at a minimum, educational experience is often narrated and shaped by large group, small group, and one-on-one interactions which occur across a day, a week, a year, and across different modalities and technologies. Moreover, such navigations in compulsory school-based pedagogy typically occur in indoor settings, in a context that is nonetheless dynamic in behavioral terms, and that does not resemble individual office-based consultations such as in medicine and law or outdoor settings that are not dedicated to 'Western' presuppositions about what counts as knowledge. In its massified incarnation, 'formal,' building-based education has become especially focused on examination outcomes that sort and filter, reproducing the prejudices and divisions codified in the figure of Man, impacting students' present and future lives differently, and thereby spawning a different kind of performance review and assessment of proficiency of teachers and principals. In conjunction, these variables and the critique of them – the multiplicity of stakeholders, variety of sociocultural contexts, populational dissensus and division,

juridical parameters, ongoing affective tasks, and changing societal and institutional expectations placed upon teachers, staff, and principals – are both constituted by and as the master's tools of humanism, making for a very complex, multifaceted and unique site that has not provided a stable, even, just, or contestation-free landing pad for ideas about "intelligence" or for the development, implementation, and evaluation of AI.

In the next section, we will follow the arc delineated by our previous work (Baker et al., 2023) and enrich the conceptual landscape of "intelligence" by exploring strategies of historical enfleshment, especially in relation to the power dynamics that Man has spawned within the field of education.

A genealogy of the enfleshment of "intelligence"

Mass, compulsory schooling, tied initially to religious doxology and to the sovereignty assumed by the introduction of the nation-state via colonialism, relied on the figure of Man as capable of and/or possessing something called *reason* as a defining speciesist feature (Wolfe, 2003). Weheliye (2014) elaborates on this suture between Man and reason as having gradations in the form of those considered to be the full human, lesser than human, and unhuman, a gradient that was used to justify and launch the violences of differently targeted genocides such as transcontinental indigenous murder, the Middle Passage and slavery in the New World, and the Holocaust. What such broad-visioned analyses of historical massacres and the spatializations inherent to "the subject" reveal is that projects of mass governance have not been divorced from the "academic" debates over things such as humanism's figure of Man and its spectra, the psychologies of mind/body propounded through various movements dedicated to reason's unfoldment or development, and the invention of new technologies such as AI.

Reason as the bio-theological hybrid: Enfleshment-as-moral-capacities

With the rise of Man1 in what is now called Europe, reason is unfolded into "reason-as-morality," reflecting and effectuating the conflicts and compromises between Christian humanism and secular humanism. Amid the Protestant Reformation, the "Scientific Revolution," and the projects of colonialism, the focus on the well-being of a narrow range of populations today coded as privileged forms of whiteness and delimited within, was systematized. Faculties thought unique to "full humans" for "understanding" things were referred to as "capacities" and "powers" and the ones subsequently referred to as intellectual powers were initially positioned as a vague pathway or subset of moral decision-making. On the one hand, reason was incarnated as though a "natural," inborn attribute that became fully functional as boys of the bourgeoisie and royalty matured. On the other hand, reason exists in order to discern between impulses that the elite would find it "gentlemanly" to honor and those it

would not. It is thus inscribed fundamentally as a faculty given for a moral, not a "cognitive," purpose, a category attributed to the soul, which was thought to belong to an omniscient God. As Locke's (1892/1693) work indicates, since the onset of "modernity," whatever could be parsed out as vague "intellectual qualities" were to be ultimately judged as moral qualities, allied to "rational" deliberation and decision-making within a Christocentric social contract.

The rise of surface-depth relations: Enfleshment-as-phenotype/genotype and the scientization of "intelligence"

The 1700s witnessed heated debates over the role of Nature in the determination of human beings. Was Nature to be seen as the organizing principle of every single thing, or was it akin to environment, something exterior to the human subject, like something we visit and look at outside of ourselves (Morton, 2007)? These debates pushed forward a putatively harder line between the moral and intellectual and brought to the forefront issues like spirit/matter distinctions and what counts as artificial, as human-made, as environmental, etc. They also had major ramifications for pedagogy. If Nature was the organizing principle of everything, then it was possible to conceive of moral/intellectual "capacities" as at least partly inborn or seeded in the infant. If not, then much more premium would be placed on the activities that the infant experiences and on the environment as shaper of subjectivity as a "full human."

As compulsory attendance laws spread across the 1800s in Europe and through invasion and empire-building in the so-called colonies, debates over the origins of "differences between men" as F. J. Gall (1835) called it, became a site of fascination. Across the 19th century, "differences between men" eventually became crystallized and reduced along two predominant axes: assumptions about phenotype bespeaking a hidden depth and efforts to identify the causes of particular talents, capacities, skills, or propensities that were thought unique to human being, eventually coded as genetic. Phrenology and mental measurement movements in particular traded on beliefs about an outer level, the appearance of skin, the cranium's bumps, etc., and the assumption of the "seed" within, attempting to scientize and make reliable the move from head-squeezing to identification of future talents or criminality. Such debates have a longer history than European colonialism or formal, compulsory education and it is beyond the remit of this paper to recount them (see Baker, 2013). What is crucial in this "lineage," however, is that such debates did not always refer to or invoke a concept called intelligence or *general intelligence*.

As a relatively newly named concept with a marked upswing in references in the late 19th century, intelligence theories relied on a longer history of the reification of

reason. While early AI research in the mid-20th century trade on the proximity and vagueness of both terms to launch a search for a machine that could seem reasonable and logical, the late 19th century versions of scientization were dedicated to populational management more heavily focused on an overlap between enfleshment-as-moral capacities and enfleshment-as-phenotype. The early intelligence tests, for instance, privileged select notions of moral reasoning, developed by Binet and Simon in France and were then modified in the US and UK (Gould, 1980). The formulation of the IQ from Binet to Lewis Terman at Stanford redefined what intelligence testing was designed for, who it was for, and what it was meant to achieve, with Terman flipping Binet's concern for the social welfare of children who were labeled in France as "stupid" into a eugenic project for favoring white elites (Baker, 2009). As Malabou (2019) puts it, intelligence was to the 20th century like reason was to the Enlightenment and "would thus become the unfounded foundation of the origin of inequality among us all" (p. 3).

The early "ignorance tests" in the United States as they have come to be called such as those conducted by G. Stanley Hall in 1888 asked children questions such as "Where does honey come from?". In the Binet-Simon tests of the early 1900s questions such as "If one is given a punishment by the teacher for something one did not do, what must one do?" dotted the landscape, announcing a more overt and clearly "moralized" notion. The apparent "content" knowledge (honey's origin) and the "moral" understanding (whether to challenge a teacher's authority) were not considered separate but linked, the former coming to be read as harbinger of the latter. After Terman's modifications in the US, the army alpha and beta tests of WWI soldiers were undertaken. High profile psychologists such as Terman and Edward Thorndike were hired by the army to develop an efficient system for placing soldiers in jobs most "suited" to them. After this effort failed to make any better determinations than existing officers could make through simply talking with soldiers themselves, intelligence testing moved more fully into the school system.

The progenitors of mental measurement profited from this expansion after a clear failure elsewhere, focusing initially on children in the area now known as California. Through the 1920s, vociferous debates erupted such as between Terman and Walter Lippman, grabbing headlines and positioning the debates over intelligence testing as a debate between forces that posited intelligence as largely genetically determined (labeled by opponents as anti-democratic) against forces that self-identified as pro-democratic and that entailed some belief in human plasticity and a stronger role for environmental causation (Baker, 2009). These debates were somewhat different from those that erupted in France earlier around Binet and Simon's work, such as the contestations generated between philosophy (dedicated to intellect) and psychology (dedicated to intelligence) (Malabou, 2019). In the 1920s US, the issue was not so much

the definition or domination of an academic field as it was about determinism, the ethical issues entailed in sealing the fate of children to whom the tests were applied.

"Intelligence" as an outcome of inner actions: Enfleshment-as-"invisible"-psychological-constructs

The above illustrates how intelligence theories emerged along with Man1's transition to Man2 and within the nexus of nation-building, school-building, and colonialist drives. In response to historical and local problems such as industrialization and mass-governance, however, the figure of Man, "a reasonably logical human," shifted towards the image of an autonomous, propertied subject who, while motivated by self-interest (Man2), also operates in new ways of which he is not always aware. Correspondingly, theories of consciousness and mental states, as well as behaviorist physiological psychology, were built off the new physiologies of the 19th century, redefining "intelligence" away from beliefs about "faculties" to new locations with new vocabularies. Such theories placed emphasis on marginal and extra-marginal awarenesses – what might be called the subconscious and psychic phenomena – changing what "intelligence" was and where it was. Combined with physiological psychology the newer theories of mind enabled the formalization of the Intelligence Quotient (IQ) which emerged in France through the work of Binet whose prior specialization was animal magnetism (hypnosis) and physiological psychology (Baker, 2013).

Following the advent of behaviorism more noticeably in the early 1900s, though, and especially strong in the US, theories of mind and appeals to something called consciousness were no longer required to build explanations. Both were jettisoned to the realms of metaphysics or epiphenomena via the study of reflexes and instincts instead. Intelligence was posited as something of a substitute, something that could be measured by behavioral responses but ironically not defined, materially verified, or located amid all the apparatuses of quantification.

By the late 1920s, and in the throes of a strong eugenics movement that formed alongside and sometimes within the different psychological theories being propounded, what started to matter was that the "matter" of "the body" was now seen as housing a "property" referred to not as intellectual, but rather as intelligence, and that it could be tested and revealed in a rather machinic way. As noted above, what got to count as "intelligence" was not settled or ontologically self-evident but eventually became linked to wider mental measurement movements that generated an entire architecture for an invisible and presupposed "entity" or "quality."

Mutually constitutive within these debates in conflicting psychologies and the entrance of intelligence into daily vocabulary were racialized, sexualized, religious, linguistic, and ableized prejudices that humanisms earlier embodied as part of the maintenance of privilege. Such prejudices were more clearly on display within the earlier conceptualization of human being drawn out in pseudo-scientific movements that made appeal to *matter* as evidentiary and purposive, such as in phrenology, discussed above (Baker, 2019). These earlier innatist theories which became one of intelligence testing's key traits in the form of IQ's scientization were on full display by the 1920s, but the general trajectory preceded the coining of IQ or mental measurement in quantified terms. The slew of prejudices was also, however, operational in movements that, while unable to pin something down to matter such as "the discovery of the unconscious" (Ellenberger, 1981), pinned it down to experiments that demonstrated automation, such as hypnotic, clinical, and drug-based trials, conducted often on women and people who were enslaved (Baker, 2013). A new language emerged of the subconscious, the unconscious, the nonconscious, subliminal, the marginal, the extra-marginal, and the extrasensory in the wake of experiments such as post-hypnotic suggestion, with implications for rethinking Man. Parts of Man were now considered potentially outside of Himself, forces that were running on automatic that got "inside" without His knowing and without an egocentric "I" making purposive informed decisions, like Locke's gentlemanly elite once thought they did.

Together, by the early decades of the 1900s, the materialist physiology of psychology and the explanatory power attributed to a mysterious zone, domain or operation referred to as unconscious radically transformed theories of mind, learning, and the role of sensation, shifting conceptions of enfleshment. The two characteristic traits that marked claims to intelligence in education since then - innatism and automation - were to continue to "haunt intelligence and its inevitable stupidity" (Malabou, 2019, p. 8) across the 20th century. For innatism, closing the subject down from claims to environmental causes was part of the allure. Automation, however, minimized the subject's "ownership" over-processing, either demonstrating how what went on "inside" ran an automatic via the unconscious or was able to be impacted by machines and forces on the outside that also functioned through repetitive part-whole relations put in motion through a directed energy source. The lines previously drawn between animal-human-machine began to blur and the borders of "Western" education's foundational subject, the figure of Man, were opened more widely than ever before.

By the 1930s, Man was reconfigured – stretched outside Himself. Contributing to this decentering were a variety of new presuppositions: structuralism's focus on automation that blurred inside and out, the positing of a collective unconscious, a

quantum turns in physics focused on electron-motion theories, and physiology's version of ocular vision and seeing as culturally shaped habits of perception, neurologically inscribed (Bode, 1929). This took what occurred "in the classroom" in the name of education far beyond the significance of verbal and print texts. Pragmatism mediated these possibilities regarding mind theory (i.e., was "mind" in or out in explaining behavior?) by assuming much of the mantle of evolutionary biology and behaviorism's scienticity but adding purposive consciousness back into explanations, especially for pedagogical contexts. Via pragmatist theories, a newer concept of intelligence was foregrounded in a different way, as adaptability between living organism and environment (Bode, 1929).

This version of Man, the openings into which man3 could step, changed what schools were thought to do. School attendance in the United States became compulsory for some populations, first in Massachusetts in the 1850s and last in terms of existing states at the time in Mississippi in 1917, redefining salvation increasingly away from overt Christian signifiers of saving spiritual souls and toward saving organic mind-bodies from their "savage" or "primitive" selves. "Self" now was generally conceptualized as a phenotypical matter, "the body" read as a patina largely believed to be pointing to perceived interior differences, linking surface and depth, appearance and potential, as though a universal law. These discursive tensions laced institutional formations, with biological foundationalism rubbing up against versions of structuralism and a new emphasis on visual culture and film pitted against longstanding published debates over the perceived "nature" of children and appearances. The earlier purposes of schooling that had embedded Christianity and white supremacy's fantasy of control and purification did not go unchallenged (Counts, 1978/1932; Woodson, 1931). Amid the challenges the initial purposes of schooling defined who was *allowed* to go, who was *forced* to attend a school, and who had to *petition* to be able to go. From so-called "reservation schools" for Americanizing and killing indigenous children to efforts to kill African American children for learning how to read, compulsory schooling across the 1800s and 1900s was (and still is) incredibly laced with Man's genocidal propensities. The techniques of "salvation" – what later came to be called curriculum theory – seemed trapped, however, in the pincers of innatism and automation, either positioning classrooms as giant trellises for preexisting biological qualities to unfold or seeing them as pivotal, ritualistic sites for using the automaticity of reflexes in children to ensure the "right kind" of programming endured.

Across the second half of the 20th century, the divisions indebted to this iteration of Man2 as overlapping formats - enfleshment as phenotype/genotype and enfleshment-as-"invisible"-psychological construct - remained, while the means of continuously resecuring such divisions shifted. The IQ movement was only one such

means. While in the first decade of the 1900s, age became a basis for measuring and comparing so-called intelligence, intelligence increasingly came to be seen as more "cognitive," linking what Deleuze refers to as the classic image of thought to the new claims made about genetic endowment. The re-eruption of intelligence debates in the 1990s US underscores how such tensions have not gone away or necessarily protected those most denigrated by the invention. The publication of *The Bell Curve: Intelligence and Class Structure in American Life* by Hernstein and Murray in the '90s and strong counter-reactions guaranteed that such division traveled into the 21st century. In education, the debates over implicit biases in intelligence testing related to race, gender, socioeconomic status, first language, and more continued as counter-movements such as abolitionist pedagogy, decolonial education, and alternative "non-Western" subjectification projects arose to name and undo the history of attempted conquest and segregation.

The markedly attempted diminution of children now coded as indigenous, African American, LatinX, female, working class, disabled, and more, occurred in part via intelligence testing that was expounded from Terman's research forward, then, but not without contestation. The counter-arguments that emerged across the 20th century and beyond appeared more so in philosophy than in psychology, drawing upon critiques of biologic and machinic determinism, what Malabou (2019) sees as a "protective shield" that has prevented other realizations. Critical theories attacked both the innatist beliefs embedded in biological determinist conceptions of matter and the appearance of objectivity accruing to machinic automation and technicist and instrumental rationalities. But has the so-called "gene" of modern disciplines – the figure or rather figures of Man - including critical theory's own foundations within it, been truly unraveled?

"Intelligence" as epigenetic effects and (binary) digits: Enfleshment-as-information

The second half of the 20th century saw more neuronal and cybernetic theories of intelligence emerge, built upon the earlier innatist and automatist turns: "One way or another, the intelligence of the psychologists will always refer both to the gift of birth and to a certain form of mechanism. A single word 'intelligence,' characterizes both genius – natural intelligence – and machines – artificial intelligence" (Malabou, 2019, p. 8). Neuroscience and cybernetics propose a theory of brain function that presents a logical, digital, and plastic view. This theory contributes to the emergence of a "superintelligence" that does not solely rely on a particular "physical" substrate like the human brain (Bostrom, 2014), and to the transition of Man to an informatized and decentered subject in expanded ways.

A milestone event in this new version of Man's decentering is the idealization of the McCulloch-Pitts neural model. In 1943, McCulloch and Pitts (1990) developed a model of neural circuits, which they claimed interpreted and simulated the basic working of biological neurons. According to this model, individual neurons function as on/off gates in response to two types of inputs (excitatory and inhibitory) and when arranged into circuits, conduct decision-making "intelligently." The inputs could be either 0 or 1 and are assigned different weights (the excitatory inputs have weights of positive magnitude and the inhibitory inputs have weights of negative magnitude). If the sum of all the weighted inputs is equal or above the threshold value, the neuron will be activated, otherwise, the output of its activation function is 0. The pure mathematization of a live organ's operation gave special impetus to the cybernetic imagery of the mind as a logic machine, which is computational and explainable by physical laws, rather than by its "material" constituents. This is why Nobert Wiener (1948/2019), one of the founders of cybernetics, comments,

> We are beginning to see that such important elements as the neurons, the atoms of the nervous complex of our body, do their work under much the same conditions as vacuum tubes, with their relatively small power supplied from outside by the circulation, and that the book-keeping which is most essential to describe their function is not one of energy. In short, the newer study of automata, whether in the metal or in the flesh, is a branch of communication engineering, and its cardinal notions are those of message, amount of disturbance or "noise" … quantity of information, coding technique, and so on (p. 42)

That McCulloch and Pitts conceived the inputs of their model as binary is no coincidence but aligns with Shannon's revolutionary reformation of communication. Shannon (1948/1964) understands communication in terms of the reduction of uncertainty and disregards the semantic aspects of the messages. Wiener (1948/2019) refers to Shannon in his conceptualization of information and holds that binary digits, which articulate uncertainty as "a choice between two equally probable simple alternatives, one or the other of which is bound to happen" (p. 86), best fits the purpose of information engineering. He observes, "in accordance with the policy adopted in some existing apparatus of the Bell Telephone Laboratories, it would probably be more economical in apparatus to adopt the scale of two for addition and multiplication, rather than the scale of ten" (p. 7).

Moreover, the information turn accounts for the co-evolvement of theories of the mind and its environment, termed by neuroscience and cybernetics as "plasticity." In cybernetics as in pragmatism, learning and adaptation occur as the mind integrates the

physical stimulus into the effects of its past choices to calculate the possibility of new choices. Here, "plasticity" is an effect of information circulation and processing rather than behavioral automaticity directly associated with the machinic repetition of the physical stimulus. Malabou (2019) argues in this regard that, through neuroscience, the action of environment on the constitution of phenotype and brain development was given a determining role. Rather than fatalistic inherited geneticism, neuronal connections forged via environmental interactions could now be understood as formative of habits and more, further blurring inside/outside and subject/environment binaries. While Malabou points to the reversal – brain now determined by something other than fatalistic geneticism - she misses the historical strength of prejudices based on skin that epigenetics has not truly or fully addressed, and that neuroscience typically avoids. The overlapping nature of different "genres" of enfleshment wove together in new forms such as cybernetics and epigenetics that while challenging some aspects of extant systems of reasoning left other genres to play out or as taken-for-granted.

Conceptually, such newer theories of brain function made room for the emergence of an "intelligence" which is enfleshed as epigenetic effects and digits, and the distributed production of a subject through the almost closed network of a computer. According to Malabou, two major shifts have occurred along these lines since the early days of IQ where intelligence was characterized as a measurable but materially invisible entity and subsequently critiqued for decades. First, a metamorphosis occurred in the shift from the genetic to the epigenetic paradigm in the early 21st century. Second, the yet-to-come metamorphosis stands largely upon the pragmatism of Dewey and adaptationist psychology of Piaget. This shift is "the age of intelligence becoming automatic once and for all as a result of the removal of the rigid frontiers between nature and artifice. The power of automation by far exceeds a simple 'roboticization,' and the increasingly refined simulation of 'natural' intelligence makes a new approach to the brain incumbent – an approach that would not only make sense for biology but would also reveal the essential nature of its complicity with technological simulation" (pp. 15-16).

All of this suggests that, from the figure of Man's faculty psychology in the 1700s, to the invention of an intelligence concept across the 1800s, to the emergence of beliefs in an unconscious, behaviorism, structuralism, quantum physics, and pragmatism across the early decades of the 1900s, to cybernetics, epigenetics, and neuroscience of the mid to later 1900s, the idea of intelligence has been realized in different versions of enfleshment. Those versions were worked out within the projects of a colonialism-racialization-modernity vortex, academic disciplines, and compulsory schooling, among other sites. From enfleshment-as-moral-capacities (the transition between Man1 and Man2) to the scientizations offered by Man2 - enfleshment-as-

phenotype/genotype and enfleshment-as-"invisible"-psychological-constructs - to the emergence of man3's enfleshment-as-information involving epigenetic effects and digits, the arc has not been a simple process of totalized substitutions or neat, stagist progression from flesh to disembodiment.

This sheaf, the complexity of overlapping genres whose critique remains within the master's tools (we are not claiming to magically be "outside" of these tensions, pressures and circularities), establishes a different kind of fabric around the practices referred to as artificial intelligence than simply technical innovation. From this perspective, the following sections will retrieve the messy ground where an AI field has been historically embedded amid the politics of AI's reference to "a reasonably logic human."

The emergence of an AI field

The typical disciplinary starting points for a field labeled AI are taken most immediately back to the pre- and post-WWII work of Alan Turing in the UK and his "universal Turing machine" and as noted in the introduction the Macy conferences in 1950s US. According to Turing (1965/1936), a Turing machine is a theoretical device that consists of an infinite tape as the memory, a tape head pointing to an individual cell of the memory, and a "table of behavior" that establishes facts in a logical formalism. It can perform various computational tasks by reading and writing symbols on the infinite tape following the instructions of the "table of behavior." A "universal Turing machine" is a particular kind of Turing machine whose "table of behavior" is complex enough to read other Turing machines' tables and perform their work. In contemporary terms, the "table of behavior" is like an algorithm, the "Turing machine" a computer program, and the "universal Turing machine" a computer—a form of data that can manipulate other forms of data. The Turing machine was thought to capture what a human mind could do when carrying out a mechanical process. Its development signals the dawn of enfleshment-as-information via AI. For instance, it formulates the "computable" (or in mathematical language, "solvable," "decidable," or "recursive") in a representational and logical sense. In other words, the "intelligence" of a universal Turing machine is realized as a self-referential process by, through, and on symbols: the machine that is described by symbols operates through its symbolic "table of behavior" and on other symbolic tables. Moreover, the Turing machine designates a nexus of neuroscience and the design/engineering of an artificial neural network, both of which conceive the brain as a computing machine and individual neurons in the brain as digital processers. McCulloch states in this regard, "What we thought we were doing (and I think we succeeded fairly well) was treating the brain as a Turing machine" (cited in von Neumann, 1951, p. 32).

The mid-20th century Macy conferences brought together leading intellectuals across different disciplines to explore problems of cybernetics, systems theory, and artificial intelligence, and played a pivotal role in the rise of an AI field. Those who are considered as key figures in AI, such as John von Neumann, Norbert Wiener, and Marvin Minsky, participated in the conferences and discussed topics related to the nature of intelligence from various perspectives. After the conferences, designing a machine that could do what "a reasonably logical human" could do became a general goal (Tegmark, 2017, pp. 123). Who or what that reasonably logical human could be as referential model remained unspoken. Given the ongoing potency of a savage/civil binary that laced knowledge production and claims to scientific status, however, it seemed to operate more in terms of who it could *not* be in terms of the full human. As Benjamin (2019) notes in *Race after Technology*, the issue in the early days of AI's field formation were not about intention and identity alone, but rather a cluster of systemic elisions and provocations based on old models of humanhood.

In addition to this elision of reason and logic from actors marked as minority, female, working class, and/or disabled the "artificial" part of the AI nomenclature in the mid-1900s both repeated and challenged the older Aristotelian binaries that had occupied the "Scientific Revolution" and industrialization in Europe centuries earlier. On the one hand, labeling something as artificial drew a commonsensical distinction between nature-as-organic and that which was considered manufactured by human hand, with "savage" and "woman" conjured as too close to nature and as the Body Magnified to invent or manufacture anything. On the other, the belief that things classified as natural entailed little interference from Man, embodied their own self-moving soul, and thus could, like animals, self-propel and locomote in some form was muddied by mechanical inventions.

Since the 1950s, research and technologies claiming the mantle of AI continuously challenged what was seen as a uniquely human capacity and self-moving. In the decades after the Macy conferences, the difficulty of emulating whole human function was recognized, and the dream of a general AI was less invested in, as the equaling or replacing of the total human complex proved too hard. The focus in the nascent computer sciences shifted and specific skills and subsets of individual tasks, such as storage of information, calculation, and game-playing (e.g., chess and Go!) became the focus (Boden, 2018; Ford, 2018; Wilson, 2010). This spawned a series of inventions that today are often glossed over. A calculator 50 years ago, for instance, might have been considered AI because it could do a specific skill, like long division, faster and more accurately than most people. An ATM (automatic teller machines) 30 years ago might have been considered AI because it could dispense cash faster and

more accurately than bank tellers. Calculators in the 1970s and ATMs in the 1980s appeared as AI inventions relative to perceived human capacities at the time, while the focus on chess became positioned as the *sin qua non* of intelligence. Chess, in this line of research, suited the kinds of programming available, i.e., the manipulation of symbols in chess and in mathematics matched the rule-bound and finite AI architecture of the time.

In the 1990s, once the world chess champion Gary Kasparov was defeated by Deep Blue, the chess playing program, new figures for programming emerged that tried to push beyond the limits of more rigid and fixed subject matters and architecture – the figures of the developing child and playful animals. These figures emerged as key metaphors and guides for R&D, inciting the fields of brain development, neuroscience, computer programming, animal ethology and child development to start talking to each other across previous epistemological divides (Wilson, 2010). Drawing on what are now called machine learning, deep learning and computer vision modelling, the exponential and disruptive technologies from the '90s onwards were built on different kinds of computational, material, and programming innovations, in which the human mind-body complex became not the sole referent or yardstick for what was seen as powerful or unique.

In that context, classroom calculators and ATMs would probably no longer qualify as AI in the wake of machine learning/deep learning/computer vision technologies, approaches driven by probabilistic reasonings. The algorithmic basis to machine learning approaches can result in more deductive or inductive kinds of "learning" and can entail more open-ended and/or cross-platform pattern-seeking, mining big data for correlations that drive the analytics, feedback loops, and next steps.

The overcoming of former separations between brain-based models and mathematical and computer-based information programming models thus inspired a neuroturn in AI development and interdisciplinarity that reached into the social sciences. The confluence of AI, big data, and neuroscience are today acting directly and indirectly to redefine the basic unit of education – the figure of Man in Wynter's terms – and the capacities or qualities considered unique within an old speciesist reasoning and a classical image of thought (Deleuze, 1986). The following section will examine, then, how the new developments of AI are pushing the boundaries of "intelligence" and how enfleshment-as-information is associated with Man's transition to man3.

AI's programming of emotion and the rise of man3

Designers and engineers capitalize on a tendency to project onto machines and increasingly frame "intelligent agents" as tutors, caregivers, friends, students, servants, and collaborators. Here, the belief in a universal set of emotions upon which psychology focuses becomes part of the concept of intelligence rather than anathematic to it. In other words, the historical presumption of reason-as-morality where emotions were meant to be kept at bay or at best managed in antithesis to reason is reversed and mobilized for functional purposes and to lend a "live human" feeling to the machine. A select set of emotions becomes absorbed within new definitions of intelligence, generating neologisms such as emotional intelligence and emotional artificial intelligence (EAI), with the programming following suit (Mainville, 2017).

Presumptions of emotions are left unexamined in EAI and the project of automation. For instance, in *Creating Emotional Artificial Intelligence*, Mainville (2017) argues that in efforts to program intelligence, "I quickly realise [sic] the machine had to endure its environment to be able to react to it; and thus must live emotions (fear, refusal, etc.)" (p. 5). Here, emotions are treated as self-evident, their role is instrumentally oriented toward getting something else, and in this case about giving feedback in the way that machines can recognize: "Programming a machine to be as intelligent as human beings requires the emotions because those emotions tell the machine when it is in trouble, or when an event or information is not desirable and bad, or useful and good" (p. 5). As an example of how emotional artificial intelligence can be created, Mainville links to how automatisms are thought to operate in habits, work, sport, etc., through the brain and pleasure/anger. In explaining the logic of such an approach and offering a model, the highest intensity of pleasure is coded as PLEASURE 10 and can be used to create an automatism in a machine that imitates reactions to a teacher's presence and learns by trial and error:

> **IF** an image of the teacher's arm **THEN PLEASURE** 10,
>
> **IF** the image of the EAI's arm **EQUALS ALMOST** (similar to) the image of
>
> teacher's arm **THEN PLEASURE** X,
>
> **IF** the image of the EAI's arm **IS NOT EQUAL TO** (i.e., is not similar to) the
>
> image of the teacher's arm **THEN ANGER** 1, and **IF ANGER** 1 **THEN** move
>
> (randomly using trials nad errors), and

> **IF** the image of EAI's arme **EQUALS** (i.e., simultaneously) (**IF** feeling the contraction of the shoulder muscle **THEN PLEASURE** X, **IF** feeling contraction of the elbow muscle **THEN ANGER** 1, **IF** felling the contraction of the wrist muscle **THEN PLEASURE** X) **THEN PLEASURE** 1.
>
> **IF** an image of EAI's arm **EQUALS** (feeling the contraction of shoulder muscle, feeling the contraction of the elbow muscle, feeling the contraction of the wrist muscle) **THEN PLEASURE** 10 (Mainville, 2017, pp. 26–27)

The current trend in which AI incorporates computational "emotions" into "intelligence" adds a new twist to the digital mediation of Man. As Tegmark (2017) remarks, current humanity is "*life whose hardware is evolved but whose software is largely designed*. By your software I mean all the algorithms and knowledge that you use to process the information for your senses and decide what to do" (p. 17). Put another way, the ability to design software enables life to be much "smarter" than life-as-Nature is: "High intelligence requires both lots of hardware (made of atoms) and lots of software (made of bits)" (*ibid*). Now a universal set of emotions are programmed as software and make enfleshment-as-information into a kind of computational "high" or superintelligence. This shift is described by Baker et al. (2023) as the coming-to-noticeability of a nascent man3. Accordingly, the next section explores the potential risks of the emotional turn of AI.

The politics of man3

Nascent man3 appears when enfleshment-as-information becomes the new definition of Life and is supplemented by the coding and programming of a set of "universal" emotions. To map the politics of man3, it is necessary, then, to take a closer look at problems inherent within the informatized and psychologized enfleshment of intelligence. In the following, we suggest that it is the culturally specific (thus reductionist) production and incarnation of mind, brain function, and emotions, plus the self-inscription of the "sociogenic replicator codes" (Wynter, 2015) such as race-gender-dis/ability, etc., that account for the violences of man3.

First, modeling the mind by simulating the activities of neurons in a biological organ called the brain is itself a cultural and historical practice. Even an examination of

"Greek thought," a set of cacophonies alleged to be the origin of "Western" civilization, reveals a different scenario of what "mind" is or could be. According to Collingwood (1945), the prevailing cosmology in Greek antiquity posited the Mind as immanent to divine nature:

> The life and intelligence of creatures inhabiting the earth's surface and the regions adjacent to it…represent a specialized location and organization of this all-pervading vitality and rationality [of the world of nature], so that a plant or animal…participates in its own degree psychically in the life-process of the world's "soul" and intellectually in the activity of the world's "mind," no less than it participates materially in the physical organization of the world's "body" (pp. 3-4)

From this perspective, the world of nature is a living being and the activity of its "mind" orders the "intelligence" of a plant or animal. It is only after a series of intellectual and social movements that nature became devitalized and versions of "mind" re-incarnated first into a Christian God and then into Man's reason (Wang, 2022). AI bases its design of "artificial" intelligence on the paradigm of the mind proposed by neuro-cognitive science and cybernetics. It thus risks universalizing a culturally-loaded provincial belief in such a thing as "mind," in "its" inscription as "invisible" but important, and in the attendant onto-epistemological scaling. Benjamin (2019) sharply criticizes this reductionist operation by asking, "Is there only one theory of the mind, and *whose* mind is modeled on?" (p. 52, emphasis original).

Second, the informatization of neurophysiological activities has long been criticized as empirically unjustified even within the disciplinary framework of neuroscience. For instance, the renowned neurophysiologist Ralph Gerard cautions against the oversimplified simulation of biological neurons by the McCulloch-Pitts neural model and proposes a continuist, rather than atomist and binary framing of neural function. He explains, "In each of our brains at this moment a neuron is not sitting there like a figure on a card-board diagram, as we ordinarily think of it. Each is giving out pseudopods, retracting its fibers, moving forward and back, swelling and shrinking and moving from side to side" (McCulloch, 2003/1950, p. 35). Another neurophysiologist Karl Lashley also addresses the drawbacks of informatizing neural function. Lashley (1950) points out that most of time neurons do not "wait" for the binary inputs to perform activation functions; rather, they dynamically exhibit various patterns of behavior ("plans") that are modulated, not determined, by the inputs. Besides such concerns expressed by "insiders" of neuroscience, there are also critiques of the epistemological provinciality of informatization more generally. For instance, Wang (2022) contends that via figuring out patterns of change through statistics and

probability theory only, such an episteme itself becomes the cornerstone of modernity, which sets the privilege of Man.

Third, the focus of AI's emotional turn is radically different from affect and affect theory in the humanities and social sciences. Generally, affect theory discusses whether "emotions" are unmediated, non-systemic, diffuse, and immediate sensations, drawing attention back to descriptions of materiality, or whether "affect" is reference to wider sociopolitical relations, forms, and representations that structure and exceed the classifications of emotions as sensation and which can surprise and subvert representations (Brinkema, 2014). To that end, the difference between psychologized notions of emotion and affect resembles the distinctions drawn in disability studies over key terms. Disability in the biomedical frame has been positioned as a "condition" or "impairment" lying within someone and seen often as a negative ontology, while disability rights and studies argue that while different ways of being exist, disability emerges in social relations, attitudes, and architectural and design norms.

The realization of emotion by AI is to some extent like that of disability in the biomedical frame – taken-for-granted and something that has to be "dealt with." Although various models of emotion can be incorporated into AI systems depending on the task at hand, these models share commonalities: They "identify" certain types of emotions as if such types "naturally" exist, universal to all human beings, and awaiting discovery. Also, they determine the exact emotion by giving it numerical values in terms of positivity, intensity, controllability, etc. For instance, a model frequently used in emotionally intelligent chatbot systems is the Valence-Arousal-Dominance (VAD) dimensions spanning across Ekman's categorization of emotions. In this model, the six basic emotions proposed by Ekman et al. (1969), such as anger, surprise, disgust, enjoyment, fear, and sadness, are scaled in terms of the extent to which an emotion is pleasurable (Valence), engaging (Arousal), and under-control (Dominance) (Russell and Mehrabian, 1977). The very idea that "there are universal types of emotions endorsed by psychology and represented numerically" is a dangerous fantasy as it attempts to normalize and colonize the intimate, peculiar, and generative process of affecting. De Vos (2020) complains, for instance, that as the bot's behavior is prescribed via mainstream psychology and capitalist ideology, we risk being turned into bots that execute specific tasks set by such hidden algorithms.

Finally, historical -isms will not simply disappear with the rise of man3 and an apparent disembodiment suggested by the information turn. Wynter (2015) contends that, just like DNA molecules that allows for biological reproduction, rhetorical statements of "truth" and "knowledge," such as race-gender-dis/ability, etc., trigger positive/negative neuro-chemical reactions (reward/punishment mechanisms) and

enables cultural reproduction. Benjamin (2019) also expresses her distrust of so-called technological solutionism, the belief that technological innovation will help address, and ideally, eradicate social problems. She warns against the datafication of structural injustice that black boxes historical biases and invents more efficient means of marginalization.

In sum, the above demonstrates the complex and intense politics of man3 at a general level. The transition to man3 builds upon the decentering projects of the early 1900s, modifying and expanding them in complex ways. Those movements, like behaviorism and structuralism, while seemingly politically opposed as right wing/left wing respectively, similarly questioned to some extent the centrality of Man, "the subject." The advent of man3 is marked not just by questioning the centering of Man, i.e., the decentered subject, but by challenging Man's primacy as well. On the one hand, then, man3 signals a dispersal toward apparent disembodiment into "systems" of "reasoning" that stage historical -isms. The ontological divisions based on Man, like race-gender-dis/ability and more, and the "emotions" that are elicited under oppression and privilege are increasingly coded into binary digits, alongside everything else from the scent of flowers to the play of animals. On the other hand, this apparent disembodiment is an effect of a series of culturally specific representational-technological movements, which enflesh the indicators of Man through a complex array of reductionist and provincial operations, leading to foreseeable and unforeseen forms of discrimination and exclusion, among which the normalization and colonization of affect through computational "emotions" are but one example. In the following section, we approach the politics of man3 through concrete examples of AIEd, where malleable social-emotional skills are considered crucial to educational achievements and the measurements and normalization of students are carried through a digital circularity.

Now how about education?

"Education," De Vos (2018) remarks, "has already been the site where the phenomena of psychologization and neurologization ran rampant" and "is now clearly also a primordial site with regard to the digitalization of (inter)subjectivity" (p. 27). Education's long-term reliance on psychology and neurology, which draw on a computer metaphor of the mind (as exemplified by the McCulloch-Pitts neural model) (Tilak et al., 2021), now aligns with its excitement for the integration of cutting-edge digital technologies, such as facial emotion detection, neuroimaging, and natural language processing. This trend is now referred to as "precision education" (Williamson, 2019; Kuch et al., 2020; Williamson, 2020), where "precision" means knowing and engineering students "precisely" with the aid of "smart" human-computer interfaces and scientifically informed analytics.

"Precision education" clearly demonstrates the drift and layering of historical forms of enfleshing Man toward so-called disembodiment, as students' bodies, brains, and psychological states (especially emotional states) are rendered as traceable data. Here, we will present several concrete examples of "precision education" as a prompt for inviting discussion over the politics of man3 in education.

Example 1: A report published by the World Economic Forum (WEF), titled "New Visions for Education: Fostering Social and Emotional Learning through Technology" (WEF, 2016), suggests that skills developed through social and emotional learning (SEL), such as peaceful conflict resolution, emotion regulation, empathy, and responsible decision-making, are crucial for the labor market. It also promotes the use of AI-empowered techniques like facial emotion recognition and virtual learning peers to enhance SEL teaching and assessment. Here, it is noteworthy that education is driven by the market logics of digital capitalism and that AIEd contributes to the institutionalized definition, pedagogy, and evaluation of social and emotional skills that remain squarely within a bourgeoise social frame. Educators need to consider if such an AI-supported education-economy complex risks reinforcing "standardization movements with rote lines of curriculum that equate 21st century skills to the labor needs of corporations" (Loveless et al., 2017, p. xxi) via the management of facial muscles, facial expressions and a coded verbality that masks and glosses the barbarism and violence of colonization within the ironic signifiers of civility, manners, and self-control.

Example 2: The MIT Media Lab has developed an emotionally aware intelligence prosthetic named the "galvactivator" (Spreeuwenberg, 2017). This "glove-like" device is designed to detect the wearer's skin conductivity in real-time, correlate it with physiological arousal (excitement), and visually represent the wearer's level of excitement through LED displays of varying brightness. The developers aim to use this device to understand the psychological state of children with autism as well as facilitate smooth communication between individuals. The rationale behind this practice is the operationality of disembodiment: Student bodies are projected as machine-readable and machine-writable. That means, the problems of human subjects can be identified, clarified, and treated at the data level. It raises questions for educators such as, "Does the insatiable desire for digging out intimate life data help reveal 'true' human nature or simply lead to knowledge production based on endless processes of data-generating-data?" and "(How) Can technological solutions for 'social' problems attend to the intricate socio-historical factors that are foundational to these issues?"

Example 3: Woebot (https://woebothealth.com) is a social-emotional chatbot designed to expand users' behavioral capacity and offer accessible, round-the-clock mental health support. Drawing upon scientific expertise in fields like Cognitive Behavioral Therapy (CBT), Interpersonal Psychotherapy (IPT), and Dialectical Behavioral Therapy (DBT), Woebot utilizes natural language processing (NLP) to engage users in conversational and interactive chats. While it caters to clients from a variety of backgrounds, Woebot places particular emphasis on addressing the mental health needs of adolescents (aged 13-17), who have actively developing minds and unique modes of communication. Woebot finds its "scientificity" lying in various psychological models without recognizing cognitive psychology's reliance on a provincial understanding of the mind—the computer metaphor of the mind – which arises from digitality and reduces effect to certain types of emotion. In relying on NLP to translate users' "invisible" emotional states into information that is subject to psychological analysis, digitality gives rise to both the tools and the object, thus producing a circular explanation. Such circularity calls for special attention from educators, as it could easily be internalized by youth as *the* way of talking about and understanding themselves and the world without any alternatives.

These are but a few examples showing how AIEd endeavors to turn students (and teachers) into data traces and incorporate "emotion" into the realm of "intelligence." One of our primary concerns about the rise of man3 in education's version of enfleshment-as-information occurs especially through the tautology of digitality. In the above examples, policymakers, developers, and researchers rely on (neuro)psychological models of the mind that are informed by digitality to investigate and control users' digitalized bodies. As such, the reductionist view of the mind/body as being itself, as a computational and logical machine, the normalization of affects into psychologized constructs of emotion, and the perpetuation of historical biases in the "data" feeding algorithms, are left less questioned or challenged. These risks mean that the allure of innovation and the optimism of possibilities in landscapes unexplored start to repeat the colonial logics of salvific appeals as a mask for greed, conquest without conscience, and technological solutionism as that which now must be embraced because it's too massive to overcome. These concerns are not predicated on a primal fear of change, but rather the lack of it. The dangers inherent in Man's newer formulations of enfleshment, from the atom bomb to AI, constitute not just "a new world" per Oppenheimer - after there has already been "the New World" - but a threat to the entire planet and its "human" and more-than-human forms who-that are not necessarily asking to be coded, reduced and replicated as a series of digits or epigenetic effects.

Conclusion

We have argued here via engaging with the issue of varying enfleshments and the apparent disembodiment of Man in post-digital, AI-empowered contexts, that a new version of Man – man3 – is now operating in education to generate a series of ethical flashpoints that the general field of education has yet to take seriously. Thus far, education and especially compulsory education and teacher education have refused to engage in interrogations that hold breadth and depth and critical questioning in the one embrace. While curriculum studies scholarship has been at the forefront of this questioning – including this crucial special edition – there has been a dearth of philosophical-historical considerations of what counts as innovation or change and the possibilities, limits, and quandaries.

Noting that digital technology relies on non-semantic "representation" tied to probability, i.e., binary digits, this paper has explored how the sliding signifier of "intelligence," an indicator of Man, has been and is being enfleshed through various strategies. These strategies overlay and braid, illustrating the complex, dynamic, mutual formation of "representation" and technology, and raising the question of what constitutes a change.

Our analysis suggests several important gathering points for immediate and future consideration. First, it illustrates that to understand institutional injustice related to Man, it is vital to pay attention to the transition of Man to man3, where "intelligence" is realized, especially by AI, as flows of digits that attempt to invent, measure, and effectuate sets of emotions "universal" to all human beings. The reductive, provincial and in some cases, manipulative orientation to emotion does not stand apart from the development of AIEd in any form.

Second, the seeming disembodiment occurring via binary digits does not lead to the eradication of discriminations once associated with semantic "representation." Rather, enfleshment-as-information and the emotional turn of AI are embedded in a representation-technology entwinement, complexifying historical forms of enfleshing Man, and producing no less exclusion and violence than historical -isms already have done. Here, the decentered subject, normalized as consciously consuming, choosing, plastic, and programmable, must somehow "self"-fashion (Dumit, 2010) out of all the forces, energies and influences reduced to digits that can swirl around and through them. The tensions between somehow "taking responsibility" for the impact of creations that exceed one's control or ken and the opacity of mechanisms that are being deliberately designed for engineering from a distance and that run on automatic are

notable and do not sit outside the educational examples we have outlined but rather at the heart of questions about what "we" think schools have a right to do to children.

Third, there has been until recently very little consideration of the historical pivot points of the '50s and '60s noted in our introduction as inherently related. This failure to address the *socio-technium* in relation to Man will prevent educators from effectively navigating the changing landscape of AIEd and/or fully mobilizing AI to defy institutional injustice grounded in Man. While contemporary work is attempting to bridge this initial disconnect (e.g., on "the social brain"), AIEd, especially focused on elementary, secondary, and tertiary sites of instruction, has attended to less dramatic and less potentially disruptive technologies, picking the low hanging fruits of what can augment a teacher's instructional role in a classroom or improve a student's test score, time to graduation, etc. (Murphy, 2019; Zawacki-Richter et al., 2019). The examples we outlined here, however, far exceed simple augmentations. In a context where good intentions and rosy imagination fuel enthusiasm for AI within and beyond education, as expressed by statements like "every child will have an AI tutor that is infinitely patient, infinitely compassionate, infinitely knowledgeable, infinitely helpful" (Andreessen, 2023, n. p.), educators must approach AI with a caution and vigilance that right now children cannot, especially when "emotions" of the young are part of the strategy for consumption. This paper invites the field to attend to the historical animosities that have fueled vitriol around the enfleshment of "intelligence," and to open conversations on questions such as "How does AIEd complexify the (neuro)psychological foundations of education?" "Has the genre of Man really changed that much?" and "(How) Are the seemingly new tools provided by AI able to undo or overcome the foundation of Man?"

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