

Plasticity and/as Race: Rethinking Philosophy's Relationship to the Life Sciences

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Abstract

This essay engages Catherine Malabou's provocation that the life sciences can provide a materialist theory of thought (plasticity) that can reimagine agency, identity, and freedom. Paying particular attention to the science of epigenetics and its potential rethinking of origins and history in the name of a radical futurity, I argue that in fact it shows that plasticity is the very mode by which power is enacted and reproduced, specifically anti-black notions of race. I conclude with a brief discussion of Zakkiyah Jackson and her theory of plasticity, to show that Malabou's argument rests on flawed assumptions about history, the material, and social change.

Keywords: Plasticity, Race, Epigenetics, Materialism, History, Catherine Malabou, Zakkiyah Jackson.

1. Introduction

As philosophers creatively address the nature of bodies, matter, and lived experience, they increasingly turn to scientific theories to help us understand agency and becoming as emplaced, open-ended, and differentiating. One such scholar is Catherine Malabou, who turns to epigenetics (among other areas of the life sciences) as offering a theory of the body that can disrupt any notion of stable, reproducible form (see also Sullivan 2013).

Malabou argues that scientific theories, more than simply pragmatic tools in managing modern life, offer a way to imagine new worlds, new ways of being. Making a distinction between plasticity as flexibility (the conventional understanding) and plasticity as rupture (her preferred use of the term), Malabou asks us to consider how the former is the logic animating biopolitical applications of scientific theories while the latter marks the potential of the mind to imagine a different world, to actually *be* different despite (or because) of the experience of oppression. The flexible mind is one that adapts to the demands of power, whereas the plastic mind takes new form in such a way that what it took to be

common sense is no longer tenable. More than mere metaphor, the plastic brain has the literal capacity to resist by way of taking new form, providing, we might say, biological evidence of what utopian theorists say is the mind's capacity to perceive/conceive a world that (paradoxically) is impossible given our cognitive and affective attachments to present-day material arrangements.

Plasticity, Malabou says, "ought not to be confused [...] with the mere capacity to act" (Malabou 2008: 48; ellipses mine). Her stance relies on making a distinction between neoliberal biopower and a revolutionary praxis of plasticity. In Malabou's reading of them, theorists such as Foucault and Agamben see the politicization of life as unidirectional: biology is simply a resource upon which to draw for the practices of power (Malabou 2016: 430). Malabou posits instead that such a reading reduces the biological sciences to those aspects amenable to regulation, control, and the like and so misses the possibility of its concepts to animate and fuel resistance to practices of power and control.¹

In what follows, I think through her provocation, paying particular attention to epigenetics, one of the life sciences that Malabou turns to so as to advance her philosophical intervention. While epigeneticists themselves may not claim the radical indeterminacy of plasticity (indeed epigenetics is, for the most part and where humans are concerned, the explanation of normal and expected development), Malabou wants to develop a politics that emerges from epigenetic concepts even if in practice what we see is biopolitics or "flexibility". For her, epigenetics presents us with a notion of plasticity wherein the emergence of form appears to not rely on a pre-given or static cause or context, what researchers will call the "potential" of the biological being. By contrast, I argue that despite (or even because of) epigenetics' promise to radically rethink the notion of "origin" and by extension the future (epigenetics holds that phenotypic change can occur without changes to DNA thus displacing cause for context), it in fact shows that plasticity as rupture is not the liberatory praxis that Malabou hopes for. Put another way, plasticity as theorized by the life sciences is a different mode of biopolitics, one that privileges speculation over reproduction. The plasticity of epigenetics may in fact not be biopolitics at all even if its effects are similar to those of neoliberal management and its optimization and disposability of racialized and gendered bodies.

Engaging the question of race and racialization specifically, we will see that plasticity-as-rupture is the very mode in which power is enacted and reproduced. To demonstrate this, I follow my analysis of epigenetics with a discussion of Zakiyah Jackson's theory of plasticity, to show not only that Malabou's theory rests on flawed assumptions about history, the material, and social change but how their rethinking can gesture towards a different understanding of plasticity as freedom. Jackson, I argue, forwards a theory of plasticity that holds the past as a condition of possibility for the future and so avoids a materialism that denies what she and others have called the "afterlife" of slavery. Speculation in this account is a futurity based not on an effacement of what comes before but on a condition of possibility that can augur new materializations (material or aesthetic) and in a way that does not re-enact the very anti-blackness upon which previous forms depended.

If plasticity is the mode by which something like racialization is enacted, it puts pressure not only on Malabou's wager that epigenetics' premises are intrinsically

¹ And is in line with the ways in which, she says, Foucault at least wants to reserve some capacity of the body as such to be the site of resistance.

radical insofar as they envision a line of flight away from biopolitical infrastructures of control, but also on claims that “environmental” or “social” approaches to the effects of racism are, by definition, superior to those of a hereditarian nature. To make my case, I explore the theory of materialism upon which Malabou’s intervention depends, concluding that Jackson’s theory of “mutation” offers a different understanding of plasticity that will question the very ways in which anti-black theories of racial difference are enacted.²

2. Plasticity and the Body/Mind

Despite the revolutionary potential of plasticity, the problem, says Malabou, is that in popular discourse, outdated models of the brain prevail and so we are not aware of the immanent possibilities of plastic transformation therein. And in science itself, the preoccupation with description/explanation over and against prescription or even open-ended speculation means that scientists themselves are unable to see the possibilities of plasticity over and against flexibility. “To produce consciousness of the brain”, she writes, “is not to interrupt the identity of brain and world and their mutual speculative relation; it is just the opposite, to emphasize them and to place scientific discovery at the service of an emancipatory political understanding” (Malabou 2008: 53).

To make this claim, Malabou first revisits neuroscientific engagement with the relationship between the brain and the mind (“the neuronal and the political”), or put another way, the brain and sense of self (Malabou 2008: 55). Ultimately, she says, neuroscientists are unable to explain the nature of the relationship.³ Yet this gap in explanatory power is precisely where Malabou sees the potential for looking to neuroscience as the basis for freedom. Plasticity, says Malabou, is both the “taking on” of form and the “annihilation” of form (Malabou 2008: 70). Continuity between the neuronal and the mental, then, is anything but seamless; it is instead possible because of the breakdown of form which is its condition of possibility. Malabou points to the puzzle of homeostasis and self-generation, characteristics of systems as both sources of maintenance and change that can help us embrace the very contradictions that are otherwise ignored or resolved by scientists who prioritize explanation and prediction. She explains,

The plasticity that situates subjectivity between maintenance and construction or production of newness is not smooth. The “chain” that leads from elementary life to the autonomy of a free self, capable not only of integrating the disturbances arriving from the exterior without dissolving itself but also of creating itself out of them, of making its own history, is a movement full of turbulence. Homeostatic energy and the self-generating energy are obviously not of the same kind. From this perspective, if the brain is really “always caught up in the act of representing to itself its own change”, one might suppose, at the very core of the undeniable

² It is not possible here to engage all of the nuance of Malabou’s and Jackson’s writings. The goal of the present essay is to explore the different meanings of “plasticity” and question whether the *biological* body can ever be that which provides inventional sources for imagining and enacting new worlds.

³ I am reminded of the debate in philosophy of science about consciousness, for which Searle concludes that, more or less, we will never understand something like consciousness which is emergent from the materiality of the brain yet can never be reduced to it.

complicity that ties the cerebral to the psychical and the mental, a series of leaps or gaps (Malabou 2008: 75).

Malabou is quite clear that the implications of her intervention are that philosophers and biologists alike should rethink their relationship with materiality and politics respectively. As I read her, philosophers in particular should entertain what a materialist approach to thought would be especially since we come to embrace current social relations as common sense by way of neural networks that, although they can be disrupted, can easily reestablish themselves—similar, we might say, to what Sylvia Wynter says is the neurological outcome of reward and punishment structures that help keep anti-black habituations secure (Wynter, 2001). For biologists, the challenge would seem to be to focus on the exception rather than the rule and so theorize from outliers as opposed to searching for ways to render them intelligible according to the hypotheses at hand (or perhaps we could say, in Kuhnian fashion, according to the reigning paradigm). More importantly, it is to see their conceptual work as relevant to the political, which is to say, that if revolution is dependent in part on the rematerialization of our bodies (see Chaput 2020; McMahon 2018) then scientific evidence for such a project will only bolster its credibility (and its allies).

“Materialism”, for Malabou, presumably means brain matter, but there is still the question of what theory of change animates her argument about plasticity and freedom. For instance, one interpretation is that new forms (e.g. neural networks) emerge sans any clear origin (the “leaps” or “gaps” between older and newer senses of self). Malabou’s description of neurological research that cannot explain why, after the experience of trauma, some persons revert back to their previous selves while others experience a radical shift in perspective (what resilience scholars have called “post-traumatic growth”; see Manove et al. 2019), suggests that new forms announce themselves unexplained yet should not be a cause of anxiety. Rather, researchers, intellectuals, and individuals alike should seize upon this potentiality of the brain/mind. Of course, what this looks like in practice is another matter: what resources, broadly construed, need to be in place to enact plasticity and not mere flexibility (or we should say, maintain plasticity in those transformational moments during and after trauma)?⁴ But practical matters aside, the question of origin is important theoretically, insofar as if Malabou wants to advance a materialism over and against idealism, then to suggest that forms emerge sans origin is to assume an ontology of the body that can too easily devolve into a kind of pseudo-idealism.

Yet Malabou is careful to say that her theory of plasticity avoids the idealist trap. Form emerges from previous form even if, paradoxically, those conditions of possibility are erased in the process. “The sculpture of the self is born from the deflagration of an original biological matrix, which does not mean that this matrix is disowned or forgotten but that it cancels itself”, she writes (Malabou 2008: 74).⁵

The emergence of new forms, an emergence that is also a contradiction/negation, is, for Malabou, the promise of the life sciences: a break from the past that is nevertheless a materialist theory of what constitutes or enables such a break.

⁴ In resilience research this brings up a thorny conceptual issue: is someone resilient because they can actively deploy resources available to them or because they do not need such resources at all?

⁵ It seems that plasticity is productive and generative in ways different from a Derridean aporia.

Malabou concludes an essay on “biological” and “political resistance” by claiming, for example, that

Biological potentials reveal unprecedented modes of transformation: reprogramming genomes without modifying the genetic program; replacing all or part of the body without a transplant or prosthesis; a conception of the self as a source of reproduction. These operations achieve a veritable deconstruction of program, family, and identity, that threatens to fracture the presumed unity of the political subject, to reveal the impregnable nature of its “biological life” due to its plurality. The articulation of political discourse on bodies is always partial, for it cannot absorb everything that the structure of the living being is able to burst open by showing the possibilities of a reversal in the order of generations, a complexification in the notion of heritage, a calling into question of filiation, a new relation to death and the irreversibility of time, through which emerges a new experience of finitude (Malabou 2016: 438).

We can infer from this passage that the life sciences produce not only a different experience of embodiment but a material basis for articulating a different politics (what I take her to mean when she says that plasticity is the basis for thinking). Returning to the example of the brain/self, not only is the brain capable of (self)transformation, that very potentiality clears space for work on the individual and others to keep this space open. There is, then, an implied dialectic between the concrete and the abstract, the corporeal and the ideal. More to the point, the one implies/ necessitates the other. And so, like other materialist theories of the subject (e.g. Marxist), bodies are historical objects from which constructions of political subjectivity are based (and are possible at all). Where Malabou seems to depart is that there is no necessary telos to such political work on the self/collective⁶, a claim not unfamiliar to utopian theorists who maintain that keeping both the future and the political subject of that future open is the best way to disrupt the otherwise reproduction of the status quo and its affects, subjectivities, and relations (Weeks 2011).

Nevertheless, as I suggested at the beginning of this essay, it may be the case that Malabou’s materialist understanding of the undecidability of being/becoming is precisely how power exerts itself. In other words, what if plasticity (as speculation), in addition to flexibility (as biopolitical control), is a mode of being that fails to escape the logics wherein power reproduces itself? In the book *Becoming Human*, Zakkiah Jackson departs from Malabou by advancing a theory of plasticity which holds that power is not dependent on the reproduction of form as much as it is on its impossibility. As philosophers and scientists alike have attempted to secure race with existential and/or biological theories of difference (often buttressed with aesthetic textual evidence) what has emerged is both the impossibility *and* persistence of race over time. The impossibility of form (plasticity), we could say, is the condition of possibility for practices of racialization, what Jackson describes as “a mode of transmogrification whereby the fleshy being of blackness is *experimented with* as if it were infinitely malleable *lexical and biological matter*, such that blackness is produced as sub/super/human at once, a form where form shall not hold: potentially ‘everything and nothing’ at the register of ontology” (Jackson 2020: 3).

⁶ I am being generous here with word “collective” as it is all but certain that she lays claim to a theory of change beyond the level of the individual/self.

But first, how is epigenetics and its guiding assumptions about the body, time, and change, an example of the anti-black, racializing plasticity that Jackson theorizes?

3. Epigenetics, Plasticity, and Race

Malabou cites epigenetics as an example of a radical plasticity in which development refuses the necessity of origin, in this case DNA. Indeed, the curious thing about epigenetics is that it both indexes the materialization of oppressive structures (e.g. racism) at the same time that it enacts an ontology of undecidability that, in theory at least, opens up ways to think beyond the reproduction of structure. Nevertheless, as I will show, plasticity is an ontology that is the very condition of possibility for the construction of race as anti-black othering which will trouble Malabou's distinction between biopolitics and plasticity.

But first, what is this area of research broadly referred to as "epigenetics?" Although not well known in lay circles, the term denotes two different phenomena: first, "epigenetics" refers to the role of chromatin in an organism's biological development. Chromatin is the entirety of material found in the chromosome (DNA and proteins) and is assembled such that its contents can be tightly packed or expanded so as to allow for the transmission of genetic information. So, for example, during certain phases of development, chromatin expands in the cell allowing for DNA to unfurl and replicate, a complex and not very well understood process. Although much of chromatin research is about normal biological development, what it nevertheless also shows is that there are a variety of actants in the cell that are as important, if not more important than DNA—actants that in turn can be affected by environmental agents outside of the body. So when writers say that epigenetics privileges environment over genes, they mean both the cellular and extra-cellular environment.⁷

The second use of the term denotes theory of inheritance: that changes in chromatin during an organism's lifespan can be transgenerationally inherited by offspring. There is ample evidence for this in plants, although evidence in mammals is sparse, if it could be said to exist at all.⁸ The long-standing and widely accepted view is that in humans, epigenetic marks are stripped away during reproduction—chromosomes are simply "naked" DNA.⁹ Nevertheless, studies that observe patterns of disease and other developmental abnormalities across generations are cited as evidence that epigenetics may be playing a role in human transgenerational transmission of acquired changes such as methylation marks.

⁷ In terms of lifespan development, epigenetics is simply the study of expected outcomes (i.e., that human development can be so complex yet largely predictable) involving multiple actors and multiple pathways of development. Waddington's metaphor of the epigenetic "landscape" captures the contingency/nonlinearity and predictability that is part and parcel of biological development, what is also called "canalization". See Waddington 2015: 274. As always, I remain agnostic as to whether epigenetics is the most accurate/best theory of human development; what concerns me here is how this scientific model relies on a particular logic that departs from earlier models often called "genetic determinism".

⁸ Examples include corn and Arabidopsis.

⁹ Evidence in research involving mice suggests the possibility that methylation changes are meiotically stable. (Methylation is the process by which a methyl group binds to a substrate. Methylation plays a role in the regulation of gene expression.) Moreover, future research could reveal ways in which other changes in chromatin other than DNA methylation are transmitted via gametes in mammals.

The term “intergenerational” is further used to denote a suspected cycle of damage experienced in the womb: when pregnant persons experience stress such as that related to racism, so the theory goes, the biological effects of that experience can alter the epigenome of the fetus thus predisposing the child to increased risk of health and behavioral abnormalities.¹⁰

This particular instantiation of the idea of “inheritance” comes from the “developmental origins hypothesis” popularized in epigenetics circles by famine studies (Heijmans et al. 2008).¹¹ Indeed, research on the effects of famine is often cited to buttress the claims that epigenetics is the science of bodily “memory” (Kuzawa and Thayer 2011). In one Dutch famine study, researchers observed evidence of changes in methylation patterns in children who were exposed to the stress of famine early in the gestation period.¹² The purpose of the study was to locate markers that could be more definitive of the relationship between nutritional stress early in prenatal development and disease risk throughout the lifespan (high blood pressure, heart disease, and even some mental health conditions such as schizophrenia) so as to develop better surveillance and interventions (Kaati, Bygren, & Edvinsson 2002 ; Waterland & Jirtle 2003). Researchers further speculate that these prenatal epigenetic changes may be passed on to future generations, speculation grounded in the observations that these later generations either exhibited the same health risks or failed to exhibit the expected improvement in measures such as birthweight, despite the studies’ limitations.¹³

Landecker and Panofsky will say that a logic of “perpetuation” is at work: the preservation of biological characteristics does not even require proof that a discrete cause is at work. The epigenome, we see, is theorized as a complex unfolding in which genes are potentialities and the body’s past, present, and future are all in play (Landecker & Panofsky 2013).¹⁴ Put another way, the epigenome—as process—is disarticulated, semiotically, from a stable referent (even causality itself is absent) and so can signify a set of historical forces and events while at the same time leaving the future open. This then results in a range of scientific endeavors, including how chromatin patterns are passed on transgenerationally in

¹⁰For an in-depth look at the deployment of the “maternal” throughout the history of the life sciences, see Richardson 2021.

¹¹ The developmental origins hypothesis arguably set the stage for what Mansfield and Guthman (2014: 4) call the emergence of epigenetics as a “reproductive science”. What epigenetics promises to do is find the exact mechanisms by which experiences in the uterus play a role in developmental outcomes.

¹² They did not examine whether those methyl patterns were detected in the offspring of children who had been exposed. See Heijmans et al. 2008.

¹³ Limitations include the following: the research shows epigenetic effects of prenatal experiences across one lifespan, not transgenerationally; it is not clear exactly how methylation plays a role in the developmental effects they observed, if at all; and the authors deploy some odd and confusing reporting practices that don’t instill confidence. For example, they report that there is “more methylation” of a particular gene among those in utero during the famine. The problem is, a gene is either methylated or it isn’t. Godfrey et al. 2007 is an example of suggesting transgenerational inheritance in humans based upon observable patterns of disease. I argue that this is not an example of hypothesizing as much as it shows how the absence of causality in epigenetics models is a condition of possibility for racial speculation.

¹⁴ One researcher defines it thusly: “Epigenetic changes are defined as alterations in gene expression that are self-perpetuating in the absence of the original signal that caused them” (Dulac 2010: 728).

corn, how (we think) the stresses of famine and other trauma can be passed on to multiple generations, how the co-called epigenetic clock can measure biological age (which can be different from chronological age), and how distinct windows of development can help epidemiologists intervene at the most effective moments to ensure positive health outcomes. In all of these cases, with no stable referent, the epigenome can signify structures, experiences, and practices, all with the purpose and effect of constituting them as objects capable of observation, experimentation, and speculation.

Indeed, by privileging intervention and optimization, epigenetics promises a level of biopolitical management that genomics has never achieved, gene editing notwithstanding (and even if gene editing does meet expectations, it is a model of development that still anchors development in a single referent, the genome). As biopolitics theorists such as Paul Rabinow and Nikolas Rose have argued, bio-power constitutes populations—not individuals—by way of the identification and massification of biological markers. These can be single markers such as alleles associated with particular diseases or aggregates of markers that characterize the life and death chances of groups of persons at various scales (local, national, etc.). Such expert knowledge then enables particular interventions to optimize the health and vitality at the level of population, which is to say, justified on the basis of group characteristics and dynamics and often tied to geopolitical interests, themselves tied to the economy. Although not exclusively a phenomenon of the emergence of genomics, the latter exemplifies both the constitution of populations as well as their management.

Epigenetics augurs a different mode of biopolitics, from risk based on immutable markers to something much more diffuse. As Mansfield and Guthman observe, even though epigenetics as a basic science is concerned, simply, with natural and expected “variation”, the latter nevertheless begets a logic of manageability: “if biology is not fixed but plastic”, they write, then it can be altered. Indeed, through epigenetics, biological life can be purposely *directed*” (Mansfield & Guthman 2014: 10). And the grounds for intervention? An abiding interest in the “abnormal”:

Epigeneticists do not seek only to understand variation or the causes of abnormality—leaving questions of what to do to others. Rather, they also seek fixes for abnormality. That is, as scientists seek epigenetic *marks* they are not only looking to diagnose, but they are simultaneously seeking a *target*, a site of intervention, something in the body to fix. Evident in published research is the fervent hope for epigenetic therapies as a promising tool in the toolkit of personalized medicine (Mansfield & Guthman 2014: 11).

“Epigenetic improvement”, they argue, “is about how the expansive past is connected to the expansive future, through this narrow molecular window” (Mansfield & Guthman 2014: 10). To be sure, the socionatural forces that constitute “environment” are themselves further broken down to scale. “Racism” as environment, for example, can denote its institutional structures but also the individual behaviors that result from it.¹⁵ Intervention, then, is seen as both a treatment

¹⁵ Take, for instance, the literature on “weathering” which suggests that the experience of racism results in maladaptive parenting behaviors which then furthers the cycle of damage. See Sullivan 2013.

and preventative, and can be pharmacological or more expansively, behavioral (Mansfield & Guthman 2014: 13).¹⁶

While it may seem as though epigenetics devolves into just another way to “mark” someone (and indeed the fear is that “bodily memory” functions much like, if not the same way as an inherited gene), it nevertheless destabilizes fundamental assumptions about time and space, form and context. With no stable referent to ground the terms “gene” (or “environment” for that matter) we can say that past, present, and future are held in suspension, collapsed altogether, or reordered, rendering the epigenome an indeterminate, material-discursive site of becoming over being. Take, for example, the particular way in which “environment” is mobilized. “Environment” in the epigenetics paradigm is spatial (the built environment, the uterus) and “socio-natural” insofar as it encompasses everything from nutrients, toxins, behavior, and structural disadvantage. It is also uniquely temporal. For example, the so-called “epigenetic clock” destabilizes linear time and its relation to space insofar as it helps elucidate why it might be that persons of the same chronological age have different “biological” ages, which is to say, “appear” one age but are “really” a different one. Not only then, does epigenetics collapse diachronic and synchronic time by way of bodily memory and the displacing of bodily boundaries with perpetual environmental change, the clock renders the time of epigenetics divergent, insofar as phenotype can follow one temporal trajectory while interior biological marks follow another. In this way, the epigenetic clock allows the researcher or clinician to literally see a future life course that is belied by other corporeal markers, making epigenetics not just a science of becoming but a speculative predictor of an individual’s future.¹⁷

All told, the ways in which epigenetics collapses, suspends, and reorders time/history displaces older understandings of the gene as discrete marker for an ontology of potentiality. As Waterland and Michels explain, even the simple Lamarckian definition (inheritance of acquired characteristics) is not sufficient for capturing the ways that epigenetics shows development to be open-ended contingency:

Rather than heritable changes in gene expression, epigenetics encompasses heritable changes in gene expression potential [...] epigenetic mechanisms determine not only constitutive gene expression but also the potential to appropriately alter gene expression in response to extracellular signals. This focus on gene expression potential also distinguishes bona fide epigenetic changes from expression changes that, although sustained through mitosis, are actually induced by extracellular changes (Waterland & Michels 2007: 366. Ellipses mine).

The biopolitical management model of epigenetics, then, may simply be the outcome of scientists and other stakeholders (regulators, policy-makers and the like) not realizing the full potential of a theory of development that, at its core, rests on a radical indeterminacy—an open dialectics, if you will—in which future form is paradoxically only possible because of what comes before even as it seems to burst the bounds of any constraints from this relation. If genomics’ logic is spatial/synchronic, epigenetics is temporal/diachronic. Returning to the notion that plasticity is a materialist theory of thought and change, if I understand Malabou correctly, history is overcome in the enactment of new form and so, theoretically,

¹⁶ For an example in the epigenetics literature, see Kuzawa and Thayer 2011.

¹⁷ See for example Horvath 2016.

at least, we can avoid reproducing power structures and their interests. But what if epigenetics shows that radical indeterminacy is in fact the condition of possibility for both flexibility and plasticity? Despite Malabou's contrast between the two with the former denoting potential and the latter constraint and control, the distinction, in the end, does not hold. Indeed, what seems to animate epigenetic science is the possibility of transforming bodily becoming into (an endless) governable, manageable process. "Who we are" is no longer reduced to genes (a product of destiny due to the accidents of evolution and/or the outcome of human influence on reproduction patterns), rather "who we are" becomes an expansively malleable product of human agency and ingenuity with multiple pathways for surveillance, assessment, and intervention, and across multiple temporalities. The mode of biopolitical management that epigenetics makes possible is thus much more sweeping than that of the biopolitical management enabled by genomics. Since the epigenome is the social *and* the biological at once, evaluating and tinkering with it becomes a way to manipulate and manage the social and in ways unforeseen. For although the past is situated as that which can and should be overcome rather than merely managed, that past is conceptualized as a pathology that marks the body and in a way that limits the imagination of the expert tasked with designing the appropriate intervention. The past is both static/transhistorical and unhinged from a discrete cause, a paradox that opens up, rather than forecloses, the possibilities for structures of power to constitute and reconstitute populations, animated by a logic of speculation not reproduction.

Malabou's wager seems to be based on the unstated assumption that discipline and control are possible because of the ways in which history is reproduced: new form becomes simply a different way of exercising power. For instance, ideas of race and their putative material/objective basis are not canceled but rather provide the structure for new forms to emerge that, while novel, nevertheless enact similarly harmful racializing and anti-black effects.¹⁸ So for example, the idea of race shifts from phenotype to genotype, from eugenics to biopower (Rabinow, 1992; Happe, 2013).¹⁹ In epigenetics, it is temporality that massifies bodies, linking individuals with others through an expansive past and open future. Evolving epigenetic profiles may be linked to an individual body, but that body is not taken in isolation. Rather, those marks index the body's history, including such things as experiences in the womb which are themselves tied to another body—the gestating parent. And the experiences of the gestating parent have their own history and connection to others, especially if we understand the experience of trauma as reproduced across generations, either through inheritance or the reproduction of material structures of over time. The fetus, for instance, "becomes a crucial node

¹⁸ To be clear, I am not aware that Malabou addresses race specifically; I am trying here to work through how her theory of plasticity might help us understand both the persistence of racialism and the possibility for its destabilization.

¹⁹ What is confusing in Malabou's writings is the distinction between "form" as that which is proposed by the life sciences and "form" as that which emerges as a result of political work on the self and the body politic—work that is transformative in its effects. Put another way, there is an implicit distinction between form as ideology and form as materiality. I remain agnostic about whether we need to explain what, if anything, happens to our brain when we engage in revolutionary praxis (or we should say, what also needs to happen to make revolutionary praxis possible to begin with); for the purposes of this essay, I am concerned with how the ideology of form in the life sciences will inevitably sabotage political work in ways that Jackson's notion of politics and "mutation" does not.

in space-time, simultaneously archiving the past while becoming the future” (Mansfield & Guthman 2014: 11).²⁰ Whether the model at play is based on development or inheritance (wherein the reproductive cells carry epigenetic marks), “the epigenetic *outcomes* of exposures in one’s own lifetime become *factors* for future generations” (Mansfield & Guthman 2014: 7).²¹

Kusawa and Sweet (2009) write that the new methodology afforded by epigenetics can fill in gaps left by genomics, epidemiology, and sociological approaches more broadly, which is to say, that neither genomics nor sociological/epidemiological research can fully explain the relationship between racism and maladaptive behaviors. Rather, response to stress is neither solely genetic nor solely “learned”—rather, it is passed on through reproduction by way of the placenta wherein the biochemical stress response of the gestating parent influences the development of the fetus which can then be passed on when the child-as-adult biologically reproduces. This claim, that racial health disparities are the result of formative experiences in utero (with the uterus standing in for “environment”), while “social” in theory, nevertheless contributes to a racial/racist ontology of plasticity: racialized persons become one with the environment. Race, we can even say, *is* environment. Over and against discrete markers (genotype or phenotype),²² race dissolves into so many contingent and intersecting contexts at various scales. This is a spatial phenomenon and temporal, although not only historical or even presentist but also speculative: for this research indexes not only how the past becomes the present, but provides the scientific basis for predicting future disparities in health and well-being more generally. Within an ontology of becoming, then, the past becomes a condition of possibility for the present and future. A person’s experience of trauma and disease in the present is never just that—it is inextricably tied to past experiences, both theirs, their predecessors, and their progeny. Life in the present becomes massified or aggregated with that of other lives and across many temporalities. While plasticity as flexibility has typically described space/form, epigenetics suggests that plasticity is also a temporal ontology in which the past can both constrain and enable the future (with the future

²⁰ Explaining the concept “phenotypic inertia”, Kusawa and Thayer write, “Research on the maternal determinants of birthweight and breast milk leptin hints at a capacity for biological ‘learning’ in which the offspring does not modify metabolism and growth in response to the environment itself, but instead entrains to maternal cues conveyed via nutrients or other signals across the placenta *in utero* and via breast milk during lactation. This tendency for plasticity to respond not to current ecological signals, but to parental cues, which tend to integrate past environmental experience, has been defined as phenotypic inertia. The value of this transgenerational system is that it calibrates offspring biology to something akin to a running average of conditions experienced in the recent past, which in an unpredictable environment provides a best guess of average conditions likely to be experienced in future years” (2011: 227-28).

²¹ For instance, as Kusawa and Thayer (2011) describe it, “As illustrated earlier, classic examples of developmental plasticity involve permanently modifying a trait in response to the organism’s own environmental experiences during growth and development. In the many new examples of early-life epigenetic sensitivity, in contrast, the biological system is not modified in response to the environment itself, but to signals or cues of past environments as experienced by ancestors, most notably the mother. From this perspective, what makes fetal developmental plasticity distinct from conventional plasticity is the time depth of the information to which the developing body responds” (225).

²² To be clear, there is no such thing as “race”, but the term is used and the idea emerges in discourses of “racial” health disparities. See Happe 2013; 2019.

never being bound teleologically and so unhinged from history as such). This is to say, that the paradox of epigenetics is that plasticity-as-rupture is in fact the very condition of possibility for the exercise of power.

Even if we entertain the possibility that plasticity-as-rupture can be divorced from particular aims, which is to say, that it can be distinguished from biopolitics for which the fantasy of rupture inevitably ends up being harnessed to goals that reflect and bolster the status quo rather than rethink it, such an account in effect disavows history, replacing a critical materialism with an ontological account of plasticity. And an ontological understanding of plasticity means we efface the fact that the very idea of bodily becoming—without past and an open future—is only possible because of discrete historical events, in this case anti-black notions of race. Indeed, epigenetics draws on a long history of speculative logics in the social and biological sciences. Whether it be 19th century quasi-Lamarckian arguments about race, culture, and defect (Stocking 1962; Schuller 2018) or Progressive Era projects such as Raymond Pearl’s experimental research speculating on the benefits of population control²³ and Frederick Hoffman’s actuarial predictions of “race decline”,²⁴ racism has never been limited to the purview of strictly hereditarian claims of immutable pathology. Rather, “environment”, largely construed, has long been a mode of linking past and future to speculate on, and attempt to manage, racialized populations. This is all to say that plasticity, as a logic, has never not been tied to racialization and anti-blackness whether we mean that plasticity is a condition of possibility for race or vice versa. Acknowledging this history both helps us understand why epigenetics devolves into a discourse of pathology and neoliberal fantasies of control as well as troubles Malabou’s embrace of a radically speculative plasticity that disavows this history.

4. Toward a Theory of Plasticity and Difference

Despite my wager that the life sciences, and epigenetics in particular, relies on a temporality that troubles Malabou’s argument about the destruction of form, I nevertheless want to consider the question as to whether or not the racializing and anti-black discourses of neoliberal health constrain our otherwise collective ability to prevent plasticity from devolving into flexibility. This further begs the question as to whether or not the life sciences as such can be the source of political work: is plasticity-as-rupture in science fundamentally different from plasticity-as-rupture in other contexts?

Returning to Jackson, plasticity, she says, is “a praxis that seeks to define the essence of a black(ended) thing as infinitely mutable, in antiblack, often paradoxical, sexuating terms as a means of hierarchically delineating sex/gender, reproduction, and states of being more generally” (Jackson 2020: 11). So, for example, Sara

²³ Murphy writes “[...] the *Drosophila* bottles and graphical charts of Pearl’s work offered a scopic regime of temporal forecasting in which individual lives are but a flicker and what comes into view are tendencies and relationships only perceivable in aggregation, at the macrodimension, across generations (2017: 12).

²⁴ Lawrie writes, “Freed from the supposed protection of slavery, the congenitally criminal, mongrel, and tubercular Negro seemed destined to expire amid the mechanized rhythms of modern industrial civilization according to this view. The imperatives of rapid industrialization, imperialism, mass consumerism, and white supremacy necessitated the creation of the ‘vanishing Negro’: a debased inferior ‘other’ against which the progress of white civilization could be measured and monetized” (2016: 14-15).

Baartman was female but not a woman, serving as she did as an anchor, or index, of idealized white femininity. Sexed but ungendered, she was both human/not human, unintelligible yet the very measure of what could count as intelligible, racialized womanhood. Similarly, the “Great Chain of Being” and its variations did not exclude black persons, rather it ranked them closer to animals and inanimate objects than whites.²⁵ Blackness was a marker of (lesser) humanity at the same time that it provided the very measure by which one could understand the hierarchical ordering of the other members of the “chain”. In both of these examples, black persons are “sub/super/human” simultaneously; anti-blackness temporarily secures a human ontology at the same time that “blackened” persons are denied access to it. Jackson writes that plasticity

maintains that black(ened) people are not so much as dehumanized as nonhumans or cast as liminal humans nor are black(ened) people framed as animal-like or machine-like but are cast as sub, supra, and human *simultaneously* and in a manner that puts being in peril because the operations of simultaneously being everything and nothing for an order—human, animal, machine, for instance—constructs black(ened) humanity as the privation and exorbitance of form. Thus the demand placed on black(ened) being is not that of serialized states nor that of the in-between nor partial states but a statelessness that collapses a distinction between the virtual and the actual, abstract potential and situated possibility, whereby the abstraction of blackness is enfolded via an ongoing process of wresting form from matter such that raciality’s materialization is that of a dematerializing virtuality (Jackson 2020: 35).

Jackson thus offers us a much different understanding of racialization, one that would disabuse us of the promise of simply banishing racial thinking from the sciences if only we could refute, once and for all, any biological substance to “race” (2019).²⁶ Such a view presumes a theory of bodily becoming—of form giving way to form—that can acknowledge diversity without recuperating an ontological understanding of difference. Such is the promise of epigenetics. To be sure, it can explain how race (as social identity) is embodied, not given. Jackson herself invokes both epigenetics and disparities in breast cancer deaths to say that health is never not politics, or, in her words, “war”. Nevertheless, it is not the life sciences to which she turns to think through how plasticity might also suggest lines of flight from the exercise of power. Rather, she turns to the aesthetic as that which provides the space necessary for rethinking the form we call the “human”. For Jackson, aesthetic practices can enact the undecidability of form while also acknowledging and disrupting the afterlife of slavery.

Over and against Malabou’s theory of plasticity being the cancellation of form, Jackson looks to aesthetic practices (as politics) for which “mutation” is their guiding logic. In particular, Jackson turns to the artist Wangechi Mutu who

²⁵ Writing about the long history of racializing discourses in philosophy and science, Jackson shows that the “animal” has been used to establish blackness as constituting particular kinds of humanity, departing from the view that abjection, via animalization, is a denied or excluded humanity; rather, animality is a particular way of being human.

²⁶ It is clear that “race” has never been able to settle the question of the human for those in power. If I understand Jackson, plasticity, as anti-black praxis, is how such failure (and the crises it augurs) is violently managed. For an examination of recent attempts to secure the concept race by way of genetic diversity markers, see Happe 2019.

uses collage to layer and assemble the 19th century drawings of Ernst Haeckel (an illustrator and naturalist who championed theories of evolutionary hierarchies among the so-called races) with fragmented images of somewhat inscrutable but conventionally gendered and racialized body parts. In so doing, Mutu challenges conventional notions of history, which is to say, she both acknowledges the after-life of slavery while simultaneously creating space for new conceptions of the human that do not rely on a narrative of rupture or progress—much as epigenetics does with its fantasy of engineering developmental trajectories and disavowing the very history that makes such fantasies possible. Rather, the logic of mutation holds that what comes before is a condition of possibility for change, even as the future remains an open question. As Jackson (2020) observes,

[...] in the process of reinscription—the replication of historical metaphors—the structures of meaning that license Medusa’s racialized sexed metaphoricity, informing Haeckel’s “Discomedusae”, become mutational. However, this mutation is not attributable solely to “artistic genius” but exceeds subjectivist claims—mutation relying as it does on the meeting of fortuity and the autopoiesis of a system. Mutation is that radical alteration in the interstice of chance and design, “a process that is not ‘ours’ because it necessarily involves a degree of randomness”; in other words, mutation exploits the unpredictable and the limits of human control (Rutsky 103). Thus, mutation, given its implied randomness, cannot be narrativized or, more precisely, can be narrativized only by subordinating its “unpredictability” to the bias and parallax inherent in human perspective. In the words of R.L. Rutsky, “Mutation, one might say, serves to figure a notion of change that seems to have taken on an uncanny life of its own” (2020: 179-180).

While Malabou would say that plasticity is not mutation insofar as what comes before is “cancelled”, Jackson instead posits plasticity as that which embraces unpredictability and randomness without disavowing how such unpredictability and randomness is a mutation of what comes before, not a break or gap or erasure.²⁷ Plasticity, for Jackson, is “neither the thing-in-itself nor an immanent ontology of the real but representational or paradigmatic: an *a posteriori* virtual model of a dynamic, motile mode of antiblack arrangement” (Jackson 2020: 72). As representational or paradigmatic (an abstraction from the social) it acknowledges this antiblack arrangement while maintaining the potential of the speculative. Plasticity for Jackson is not an ahistorical ontology of being, but is an abstraction made possible by particular material relations, in this case slavery.²⁸ Malabou’s distinction between flexibility and plasticity risks presuming an ontology to the body that power

²⁷ It may be the case that what Malabou means by “cancel” is compatible with “mutation” as she does also say that “cancel” does not mean “forgotten”. Nevertheless, from additional works that I have consulted, it does seem to be the case that her concept of plasticity is one of rupture that, while acknowledging that what comes before is a condition of possibility, is nevertheless overcome; a theory that seems inconsistent with what other scholars have called the “afterlife” of slavery. What is sublated can, moreover, be the basis for the recuperation of lost vocabularies or agencies of freedom. See, for example, Weinbaum 2019; Weheliye 2014.

²⁸ Jackson locates plasticity’s emergence in racial slavery which, she argues, “fleshed out its imagination and provided the experimental means for exploring the possibilities and boundaries” of “optimization” (Jackson 2020: 11). Nevertheless, plasticity’s “telos”, she says, “is not the optimization of life per se but the fluidification of ‘life’ and fleshly existence” (Jackson 2020: 11).

takes advantage of but cannot capture completely. By contrast, Jackson makes no such distinction, grounding her theory of plasticity in the social relations of slavery even as those relations become sublated over time. Mutu's collages, in Jackson's reading, are a kind of palimpsest, a mutation that does not erase what comes before at the same time that it embraces the unpredictable. And it resists the narrativizing urge of the life sciences as they tie speculation to the reproduction of power.²⁹

While epigenetics' logic of management assumes history can be overcome so long as experts can intervene in, and optimize unfolding potential, Jackson's plasticity resists such urges. Plasticity in Jackson's hands is a speculative practice that keeps past, present, and future in play but in a way that does not erase how speculation is grounded in a history of anti-blackness. Nor does it risk reducing the embodiment of anti-blackness to so many methyl marks that become the province of an expert class whether that be scientists or, perhaps, even philosophers.

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²⁹ For an engagement with the speculative logics of late capitalism, see Keeling (2019).

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