Toward A Hauntology on Data: On The Sociopolitical Forces of Data Assemblages

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Abstract

This article engages the philosophy of science of data, with a focus on the extent to which data is always already imbued with racializations. As Alexander Weheliye (2015) has argued, racializations are not to be reduced to race but rather is the sociopolitical process that hierarchizes and differentiates bodies producing the entangled byproducts of race, gender, class, sexuality, and disability among other formations of difference. The article leans on black literary feminist Sylvia Wynter’s (2007) work on science, blackness, and the human. In particular, I work through her concepts of the cosmogonies of the human and the sociogenics of the fictively constructed models of Man. Cosmogonies, for Wynter, refer to the myths, narratives, and stories of the ontological origin of the human and the way in which this shapes the history(icit)y of the human, including the later sociogenic formations of Western Man as the exclusive white, male, able-bodied, heterosexual rendering all other bodies as nonhuman. Wynter (2001) rejects cultural and biological explanations of race while still accounting for the ways in which the fabrications of race, as sociogenic, become ontogenic via the flesh. With her theories of power, inheritance, and the body, the article examines the ways in which data become haunted by sociopolitical relations of racialization. The article then points toward alternative futures by arguing for Wynter’s proposed Autopoetic Turn/Overturn praxis of science to critically examine the sociogenic codes toward reconstituting the human.
Introduction

If haunting describes how that which appears to be not there is often a seething presence, acting on and often meddling with taken-for-granted realities, the ghost is just the sign, or the empirical evidence if you like, that tells you a haunting is taking place. The ghost is not simply a dead or a missing person, but a social figure, and investigating it can lead to that dense site where history and subjectivity make social life.

Avery Gordon, *Ghostly Matters*

If I am getting ready to speak at length about ghosts, inheritance, and generations, generations of ghosts, which is to say about certain *others* who are not present nor presently living, either to us, in us, or outside us, it is in the name of *justice*…. It is necessary to speak *of the* ghost, indeed *to the* ghost and *with it*.

Jacques Derrida, *Specters of Marx*

Specifically, therefore the truth of our being human in the now planetary homogenized terms of the West’s *Man*, in its second, biohumanist *homo oeconomicus* reinvented concept/self-conception, thereby within the terms of its now purely secular if no less also fictively constructed, by means of the sociotechnology of our humanly invented, then retroactively projected origin stories or cosmogonies and thereby autopoetically instituted, subjectively
experienced and performatively enacted genres of being *hybridly*, human.

*Sylvia Wynter, “Human Being as Noun? Or Being Human as Praxis?”*

“You told me that they can understand the man I am.

So why are we here talkin’ to each other again.”

Little Wayne, “Mirror”

Data is abound, ubiquitous in social life, and both everywhere and nowhere. In technologically advanced societies, much of the everyday acts, interactions, and transactions of life leave digital traces of what we did, whom we might’ve done it with, where we did it, and when we did it. As a result, histories of each of our social lives are being documented in real time. This has become an exciting moment for social scientist of all disciplinary stripes, including those of education research. The wild world of data has enabled, for instance, new questions and approaches of educational policy research with administrative data, more sophisticated and refined forms of assessment via video games or handheld technology, and the development of new fields and methods such as learning analytics and educational data mining. Indeed, the increasing proliferation of educationally relevant data is radically changing what, how, where, and when the process of education occurs and are evaluated.

Although digital technology and data in education are producing a raft of changes in policy and practice, much of these developments make ontological and epistemological assumptions of data. As has been argued by many (boyd & Crawford, 2012; Dixon-Román, 2016; Gitelman, 2013; Kitchin, 2014; Manovich, 2011), data are not raw, pure, or objective. They are produced by a multiplicity of entangled forces and never simply convey the purported
referent. There is always already an excess, a beyond, a mutually constituted exclusion, and an unconscious history of data. In other words, as Avery Gordon (1997) reminds us above, there are always already ghosts or hauntings in the seemingly present, an absence of presence, and a complex history and subjectivities. Indeed, the haunting demands sociopolitical significance as Derrida cogently states it “is necessary to speak of the ghost, indeed to the ghost and with it”...“in the name of justice”. In this article, I seek to begin to provide some theoretical articulations of, to, and with the ghosts of data assemblages. Ghosts not in the sense of measurement error in data, as that would invariably reify Modernist truth, but rather with regard to the myriad forces that make up the composite multiplicities of data that produce an excess and a beyond of the purported referent.

While there are many ghosts one might speak to, I seek to focus this engagement with the specters of the sociopolitical relations of racialization of the data. In other work (Dixon-Román, 2016) I argue that data assemblages always already consist of sociopolitical relations. Here, I theoretically try to conjure the hauntings of sociopolitical relations in data by theoretically examining a more fundamental category of its emergence: the (post-)human. By working through Sylvia Wynter’s examination of the cosmogonies of the human and interrogation of the sociogenics of racializations from the constructions of Man, I trace the sociopolitical forces that have formed and shaped the human. Cosmogonies, for Wynter, refer to the myths and narratives of the ontological origin of the human and the ways in which this shapes the histor(icit)y of the human, including the later sociogenic formations of Man as the exclusive white, male, able-bodied, heterosexual rendering all other bodies as nonhuman/death. Hip hop artist Little Wayne reminds us of this mutually constituted categorical exclusion when he states “You told me that they can understand the man I am. So why are we here talkin’ to each other again.” The
misrecognition of his body results from the radical exclusion of his being from the sociogenic codes of the fictively constructed genres of Man. I argue that the constructed myths and narratives of the ontological origins of the human and the later narrative formations of Man produces not just a hegemony of the human but also of its sociotechnical assemblages of data, as it is ultimately this historicity that materializes in the episteme and techné of the sociotechnical assemblages that enable the emergence of data.

Finally, I discuss ways of moving toward alternative futures by working with the biopolitics of data and interrogating their sociogenic codes in order to reprogram and reconstitute the human.

A Hauntology

As a concept, haunting has been of interest for many social and cultural theorists (Barad, 2010; Derrida, 1994; Gordon, 1997). Indeed, the excess, the unconscious, the absence of presence, the mediations, the dis/continuity and dis/jointedness, and the mutually constituted beyond/Other have been the object of philosophical inquiry on hauntings. For science and data, haunting is of particular importance as it threatens to put into question the veracity, “validity”, and produced knowledge about the object of inquiry. Indeed, specters, apparitions, and ghosts are that which is not expected or part of the purported object of inquiry. Thus, the haunting contaminates the haunted products of social inquiry.

The specters are seemingly not present or visible yet form and shape the assemblages of data and knowledge. Positivism writes off the ghostly matter as the “error”, stochastic, or “nuisance” term of a statistical or computational model, but, in fact, there is nothing random about the forces of ghostly matters. Apparitions are an inheritance, an enfolding of the entanglement of space and time, that demand response/ibility (Dixon-Román, 2017). They are
experienced as aporetic, as the im/passable and im/possible, a dis/jointedness and dis/continuity in the reconfiguring entanglement of time, space, and matter (Barad, 2010). As Avery Gordon (1997) states

“In haunting, organized forces and systemic structures that appear removed from us make their impact felt in everyday life in a way that confounds our analytic separation and confounds the social separation themselves.” (p. 19)

The haunting works in the gap of the seeming dis/continuity between social structures/institutions and everyday life. Similarly, for Barad (2010), hauntings are “a dis/orienting experience of the dis/jointedness of time and space, entanglements of here and there, now and then, a ghostly sense of dis/continuity” (p. 244). Undeniably, what is at stake in the hauntings are of political significance; thus, it is necessary that we follow, pay attention to, speak of, to, and with the ghostly matter in order to begin to address or redress their seething presence.

In this article, I am focusing on the hauntings of sociopolitical forces in the assemblages of data. I am particularly interested in those sociopolitical forces that differentiate and hierarchize bodies rendering certain bodies fully human and others as nonhuman. Thus, the data become non-simple heirs to sociopolitical forces demanding address or redress. In order to fully unpack what these hauntings are and how data inherit them, I first discuss what data are and do.

Data as Assemblage

Data are not raw or objective, nor are they latent or truth. Data are not signifiers with a referent signified, nor are they simple mirror reflections of human sociality. Data are ontologies that emerge from myriad intra-actions in a world that is always already in process of becoming. They are provisional events that have the kinetic potential to performatively enact. As in the
Latin root for evidence, videre, meaning to see, data are historically situated, sociotechnologies of vision (Halpern, 2014). Halpern (2014) states “...while the actual sense of vision may traverse history, its organization and arrangement is historical, culturally, and technically specific” (p. 23). Data, I argue, are assemblages.

An assemblage, as articulated by Deleuze and Guattari ([1980] 1987), is a system of organization, arrangement, relations, and connections of objects, actualities, or organisms that seemingly appear as a functioning whole. It's not a collection of actualities, but rather a sticky constellation of a multiplicity of forces producing an event, situation, or composite grouping or body. It is a process that functions in relation and connection with other assemblages. In one of many articulations, Deleuze and Guattari ([1980] 1987) characterize assemblages as the following:

On a first, horizontal, axis, an assemblage comprises two segments, one of content, the other of expression. On the one hand it is a machinic assemblage of bodies, of actions and passions, an intermingling of bodies reacting to one another; on the other hand it is a collective assemblage of enunciation, of acts and statements, of incorporeal transformations attributed to bodies. Then on a vertical axis, the assemblage has both territorial sides, or reterroritorialized sides, which stabilize it, and cutting edges of deterritorialization, which carry it away. (p. 88)

Assemblages are less about meaning in the sense of a signifier and signified, but rather the relations and intermingling of bodies and forces. They are the simultaneous multiplicity of material, semiotic, and social flows. Meaning is not simply from discursive signification but also includes the material flows and doing of matter. They are purposive, not intentional. Assemblages are both material and discursive, organic and inorganic, and treats bodies as
directly connected to all matter beyond it. Bodies are not reduced to the human but include the ontologies and actualities beyond the human. In line with the vertical axis, Bennett (2005) further characterizes assemblages as “a web with an uneven topography: some of the points at which the trajectories of actants cross each other are more heavily trafficked than others, and thus power is not equally distributed across the assemblage” (p. 445). Likewise, Massumi (2002) and Puar (2012) posit that social categories such as race, gender, and class emerge secondary, to the always in process becoming of the world, situated in events, acts, and situations, rather than the assumed fixed characteristics of human subjects. As events or composite bodies, data are assemblages that emerge and intra-act with other assemblages.

The ontology of data was also critically examined by Rob Kitchin in his 2014 book *The Data Revolution*. Cogently, Kitchin argues that data are not independent of ideology, techniques, political interest, economic forces, cultural practices, and context. For Kitchin, data have histories and emerge temporally and spatially. Data are a complex sociotechnical assemblage that, he posits, consists of a multiplicity of entwined and mutating apparatuses. Each apparatus constitutes what is possible and impossible for data, while data intra-actively informs what the apparatus constitutes as possible and impossible within the entangled fabric of social phenomena. Kitchin states, “Data and their assemblage are thus co-determinous and mutually constituted, bound together in a set of contingent, relational and contextual discursive and material practices and relations” (p. 25). Thus, Kitchin provides a framework for the study of assemblages of data.

Table 1. The Apparatus and Elements of Data Assemblage.

<table>
<thead>
<tr>
<th>Apparatus</th>
<th>Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systems of Thought</td>
<td>Modes of thinking, philosophies, theories, models, ideologies, rationalities, etc.</td>
</tr>
<tr>
<td>Forms of Knowledge</td>
<td>Research texts, manuals, magazines, websites, experience, word of mouth, chat forums, etc.</td>
</tr>
<tr>
<td>Finance</td>
<td>Business models, investment, venture capital, grants, philanthropy, profit, etc.</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Political Economy</td>
<td>Policy, tax regimes, public and political opinion, ethical considerations, etc.</td>
</tr>
<tr>
<td>Governmentalities and legalities</td>
<td>Data standards, file formats, system requirements, protocols, regulations, laws, licensing, intellectual property regimes, etc.</td>
</tr>
<tr>
<td>Materialities and Infrastructures</td>
<td>Paper/pens, computers, digital devices, sensors, scanners, databases, networks, servers, etc.</td>
</tr>
<tr>
<td>Practices</td>
<td>Techniques, ways of doing, learned behaviors, scientific conventions, etc.</td>
</tr>
<tr>
<td>Organizations and Institutions</td>
<td>Archives, corporations, consultants, manufacturers, retailers, government agencies, universities, conferences, clubs and societies, committees and boards, communities of practice, etc.</td>
</tr>
<tr>
<td>Subjectivities and Communities</td>
<td>Of data producers, curators, managers, analysts, scientists, politicians, users, citizens, etc.</td>
</tr>
<tr>
<td>Places</td>
<td>Labs, offices, field sites, data centres, server farms, business parks, etc., and their agglomerations</td>
</tr>
<tr>
<td>Marketplace</td>
<td>For data, its derivatives (e.g., text, tables, graphs, maps), analysts, analytic software, interpretations, etc.</td>
</tr>
<tr>
<td>Sociopolitical Relations</td>
<td>Structural relations of power and 'difference', including race, gender, class, sexuality, dis/ability, language, etc.</td>
</tr>
</tbody>
</table>

Source: Dixon-Román (2016); originally adapted from Kitchin (2014).

Table 1 lists each apparatus and their elements of a data assemblage. While Kitchin’s theory of assemblage is informed by Foucault’s concept of ‘dispositif’ (Kitchin and Lauriault, 2014), Deleuze and Guattari’s assemblage is not only posthumanist, imbuing an ontology into the assemblage, it also accounts for sociopolitical relations on the vertical axis. Thus, in addition to each apparatus listed by Kitchin, I also add sociopolitical relations. Sociopolitical relations are the structural relations of power and ‘difference’ that include race, gender, class, and sexuality among others. As I discuss in previous work (Dixon-Román, 2016), sociopolitical relations consist of converging forces of differentiation and hierarchization that discipline the humanity of bodies (Weheliye, 2014). While these are materially and discursively produced structural relations of ‘difference’ they are also one of the many forces producing the multiplicities of data.
Assemblages of data, thus, function in relation to other assemblages. They are not inert productions but rather lively intra-acting ontologies that are in relation and connection with all bodies beyond them. Data are both materially and discursively produced from the multiplicity of forces that include human and more-than-human ontologies as inclusive of the list of apparatuses in table 1. Although imbued with sociopolitical relations of asymmetric distributions of power and ‘difference’, the assemblages of data are produced in events, acts, and situations and not based on inherent human characteristics. This has direct implications for the interpretation of statistical estimates of ‘difference’, in particular, and data, more broadly. First, data are better understood not by an interpretation of their supposed content but rather what they do in relation to other assemblages and, as such, estimates of difference are always relational and connected. Second, data that is not on ‘difference’ is also always haunted by sociopolitical relations. It is the latter argument that I seek to unpack further in this article by leaning on Sylvia Wynter’s principle of cosmogonic/sociogenic causality.

A Cosmogony of Data: Origin Stories of the Human

As an assemblage, data are formed, shaped, and entwined with the histor(icit)y of the human. Anthropology has long understood this, as many of their studies on the cultural communities of the human have often included an account of the community’s narrative, myth, and stories of the origin of the human. As a scholar whose intellectual project has been on the intersections of black feminism, race, science, and the human, with a particular interest in interrogating the hegemony of (Western) Man, Sylvia Wynter (2007) has sought to examine the narratives, myths, and stories of human origin. They are what she calls cosmogonies. Cosmogonies, for Wynter, are the retroactively projected origin stories that both ground a culture’s understanding of who they are and forms and shapes their auto-instituted behaviors and practices.
Origin stories of cosmogonies, Wynter argues, are found throughout the world in different forms. She suggests that they emerge in a process where “first there were myths,” then there “were religions” (both now “relegated to a dim past”), as stages that we have now outgrown, in order to replace them both with “science” (p. 36). One such cosmogony can be found in that of the dominant religious Christian origin story as narrated through Genesis. We see the materiality of religious cosmogony in the images of Little Wayne’s “Mirror” music video via the bodily inscription of “God” and “Fear” tattooed on each of his eyelids as well as through the painted image of himself being crucified, as the barer of Man’s sins. This Christian cosmogony forms and shapes how he sees and understands the world and his being within it. As a second cosmogony, it is the “part-science, part-myth” origin story of Darwin’s theory of evolution. Darwinian bio-cosmogony of evolution and natural selection informed ideas of nature and culture and, subsequently, eugenics ideology and science. Both of these cosmogonies, the creationist and evolution origin stories, have been in tension with one another, have split US society, as well as societal institutions of politics/policy and education. They both have their historical examples of human formations that have materialized in sociopolitically violent events of genocide. On the one, Christianity was used to legitimate the chattel slavery of people from the continent of Africa; on the other, Darwinian evolution is what informed ideas of a superior race of humans and justified the Nazi’s holocaust. These sociopolitical formations of not simply the human but specifically Man are what inform the principle of sociogenics, discussed further below.

The myths, stories, and metanarratives of cosmogonies should not be treated on grounds of the true/false dualism. Although humanly invented, retroactive projections of the origins of the human (and invariably stories of the ontology of Earth), cosmogonies are better characterized as
“representations of origin stories”. They are neither false narratives or a possible window into the truth. Given that once each society’s cosmogony is enacted it must “lawlikely function as the determinant of a nonrecognized principle of cosmogonic/sociogenic causality” that is a symbolic and material encoding of autointitiated ontologies of difference, a self-regulating and self-programmed system, Maturana and Varela’s (1980) autopoiesis (Wynter, 2007). As her point of departure, Wynter develops an ontological account of Judith Butler’s gender performativity where (1) the cultural history of gender would be captured in Wynter’s cosmogonies of the human, including other ontologies of difference, and (2) Wynter is wanting to think about the performatively enacted as autopoetically instituted. As Wynter (2007) states

“Seeing that if, as Leeming seminally points out, such cosmogonies function to enable us to “tell the world and ourselves who we are,” they also, function even more crucially, to enable us to autopoetically institute ourselves as the genre specific “We” or fictive mode of kind, that each of us (as a thereby always already sociogenically and therefore symbolically encoded and cloned “I”) will from now on, preconceptually experience and therefore performatively enact ourselves to be—and therefore are.” (p. 33)

Cosmogonies of the human form our understanding of ourselves, the world, and our behavior. They also inform the order of the social world as an autopoetic institution of ourselves in terms of discursive and material formations of specific kinds of being.

Although analogous, Wynter does make distinct departures from Butler’s theory of gender performativity. Distinct from Butler, Wynter is particularly interested in the history of the human and its iterations of fictively constituted genres of being human. That is to say, while Butler is interested in the cultural history of gender, Wynter is interested in the retroactively projected history of the human and the materiality of socio-politically constituted codes of
different modes of being human. Wynter also makes a sharp departure from Butler’s account of the body. While for Butler (1993) the body becomes materialized from discursive formations, or gender interpellations, Wynter accounts for the ontologies of the body as they become re-programmed by sociopolitical forces, what she calls sociogenics (explained further below). Wynter will even lean on extant scientific theories and knowledge (e.g., neurobiology) in order to explain the re-programming of the body. These are not just two distinct ontological accounts of the body but also materialisms.

As that which forms and shapes our understandings of the world, our autopoetically instituted ways of being, and the social order, cosmogonies also inform science and sociotechnologies. They inform what we study and how we study it. As stated above, Darwinian bio-cosmogony of evolution led to the developments of eugenics ideology and science. This included the development of intelligence test in order to identify fixed innate ability (Gould, 1981). Even despite the initial function of these instruments by French psychologist Simon Binet to identify the mentally impaired in society for purposes of remediation, the US eugenicist appropriated the instruments in order to identify and select the most able and precocious in society for special educational programming and college admissions. Thus, as that which has informed the management, ordering, and sorting of bodies, cosmogonies have also been the backdrop of biopolitics. Not only do cosmogonies inform what and how the human is studied and managed but they also inform the interpretations of what is found. As a researcher, whether with the same or different cosmogony from that of the cultural community they are studying, their interpretations will always be, in part, formed and shaped by their own cosmogony. Moreover, as an autopoetically instituted praxis, cosmogonies inform the engineering and functioning of sociotechnologies, while also being sociotechnologies on their own. The
important implication here of cosmogonically influenced science and sociotechnologies is that
data, as that which is produced and emerges from their doing, are always already formed and
shaped by cosmogonies. Yet, to fully unpack the biopolitical force of cosmogonies on data we
have to turn to examine how cosmogonies inform the inscribed code of sociogenics.

A Sociogeny of Data: The Inheritance of Man

If cosmogonies are the myths, narratives, and stories of human origin, that which forms
understanding of who we are and how we behave and practice in the world then sociogenics are
how sociopolitical relations become materialized in the body/flesh. Sylvia Wynter’s (2001,
2007) sociogenic principle is an ontological account of how the sociopolitical assemblages of
Man and symbolic “difference” become anchored in the ontogenic flesh (Wynter, 2001, 2007).
Here I want to examine how “difference” becomes anchored not just in the ontogeny of the flesh
but of data too via the sociogenics of Man.

As a formation and product of the cosmogonies of the human, Wynter is particularly
interested in a process of more recent phases of the sociopolitically constituted human,
"Renaissance humanism's Man", what she calls Man, and even Western Man, in order to make
clear there is a particular hegemonic conception of being human now that provides the codes of
the sociogenic principle. Man, Wynter (2007) argues, has gone through a process of constitutions
and now is biohumanist *homo oeconomicus*, as informed by the economic theories of Adam
Smith. This sociopolitical constitution of Man is what autopoetically institutes regulatory
practices which function at the same time to “enact [Man's] sociogenic code of *naturally
selected/naturally dysselected* and/or eugenict dysgenic symbolic *life/death*” (p. 13). That is to
say, Man is constituted as the fictive kind of being that is aligned with that which is naturally
selected and symbolic life; all other fictive kinds of being are naturally dysselected and aligned with symbolic death. To this, Wynter further states

“As if therefore Man’s embodied signifiers of Otherness as the negation of its self-concept, … homo oeconomicus—that is, as if the [homo oeconomicus]’s Human Other institutionalized signifiers of symbolic death, i.e., Negro, Indian, Natives, niggers, (indeed, “White Trash” or Trailer park trash), together with Welfare mom, ghetto Black, as the extreme expression of the global category of the non-Breadwinning non-taxpaying “planet of the slums” Jobless Poor.” (2007, p. 38)

By incorporating theoretical work in neurobiology, Wynter (2001) rejects cultural and biological explanations of race (or “difference”) while still accounting for the ways in which the fabrications of race, as sociogenic, become ontogenic via the flesh. Neurobiology, for Wynter, provides a theoretical route to explain how “difference” becomes part of the ontologies of the body via neurochemical processes that reconfigure the experience of the self, making the experience of “difference” seem natural and taken for granted. Thus, the always-already ontologies of the anatomy of the body are positioned in intra-action with the sociogenics of race. As a product of sociopolitical forces, race is then not inherent to anatomical structures but rather those ontologies become racialized through their encounters of racialized events, situations, or acts.

The principle of cosmogonic/sociogenic causality is Wynter’s theory of inheritance and social reproduction. As I have argued in other work (Dixon-Román, 2017), inheritance is a process of more-than-human material-discursive forces of intra-acting assemblages with/in moments, events, and situations of timespace, that always demands a respons(ibility) and entails the (re)appropriation of the inherited. With Barad (2007) and Kirby (2011), I argue that the
matter of inheritance is always already mattering; thus, it is not passively being formed and shaped by the discursive, but rather matter is vibrant, intra-active, and materially reconfigures the world. As Barad (2010) states, “…the point is that the past was never simply there to begin with and the future is not simply what will unfold; the ‘past’ and the ‘future’ are iteratively reworked and enfolded through the iterative practices of spacetime-mattering…” (p. 261). Thinking diffractively through Wynter, the neurobiological ontologies of the body become materially reconfigured from the iterative intra-actions of the body with the sociogenics of Man. These iterative intra-actions of inheritance produce a sedimenting of sociopolitical relations in the ontologies of the body and the autopoetic institution of “difference” as fictively constructed modes of being human that appear natural and reflexive.

In order to more fully unpack the Cybernetic autopoiesis of the sociopolitical relations of racializations in the sociogenic code, Weheliye (2014) explicates

“Consequently, racialization figures as a master code within the genre of the human represented by Western Man, because its law-like operations are yoked to species-sustaining physiological mechanisms in the form of a global color line—instituted by cultural laws so as to register in human neural networks—that clearly distinguishes the good/life/fully-human from the bad/death/not-quite-human” (p. 27).

The “master code” that Weheliye posits of racializations, I argue, are not just enacted via human cultural laws and neural networks but also inherited in data. The data produced from the iterative human intra-actions with the more-than-human agencies of sociotechnical assemblages are both products and producers of the principle of cosmogonic/sociogenic causality. Thus, as the product of a human code of a Cybernetic system of autopoiesis, the ontology of data is formed by a sociogenic code of Western Man.
The inscription of the sociogenic code begins with the social designation of the flesh, before the legal constitution of the body. As Spillers insightfully states “before the ‘body’ there is ‘flesh,’ that zero degree of social conceptualization that does not escape concealment under the brush of discourse or the reflexes of iconography…” (as quoted by Weheliye, 2014, p. 39). Prior to the legal constitution of the body is the formation of the flesh, a formation that is bound by the markings or traces of political violence designating a hierarchy of humanity. The traces of political violence of the flesh are what Spillers refers to as “hieroglyphics of the flesh” that are produced from the instruments or acts of violence such as whips, police brutality, mass shootings, or more subtly from the silence in speech acts. Spillers argues that the “hieroglyphics of the flesh” are transmitted to future generations and is concealed in what is narrativized to be pathologized or biological explanations of hierarchies of “difference.” “Racializing assemblages translate the lacerations left on the captive body by apparatuses of political violence to a domain rooted in the visual truth-value accorded to quasi-biological distinctions between different human groupings” (Weheliye, 2014, p. 40). It is the sociogenic coding via the political violence and disciplining of the flesh that designates bodies as full humans, not-quite-humans, and nonhumans; rendering certain bodies as exceptional and the bodies of the Other as disposable (Weheliye, 2014).

As that which is both an effect and non-simple cause of autopoetically instituted sociogenic coding, the social psychological research on stereotype threat is one important instantiation in education. Stereotype threat is the immediate situational effect of being exposed or primed by a negative group stereotype and the produced anxiety of self-fulfilling that negative stereotype or being evaluated or judged by it (Steele and Aaronson, 1995). Steele and Aaronson (1995) found that these processes suppress performance on standardized educational tests such as
the SAT. In this example, we see the biopolitics of the sociogenic code at work where the alignment of blackness with a negative group stereotype produces already (re-)programmed neurobiological processes of anxiety and subsequently the suppression of performance on the test. Eudell (2015) argues that

“stereotype threat can be positioned in a broader intellectual context as being neither an individual nor an arbitrary phenomenon, but rather can be understood as an organizing and integrating principle of the realization of what it means to Be Human in the present governing terms of biocentrism.” (p. 239)

It’s not a product of an individual phenomenon of being primed by a negative group stereotype but rather a biopolitics of auto-institution. The data assemblages that emerge from questionnaire responses, test item responses, and total test scores, are both performatively enacted by and enact autopoetically instituted sociopolitical relations.

The auto-instituted sociogenic code is that which materially forms and shapes the neurobiological corporeality of being human and, as a result, data. Specifically, the code produces a “different, always autopoetically instituted and fictively constructed kinds of being, and thereby of performatively enacting oneself as optimally a “good man or woman of one’s kind,” (Wynter, 2007, footnote 23, p. 9). Given the ubiquity and reflexiveness of the autopoetically instituted modes of being, the design of sociotechnical assemblages are always formed and shaped by the sociogenic codes of Man. As a product of the iterative intra-actions with/in sociotechnical assemblages, the assemblages of data are always already imbued with sociopolitical relations. Thus, data are most certainly not raw but rather emerge as relational ontologies part of the autopoetically instituted kinds of being from the principle of cosmogonic/sociogenic causality. This conceptualization of data is distinct from the work of
others (e.g., Gitelman (2013) or Kitchin (2014)). Although others account for the ways in which difference often make up data they do not posit the ways in which socio-political relations are working through all sociotechnologies, while providing a Cybernetic theory of their auto-institution via sociogenic codes. Thus, data are heir of the fictively constructed genres of being human, while autopoetically instituting them.

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If data assemblages are part of the autopoetically instituted sociogenic codes then how can we move beyond or work with the ubiquity of inherited sociopolitical assemblages of data? It is not enough to simply remove the statistical demographic of race or its “proxies” from a model (see Berk, 2009 for an example). Race, and its self-identification, is merely a byproduct of a system of sociopolitical relations that differentiates and hierarchizes bodies based on the “representations of origin stories” and the dominant sociopolitical constitution of Man (i.e., racialized assemblages; Weheliye, 2014). As Weheliye (2014) reminds us, racialized assemblages are far more ubiquitous and entangled in the material, semiotic, and social flows of life. Thus, even when race (or any other sociopolitical constitution of “difference”) and its proxies are removed from a model the cosmogonically mandated sociogenic codes are still auto-instituted in the sociotechnical assemblages of data and algorithms. A reprogramming toward reconstituting the human is necessary in order to move toward alternative futures.

Reprogramming the sociopolitical constitution of the human would necessitate a critical examination and interrogation of the sociogenic codes of Man. Leaning on Aimé Césaire, Wynter (2007) proposes the Autopoetic Turn/Overturn as a praxis of science that examines the sociogenic codes of Man as its object of inquiry. Wynter states that it is the biohumanist _homo oeconomicus_ that is to be affected by
“…Césaire’s proposed new and hybrid science of the Word-as-the-code, and whose proposed praxis is that of the Autopoetic Turn/Overtum. This latter as a praxis that will take as the objects of its inquiry, our always humanly invented, sociogenic codes of symbolic life/death, together with their enacted second set of instructions, as mandated and inscribed by our (always, also humanly invented then retroactively projected) cosmogonies, “foundational myths” or representations of origin stories, which have hitherto served to also project our own autopoetic agency onto (also humanly invented) extrahuman Agencies; its object of inquiry, therefore, as that of the processes, and invented sociotechnologies, by means of which we have, from the Third Event of our origin as a uniquely hybrid species of living being, autopoetically instituted our genres of being human and fictive modes of kind, doing so however, according to laws which have hitherto functioned outside our conscious awareness; thereby, outside any possibility, hitherto, of our fully realized autonomy of agency.” (Wynter, 2007, p. 77)

Making the sociogenic codes, its processes and invented sociotechnologies, the objects of inquiry to be critically examined and interrogated will open up the potentialities of rethinking and reprogramming the human. This entails the inquiry of all its fictively constructed modes of being and the foundational myths, stories, and narratives of cosmogonies that have been inscribed in sociogenic codes. The Autopoetic Turn/Overtum is a call to examine the hauntology of data, science, sociotechnologies, and the assemblages of sociopolitical relations.

Hauntologies conjure that which is seemingly absent yet already present. It is the excess, the beyond, the seeming erasure, or the mutually constituted Other of the referent that remains present as ghostly matter. As Lisa Blackman (2015) argues, the haunting of data is always of political significance.
“The hauntological potential of data and the question of how we reanimate what gets erased from particular practices of remembering and forgetting is a crucial one for cultural theorists committed to exploring the politics of data.” (Blackman, 2015, p. 204)

Thus, the hauntology of data that is called upon by the Autopoetic Turn/Overturn is an examination of the excess, the beyond, or the mutually constituted Other of the referent of data and its political forces. How might the praxis of the Autopoetic Turn/Overturn be conducted on data? While I have developed a rethinking of the onto-epistemologies of quantification in other work (Dixon-Román, 2017), a more focused work on developing a hauntology of data that conjures, examines, and interrogates the specters of the sociogenic code of data assemblages is needed. Barad (2010) provides us some initial directions via her diffractive methodology, but not on data and not part of the praxis of the Autopoetic Turn/Overturn.

The autopoetic institution of fictively constructed genres of being human is what produces educational inequities. Education policy would benefit from Wynter’s afrofuturist proposal to make the sociogenic codes the object of critical inquiry in order to reconstitute the human. The architecture of education policy has long been constituted by the sociogenic codes of Western Man rendering some students as good/human/able and other students as bad/nonhuman/disable. These sociogenically constituted architectures also form the sociotechnologies and practices producing various forms of data assemblages that are the heirs of and haunted by the autopoetic institution of Man. To overturn this haunting it will necessitate an interrogative inquiry of the specters of the sociogenic codes in order to reconstitute the student and by implication the episteme and techné of the sociotechnical assemblages of education.

With the pervasive and dominant focus on data and/or educational equity, research in education is a prime field for a program of research on the Autopoetic Turn/Overturn. Indeed, as
Derrida reminds us, justice demands that we speak of, to, and with the ghostly matter of the cosmogonically mandated sociogenic code in order to enable the conditions toward alternative futures.
References


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