

"Physiology Gone Wild": The Neurally Plastic Subject in Oliver Sacks's Clinical Tales, Octavia Butler's *Parable of the Sower*, and Catherine Malabou's *What Should We Do With Our Brain?*

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Abstract: Oliver Sacks (1933-2015) had a prolific career as both a clinician and a popular science writer. His influence on the literary arts is apparent in the growing number of "neuronovels"—novels that centrally feature neurological disorder. However, literary critics have not acknowledged Sacks' impact on science fiction writers, such as Octavia Butler. In this essay, I analyze how Butler's *Parable of the Sower* (1993) draws on themes from his clinical tales—in particular, the theme of neurological "excess"—to promote a postmodern ethics of change and becoming. While Butler's wider oeuvre reflects a sustained interest in physical permutation, *Parable of The Sower* more precisely attributes the propensity for self-transformation to the brain. This is because Sacks provides her with a storehouse of concepts with which to do so. Butler builds on Sacks' notion of "physiology gone wild" or neurological "excess" to demonstrate that the self is heterogeneous and unboundaried by virtue of the brain. Ultimately, the concept of neurological "excess" provides her with a means to challenge the dominant political rhetoric of individualism.

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Today, disciplines within the brain sciences acknowledge that the brain is not an isolated organ. Scientists—particularly those within the fields of social and affective neuroscience—stress that the brain is embedded in a certain social, physical, and technological environment. Because the brain is situated in a network of biological and social systems, its functions cannot be understood outside of those systems in which it is a part.¹ But this position is still in the process of being articulated. Thus, Oliver Sacks was somewhat of an outlier when he elaborated on the brain's sociality in his scientific writing in the 1980s. Sacks insisted that mental processes were relational, as well as mechanical, and he urged his peers to see

the brain as more than a mere machine.² His critique of classical neurology significantly influenced Octavia Butler's science fiction, which is the focus of this essay. I will demonstrate how Sacks's collection of neurological tales, *The Man Who Mistook His Wife For a Hat* (1985), furnished Butler with an idiom with which to challenge both the dominant model of mind and the 1990s rhetoric of individualism.

Butler's *Parable of the Sower* (1993) depicts a post-apocalyptic California, which has deteriorated due to global warming, increased class divisions, and the rise of anti-government, rightwing politicians. In Butler's dystopia, multi-national corporations have unfettered control over

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the political sphere, rendering public officials too immobilized to redress the dire problems that communities face. *Sower* focuses on the particular struggles of a young black woman who lives in a neighborhood just outside Los Angeles. Lauren Olamina is a “sharer”—she shares others’ sensory experience. She developed this neurological condition in utero due to her birth mother’s abuse of prescription drugs. After a rampage by drug-addicted arsonists, Olamina’s home is destroyed and her family members killed. She travels north to Canada, forming alliances with other travelers along the way. She and her companions eventually settle in an open landscape that she names Acorn. Here, she intends to practice and convert more individuals to her new religion, *Earthseed*. *Earthseed* has one basic tenet: God is Change.

Sower characterizes Butler’s oeuvre insofar as it thematizes physical permutations. Butler’s science fiction is full of symbiotic creatures, inspiring much criticism on the topic of the cyborg.³ Generally, critics argue that Butler valorizes varied forms of becoming—becoming-animal, becoming-woman, becoming-child—as modes that create new possibilities for political life. Some have even drawn on the philosophy of DeLeuze and Guattari to demonstrate that, in Butler’s fiction, inter-personal and inter-species relations depict the self as a heterogeneous “assemblage that is merely one possible version amongst multiple possibilities” (Lacey, 2008).⁴ However, Butler’s critics have failed to acknowledge that, in contrast to her earlier novels, *Sower* specifically attributes the propensity for self-transformation to the brain, a move drawn directly from Sacks’s clinical tales.

In his collection, Sacks uses the terms “neurological excess” and “physiology gone

wild” (1985) to describe neurological disorders such as Tourette syndrome and synesthesia, which are characterized by a surplus, rather than a deficit. For Sacks, disorders of excess challenge the classical (computational) model of mind that has prevailed in neurology. They reveal that the mind is social, as well as numerical. Butler expands on this notion, creating a protagonist whose extended brain dissolves the boundary between the self and the world. The concept of neurological excess sheds light on the relationship between nature and culture, which has long divided Butler’s critics. I first position Butler’s novel alongside Sacks’s neurological tales to more fully illuminate how the brain, in particular, allows organisms to intervene in their biological evolution. Secondly, I argue that Butler takes the notion of “physiology gone wild” even further than does Sacks himself. Whereas Sacks merely describes the excessive brain’s undoing of the Cartesian subject, Butler shows the excessive brain undoing the body politic. Thirdly, I argue that Butler’s re-description of neurological excess anticipates recent work in contemporary philosophy, which celebrates the “plastic brain” for the model of subjectivity that it posits. Here, I suggest that Butler offers in advance an answer to the question that Malabou (2008) poses in the title of her book, *What Should We Do With Our Brain?* Malabou, a student of Jacques Derrida, explores the implications of neuroscience—specifically, the concept of neural plasticity—for moral and political philosophy. Butler, by contrast, explores the implications of neural plasticity for biology. From this perspective, she posits that we should use “our brain” to remake our species.

Part I: Sacks’s Influence

Butler mentions Sacks in several interviews about the book,⁵ although a close analysis of the

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novel readily reveals his influence. In *Sower's* first few pages, readers learn about the protagonist's peculiar neurological condition. When Olamina sees someone stabbed in the stomach, she doubles over herself. Olamina resembles a character from Sacks's collection, a woman with Tourette syndrome who imitates passers-by. In the chapter "The Possessed," Sacks relates the strange behaviors of a woman he observed in downtown New York, where he practices "street neurology." (Sacks insists that many neurological disorders can only be fully comprehended in the world, rather than the exam room; thus, he frequently takes his practice to the streets.⁶) At first, the woman appears to Sacks to be having a fit; but it soon becomes clear that, with each convulsion, she is "taking on" the expressions of those around her. Wanting to hide her involuntary imitations, the woman turns into an alley-way. Here, "she deliver[s] one vast pantomimic regurgitation, in which the engorged identifies of the last fifty people who had possessed her were spewed out" (Sacks, 1985). Like this woman from Sacks's collection, Olamina tries to conceal her hyperempathy. She knows that it makes her vulnerable: "Sharing is a weakness, a shameful secret. A person who knows what I am can hurt me, betray me, disable me with little effort" (Sacks, 1985). However, like the other patients that populate Sacks's collection, she is simultaneously *enabled* by her condition. Although her hyperempathy exposes her to others' pain, it also allows her to reshape the community in profound ways.

Sacks intuited that victimhood and agency were co-existing components of illness.⁷ He often describes neurological disorder as both a "curse and a gift" (Sacks, 1985). Take, for instance, his patient "Witty Ticky Ray," a young man with

Tourette syndrome. On the one hand, Ray's tics can be very inhibitive. They interfere with romantic relationships, and they prevent him from maintaining a steady job. On the other hand, Ray's uncontrollable tics are advantageous for his musical abilities and other physical activities. Sacks describes how Tourette syndrome gives Ray a competitive edge in one of his favorite games, ping-pong: "he excel[s], partly in consequence of his abnormal quickness of reflex and reaction, but especially because of 'improvisations' 'very sudden nervous, frivolous shots' (in his own words), which were so unexpected and startling as to be virtually unanswerable" (Sacks, 1985). When Ray begins treatment with the drug Haldol, which controls his involuntary movements, "he comes to feel, increasingly, that something is missing" (Sacks, 1985). He finds that the medication dulls his musical abilities; without his tics, he has no "wild and creative surges" (Sacks, 1985). He becomes slow and deliberate in both thought and action. Even his dreams seem to have lost their spark—he characterizes his dreams as "'straight wish-fulfillment . . . with none of the elaborations, the extravaganzas of Tourette's'" (Sacks, 1985). Alas, Ray decides that he will only take his medication on the weekdays, when he must report to work. "So now," Sacks explains, "there are two Rays—on and off Haldol. There is the sober citizen, the calm deliberator, from Monday to Friday; and there is 'witty ticcy Ray,' frivolous, frenetic, inspired, at weekends" (Sacks, 1985). Ray has many companions in Sacks's collection. There is also a nun whose migraine auras induce divine visions, a woman with musical seizures, and a woman with temporal lobe seizures that "transport" her to her childhood in India. By illuminating the proto-creative aspects of disease, Sacks suggests that

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neurological disorder can sometimes be profoundly empowering.

Butler clearly shares Sacks's sense that neurological illness and wellness are not so easily distinguished. Olamina recognizes the ethical advantage of her condition: "If hyperempathy syndrome were a more common complaint, people couldn't do [violent] things. ... if everyone could feel everyone else's pain, who would torture? Who would cause anyone unnecessary pain? I've never thought of my problem as something that might do some good before, but the way things are, I think it would help" (Butler, 1993). She desires for more people to share her genetic mutation, which she calls her "biological conscience" (Butler, 1993), because she believes that this would benefit the species. As this passage suggests, it is not simply by blurring the boundary between deficit and ability that Butler utilizes Sacks. She also leverages the neurologist's critique of the computational model of mind to re-imagine evolutionary processes.

Part II: Brains Undoing the Body Politic

Sacks dislikes the computational model of mind because it fails to account for the patient's personhood, which is always an essential part of the patient's disease. The computational model reduces individuals to mechanical processes, when, in fact, they are "heroes, victims, martyrs, warriors . . . [and] more" (Sacks, 1985). The neurologist turns to classical fables to restore the patient's biography, as well as biology. In his own words, clinical tales serve as a "parable" for neurology. They give vitality to the person, creating a "'who' as well as a 'what,' a real person, a patient, in relation to disease" (Sacks, 1985). While there is certainly a humanist bent to this passage, it is also decidedly anti-Cartesian, insofar

as it denies the distinction between the material and immaterial aspects of personhood.

Butler elaborates on this critique by stressing the human brain's potential for recombination. Olamina's hyperempathy perpetually disembodies her, uniting her with others. This character is, in fact, constituted by others and held hostage to their pain. The following scene, in which Olamina is momentarily debilitated after shooting an attacker in self-defense, demonstrates this:

I heard shouting. The bald gang from the highway was almost on us—six, seven, eight people. I couldn't do anything while I was dealing with the pain, but I saw them. Instants later when the man I had shot lost consciousness or died, I was free—and needed. (Butler, 1993)

Here, Olamina perceives her body as a corpse. She only feels integrated in her body when the other person whose pain debilitates her dies or loses consciousness. While scenes such as this one suggest a Cartesian subjectivity (a "self" separate from the body), Butler challenges Cartesianism by blurring the barrier between the internal subject and the external world. Olamina's brain fuses her to external bodies. When her brain extends and externalizes her, she is sometimes confused about where her "self" ends and the environment begins. In another scene, Olamina notices she is bleeding, and she is unsure if the wound is originally hers. She reflects, "I was surprised. I tried to remember whether I'd been shot. Maybe I had just come down on a sharp piece of wood. I had no sense of my own body. I hurt, but I couldn't have said where—or even whether the pain was mine or someone else's" (Butler, 1993). She adds, "the pain was

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intense, yet defuse somehow. I felt... disembodied" (Butler, 1993). In this scene, belief comes from outside the body, and action precedes perception. Olamina's body responds to the world before she registers someone or something in pain. Here, Butler challenges the notion that thinking is "behind" behavior, suggesting instead that thinking extends with behavior.

Clark and Chalmers stress this idea when they describe "epistemic action," a concept that dovetails with "neurological excess." Clark and Chalmers borrow the term from David Kirsh and Paul Maglio (1994) to describe actions that "alter the world so as to aid and augment cognitive processes such as recognition and search" (1998). Examples of epistemic action include using scrap paper to work out a math problem, rearranging scrabble tiles to form certain words, or writing down an address to remember it. Epistemic action vividly depicts how humans act *with* the environment, rather than on it.⁸ Epistemic action also depicts how engagement with the surrounding socio-technological matrix radically transforms cognitive processes. The brain perpetually merges the mind/self with the world, making humans "cyborgs without surgery, symbionts without sutures" (Clark, 2003). Although Clark and Chalmers describe the brain as "opportunistic," expertly exploiting "tools" in its surrounding matrix, they also describe the brain's incredible openness to difference. The brain is so innately flexible that it can be molded to complement external structures. This occurs with individual learning. Individuals' brains develop to correspond with the physical and computational artifacts in their environment. So, the brain is both *formable* and *formative*. The brain re-forms the environment, and the environment re-forms the

brain in perpetual loops between brain, body, and environment. Because it is such an "unusually plastic" organ, the brain makes humans "natural-born cyborgs" (Clark, 2003). Clark suggests the political potential of the brain, explaining that the brain/mind's extension to social and physical environments enables individuals to reconfigure their minds by reconfiguring their social physical environments.⁹ Clark's extended mind theory has become widely accepted today, especially among neuroethicists, who consider the moral implications of extended mind/personhood. Wilson and Lenart (2014), for instance, analyze how extended mind theory confers the rights of personhood (namely personal identity) to subjects with non-typical cognitive capacities. According to Wilson and Lenart, the extended account of personal identity morally obliges individuals to actively support the integrity of others' personal narratives, since they are already implicated in those narratives.

Butler dramatizes this mutual process of activity and responsibility. Olamina's excessive brain demonstrates how individuals have the ability to influence the destiny of the species; at the same time, her excessive brain also demonstrates humans' responsibility to accept the changes effected by others. Explaining Earthseed's philosophy, Olamina declares, "Humans can rig the game in our own favor if we understand that God exists to be shaped, and will be shaped, with or without our intent" (Butler, 1993). By claiming that humans can "rig the game," she claims that humans can actively influence their biological evolution. They can build alternative communities or, in developmental terms, construct new "niches."¹⁰ Earthseed's followers practice communitarian ethics to transform the human race. They base

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their community on an ethics of care and mutual respect, hoping that such an environment will adapt its members and future generations. Earthseed proclaims, "All that you touch/You Change./All that you Change/Changes you" (Butler, 1993) and "We shape God./ In the end, we yield to God./We adapt and endure" (Butler, 1993). These verses emphasize the interdependence of organism and environment, as well as the inevitability of adaptation based on this interdependence. Earthseed followers also aim to evolve the species via extra-solar expansion. They recognize that humans are destroying the planet with warfare and rampant ecological destruction. If humans fulfill Earthseed's destiny—"to take root among the stars" (Butler, 1993)—then they just might transform the human race. Olamina articulates this idea especially clearly in *Parable of the Talents* (1997):

Humans can do something no other animal species has ever had the option to do. We can choose: We can go on building and destroying until we either destroy ourselves or destroy the ability of our world to sustain us. Or we can make something more of ourselves. We can grow up. We can leave the nest. We can fulfill the Destiny, make homes for ourselves among the stars, and become some combination of what we want to become and whatever our new environments challenge us to become. Our new worlds will remake us as we remake them.

By describing how humans can become "some combination of what we want to become," Butler suggests that human intention cannot

guarantee a certain destiny for the race; it can only guarantee change (Butler, 1997).

Olamina struggles to accept this notion—that intention only assures adaptation—because of its ethical implications. She preaches "God is change," comparing God to the second law of thermodynamics, without fully acknowledging what this means for the belief system that she cherishes. She assumes that Earthseed will grow and attract more followers, but that its basic philosophies will endure. She discusses this vision with Bankole, a man she meets on her journey and eventually marries. When he observes that Earthseed's future followers will interpret the religion differently and reshape it, she is in denial: "Not around me they won't!" Bankole responds, "With you or without you, they will. All religions change... After all, if 'God is Change,' surely Earthseed can change, and if it lasts, it will" (Butler, 1993). This conversation profoundly unsettles Olamina. Bankole forces her to acknowledge that the intention most sacred to her—Earthseed—will transform beyond her control. She cannot maintain control over the ideas that she releases into the world. The same idea applies to biological adaptations. We cannot guarantee future versions of our biological selves. We can only guarantee change: "Our new worlds will remake us as we remake them" (Butler, 1997).

By emphasizing how beings and worlds are "remade" together, Butler refuses to recognize nature and culture as distinct spheres of influence. This same refusal, in fact, formed the basis for "romantic science"—the genre of clinical writing that Sacks favors. Sacks's clinical tales continue the legacy of Soviet neuropsychologist A.R. Luria. In the 1920s, Luria challenged the long-held notion that physical and experiential reality were separate. Perceiving a continuity between mind

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and body, Luria united neurology and psychology into one discipline ("neuropsychology"). Butler, too, suggests that individuals are agential and co-dependent; they can shape reality, but they are also shaped by it. This circular logic is expressed by the following Earthseed verse:

Self is.
Self is body and bodily
perception. Self is thought, memory,
belief. Self creates. Self destroys. Self
learns, discovers, becomes. Self
shapes. Self adapts. Self invents its
own reasons for being. To shape
God, shape Self. (Butler, 1993)

Paradoxically, one of the self's "reasons for being" is to transform its being. Further, as the verse states, the self is both material and historical: "Self is body and bodily/perception. Self is thought, memory, belief" (Butler, 1993). Butler reduces being to matter, but, at the same time, acknowledges that matter is shaped by individual experience (memories, beliefs). Indeed, the protagonist's brain is not hardened at birth; rather, it transforms over time. In one of her first diary entries, Olamina claims that her neurological condition is permanent. She laments, "my neurotransmitters are scrambled, and they are going to stay scrambled" (Butler, 1993). Yet, her brain *does* adapt, as she develops ways to minimize her symptoms. She tricks her brain into responding alternatively to scenarios that trigger pain. As she ages, she becomes more resilient. Olamina reflects, "I can take a lot of pain without falling apart. I've learned to do that" (Butler, 1993). Here, Butler demonstrates how individual experience shapes her at a biological level.

This notion of the permeable brain is important because it sheds further light on the nature/culture relation, which has long divided Butler's critics. Some of her critics argue that Butler privileges nature, understanding human behavior in terms of biological functions honed by natural selection.¹¹ Others read Butler as a social constructionist.¹² However, Butler is neither "essentialist" nor "constructionist," since she incorporates biological thinking without endorsing biological determinism, just as Sacks did. In an interview about the book, she acknowledges that genes significantly influence human behavior and that we need to take this fact seriously. In fact, she references Sacks's collection to observe that "sometimes a small change in the brain, for instance—just a few cells—can completely alter the way a person or animal behaves" (Potts, 1996). But, like Sacks, she refuses to accept the reductivism of standard evolutionary theory. She elaborates, "I do think we need to accept that our behavior is controlled to some extent by biological forces . . . but I don't accept what I would call classical sociobiology. Sometimes we can work around our programming if we understand it" (Potts, 1996). This apparent conflict between biology and utopian thinking is one of the most central concerns in Butler's fiction. According to critic A. Johns, one of the most fundamental questions in Butler's work is: "How can we make a better world if we are determined by our genes?" (Johns, 2010). Johns answers this question by drawing on the genetist critique offered by Richard Lewontin, an evolutionary biologist associated with DST. While his "developmental" reading is useful, it overlooks the crucial role of the brain.

Developmental systems theorists, such as Lewontin, Oyama, and Griffiths and Gray, posit

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that DNA and non-DNA factors cannot be completely isolated from each other. In other words, there is no blueprint or program (genes) that epigenetic resources (environment) either facilitate or repress. DST challenges conventional evolutionary theories, which focus exclusively on the genetic level in analyses of the evolution of traits. Conventional evolutionary theories fail to appreciate that traits result from the organism's interaction with a wide range of developmental resources (Griffiths and Stotz, 2000).¹³ DST is sometimes referred to as "cultural biology," since it unites Marxism and Darwinism. Marx famously proposed that human nature (or consciousness) changes according to the material conditions of social life.¹⁴ For Marx, a revolution of the ensemble of social relations would produce a revolution in human nature. However, despite his fundamental belief in human malleability, Marx still distinguished between natural (biological) history and social (human) history. This is evidenced by Marx's conflicting attitudes toward Darwin, whose work he followed closely. While he believed *Origin of the Species* provided a "natural-scientific basis for the class struggle in human history" (Marx, 1862), Marx insisted that the implications of Darwinian theory be confined to anatomy and physiology. He refused Darwin's notions of an unending struggle for existence and "survival of the fittest." Rather than attributing human antagonism to biology, as Darwin did, he attributed human antagonism to the specific economic and social arrangements of capitalism (Singer, 1999). Contra Marx, DST acknowledges nature and culture as interdependent spheres of influence.

Johns astutely recognizes a similarity between Lewontin's framework and Butler's biological philosophy. He argues that for

Lewontin, as well as for Butler, "just because we cannot understand ourselves without reference to our genes, does not mean that changing our environment is either useless or hopeless, *especially* if we understand and acknowledge the interaction between the two" (Johns, 2010). Much to the contrary, attempts to shape the world can be substantial, particularly when those attempts are grounded in a "genetic" understanding of the world. The *Parable* novels demonstrate how a biological-material understanding of the world is actually quite compatible with utopian thought. Organisms are shaped by genes, which are, in turn, shaped by environment. Thus, to change biology, individuals have to change the environment: "[a] fully biological nature... is not an eternally fixed one, but an eternally malleable one" (Johns, 2010). Herein lies possibility for the future. If communitarian values cannot be adopted by culture, perhaps they can be integrated via natural selection (Johns, 2010).

Adams does not state that Butler was familiar with DST specifically, although her interviews suggest that perhaps she was. While she uses the idiom of the "program" to describe human behavior, Butler insists, as do developmental theorists, that there are no innate features or "genes for" certain behaviors. She asserts, "to whatever degree human behavior is genetically determined, it often isn't determined *specifically*; in other words, no one is programmed to do such and such" (McCaffery and McMenamin, 1990). Here, Butler reiterates the arguments made by Griffiths and Stotz, who argue that traits develop through a "cascade" of resources, both genetic and epigenetic (2000).

Importantly, Adams' "developmental" reading of the *Parable* novels emphasizes Butler's belief that humans are biosocial creatures—the products

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of co-evolutionary process involving biology and culture. However, by focusing on the genetic level, Adams suggests that biological adaptations are delayed until the offspring or a future generation. Butler's depictions of neurological excess suggest that individuals continuously transform—at a biological level—*within* the life course. This is why Sacks's influence matters: Butler demonstrates how the brain accelerates the expression of a trait to a phenotype that can be selected for or against. In this way, the brain has the potential to accelerate adaptations, perhaps at a greater rate than genetic mutations.

Adams overlooks that *Sower* also depicts *cognitive* niche constructions, which plainly demonstrate the extended-ness of the brain. Cognitive niche constructions are environmental interventions that embodied agents make to alter cognitive experiences. The concept of cognitive niche construction is firmly established in the cognitive sciences. For instance, cognitive scientists often cite language as a cognitive niche, since language assists individuals to process and engage with the surrounding world (Clark 2008). (This notion of language is anti-postmodern, since it recognizes language as an adaptation to the environment, rather than something opposed to or apart from reality.) *Sower* depicts written language as a form of cognitive niche construction. Writing externalizes thought, transforming cognition in the process. Olamina is an avid note-taker. One of her survival strategies is to exploit every available piece of reading material that she can get her hands on—encyclopedias, biographies, works of fiction—and record her thoughts, which help her to "remember better" (Butler, 1993) information that might one day save her life. The most overt example of cognitive niche construction is Olamina's diary. Diary-writing is not simply

expressive; it is also reflexive. Olamina frequently acknowledges the reflexive dimension of writing: "Sometimes I write to keep from going crazy" (Butler, 1993). She also explains, "[s]ometimes writing about a thing makes it easier to stand" (Butler, 1993). Writing provides stability because it clarifies her beliefs. This is one of the primary functions of diary fiction, according to H.P. Abbott. The diary "is a reflexive text—not simply in the sense of a self-reflecting or self-conscious text, but in the sense that the text exerts an effective influence on its writer" (1984). Abbott explains that the diary, simply by rendering events, can either move its writer to insight or "maintain him in blindness" (1984). In either case, the text influences the course of events. It plays an active role in the story. This is certainly the case with Olamina's diary, since the text profoundly shapes her thought processes. In one of her first entries, Olamina writes "I need to write about what I believe." But she confesses that her beliefs are not already formed inside her head. She has to use other tools to realize her beliefs: "It took me a lot of time to understand it, then a lot more time with a dictionary and a thesaurus to say it just right—just the way it has to be" (Butler, 1993). These passages recall the cognizing subject that Clark and Chalmers describe—the individual using scrap paper to work out a math problem, rearranging Scrabble tiles, or jotting down an address. They emphasize how cognition draws on surrounding objects, extending thought beyond the "skin-bag" (Clark's term).

Butler uses various techniques to reinforce how the diary externalizes cognition. For instance, she uses rhetorical questions. Olamina uses her journal to inquire, especially when she is grappling with the "big questions"—"Is there a God? If there is, does he (she? it?) care about us?" (Butler, 1993). She tentatively answers her

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own questions—“Maybe God is a big kid, playing with his toys” (Butler, 1993)—before asking further ones: “But what if all this is wrong? What if God is something else altogether?” (Butler, 1993). Such rhetorical questions foreground how the diary extends the mind to the page in an ongoing feedback loop. Butler also depicts the protagonist’s cognitive glitches to show how cognition unfolds *outside* the head. Olamina frequently revises her initial thoughts upon recording them on the page. For instance, she relates a neighbor’s death: “Mrs. Sims shot herself today—or rather, she shot herself a few days ago, and Cory and Dad found her today” (Butler, 1993). In another scene, she writes about her father’s severity towards her: “Dad thinks I need more humility. I think my particular biological humility—or humiliation—is more than enough” (Butler, 1993). In another scene, she speculates about God and whether or not God protects the down-trodden: “How will God—my father’s God—behave toward us when we’re poor” (Butler, 1993)? These glitches illuminate the immediacy of cognition. Olamina’s thoughts are events, not mere representations. The diary provides a useful format for emphasizing the event-like dimension of cognition. Abbott explains that the immediacy in diary fiction does not correspond with the events described. (This is because the diarist cannot write amidst the action, only after the fact.) The immediacy in diary fiction is the “*writing itself*”; the event in progress . . . is the writing itself” (1984). In the case of Butler’s diary fiction, though, writing does not occur *after* thought; writing *is* thought. The “event” in Olamina’s journals, then, is cognition. By formally modeling Olamina’s extended cognition and showing how the mind is always reassembling, *Sower* challenges notions of a stable and autonomous self.

Part III: Contemporary Philosophy and the “Plastic Brain”

As I have discussed, Butler celebrates the excessive brain, since it assists individuals to form alternative communities and to build new worlds. However, Butler also embraces the excessive brain because it radically challenges neoliberal vocabularies of personhood. *Sower* portrays the political climate that favors such notions of an autonomous brain. In the narrative, corporations control nearly all aspects of political life, as a result of a shrunken federal government and deregulated markets. Privatization creates such a powerless state that even basic public agencies (schools, police departments, fire departments) no longer serve the community. Individuals have to rely on their own ingenuity to survive. This setting clearly critiques the political vision of the right-wing establishment under the Reagan administration, which debilitated public offices in the interest of free markets. (It also forewarns about the danger of fascist politicians who promise to build walls and “make America great again.”¹⁵) Olamina’s hometown of Robledo is a gated community secured by private police. The neighborhood watch group, which Olamina’s father manages, has one primary task: protect the cul-de-sac from poorer passersby.

Several critics have drawn comparisons between this setting and the city described in Davis’s “Fortress L.A.,” from his book of social history, *City of Quartz* (1990).¹⁶ Davis describes the reorganization of the city after the powerful elite have destroyed accessible public space. Davis explains how middle to upper class communities increased demands for spatial and social separation from the urban poor, prompting city organizers to recolonize downtown spaces with architectural ramparts and walled enclosures.

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Davis also depicts increasing fortification of affluent suburban neighborhoods through erecting barricades and contracting with local police forces to patrol. Like Davis, Butler explores how the architectural environment is used to reinforce class divisions. Robledo once epitomized the sort of L.A. suburban neighborhoods that Davis describes, though it is no longer secure from outsiders. Since residents can no longer afford to pay police to patrol the streets or respond to crimes, the streets now abound with "squatters, winos, junkies, homeless people in general" (Butler, 1993). Everyone lives in fear of being robbed by a neighbor. Butler's dystopian setting conveys the fate of the minoritized poor under Reagan. Individualism, the core philosophy of the right-wing fundamentalists in power, does not enable poorer individuals to better themselves or their communities. Rather, it divides communities and causes discord by teaching citizens to look out only for themselves. In Robledo, individuals act violently even against friends and community members. Olamina's brother, Keith, joins a gang that ransacks the neighborhood. Keith demonstrates how the spirit of individualism enables callousness to one's fellow community members. Drug lords, pimps, and slave masters also pervade the neighborhood, treating individuals (typically minority women) as disposable. Butler suggests the danger of political visions that champion profit and individualism above all else.

Olamina's "excessive" brain poses a threat to individualism, since it binds her to others. Furthermore, her hyperempathy risks the integrity of the nuclear family. The Olaminas survive by barricading themselves inside their walled community and patrolling the neighborhood with firearms. They rely on her to keep her condition a secret. Olamina reflects, "I can do okay as long as

other people don't know about me. Inside our neighborhood walls I do fine" (Butler, 1993). But when outsiders learn of her condition, her family is endangered. Olamina recalls that her brother once feigned an injury in public to trigger her symptoms. Her father became enraged with his son for "putting 'family business' into the street" (Butler, 1993). Olamina's father, a Baptist minister and defendant of the nuclear family, is especially intolerant of her condition. He urges Olamina, "you can beat this thing. You don't have to give in to it" (Butler, 1993). Here, Olamina's father reiterates one of the patriarchal attitudes of modern medicine: that nervous illness is a matter of choice. Beginning in the 1880s, many clinicians believed that "if the patient decided to be well, she could be" (Herndl, 1993). Olamina's father, like many physicians who treated "hysterical women," intuits that nervous illness is socially transgressive. Indeed, Olamina's hyperempathy becomes a powerful form of resistance, since it exposes the myth of the autonomous individual. Butler emphasizes that the brain does not enclose the self; rather, the brain guarantees the self's endless adaptation. If we appreciate the brain's capacity to transform the self and the world, Butler suggests, then notions of a private, autonomous individual become truly untenable.

By recognizing the interdependence of the social and neural, Butler anticipates the arguments that philosopher C. Malabou makes in her 2008 book, *What Should We Do With Our Brain?* Malabou distinguishes between contemporary notions of flexibility (the brain's ability to be formed) and plasticity (the brain's ability to form, as well as to be formed). She associates scientific concepts of the "flexible" or formable brain with neoliberal discourse of the "flexible" worker; she proposes plasticity to

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counter this dominant rhetoric of flexibility. From her perspective, coming to terms with the brain's plasticity will allow individuals to challenge the models of capitalism that prevail today. Malabou explains that while neuroscientists use the term "plastic" to describe the brain, they continue to discuss the brain as if it were "inside" the head. (In other words, by "plastic," they mean "flexible.") Malabou calls upon neuroscientists to take seriously their claims that the brain is plastic, since doing so will allow them to finally let go of the ideological cliché of the brain as an internal processor. This, in turn, will lead contemporary individuals to recognize their capacity to act upon the world, not just to tolerate action.

Malabou claims that plasticity negotiates between "determinism and freedom" (2008), a claim that sounds a lot like an Earthseed verse. She also describes intention in terms very similar to Butler's. For instance, she discusses how intentional action's "biological function" in the central nervous system is to transition from homodynamism to self-generation. Drawing on the work of neuroscientists Damasio and Jeannerod, Malabou explains that the nervous system expends considerable energy to maintain a homodynamic state.¹⁷ Such self-regulation requires the nervous system to respond to events from the outside that affect it. So, preservation is creative; the system generates new properties for the sake of constancy.¹⁸ Malabou emphasizes that intentional movement is simply an interaction between organism and environment, which makes possible the subject's own representation of the real. Here, her explanation begins to falter, according to critics. Malabou claims that the biological processes of intentional agency produce a rupture between the neuronal (the brain) and the mental (the mind) and that this

rupture makes freedom possible (2008). Critics simply do not buy Malabou's "explosion" as explanation. Discussing how Malabou even tries to mine an association between the words "plasticity" and "plastique" (a moldable mixture of nitroglycerine and nitrocellulose), Mandik (1999) writes:

I must confess that I find a bit hard to swallow the suggestion that neuroscientific discourse is infected by a poetic association between "brain plasticity" and "plastic explosives." The "plastic" in "brain plasticity" doesn't mean "explosive." Not even the "plastic" in "plastic explosive" means "explosive." It's the "explosive" in "plastic explosive" that means "explosive."

For Mandik, the connection between brains and bombs is problematic because no neuroscientist describes the brain in these terms. Leys (2011) more clearly articulates the holes in the argument: "the very problem which is at the center of the mind/brain debate, namely, the nature of intentionality, is now being offered as the solution." In other words, according to Leys, Malabou is proposing that intentional agency simply *is* the biological process that is capable of creating the freedom-ensuing rupture ("On Catherine Malabou's *What Should We Do with Our Brain?*").

For these critics, Malabou is too vague in her description of the transition from the neuronal to the mental. Readers are expected to accept that, since neuronal tissue is discontinuous, the brain creates at the same time that it destroys. (There is a break between neurons, and nervous information crosses this void with each synapse.) Indeed, Malabou does not exactly solve the mind/body problem, as she herself readily admits.

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Nonetheless, she keenly recognizes that the brain is plural, contradictory, and always becoming—and further, that the brain connects individuals to each other. This notion is reinforced by her use of the first-person plural (“we”) in the title and throughout the book. By talking collectively about “our brain,” Malabou substantiates her claim that neither the brain nor the individual is isolated. While she sees her work as an extension of DeLeuze’s cognitive philosophy, it is clear that Malabou also continues the tradition of romantic science. Importantly, Luria, Sacks, Malabou, DeLeuze, and Butler all intuit that the brain is emancipatory, since it allows for “individual experience [to open] up, in the program itself, a dimension usually taken to be the very antithesis of the notion of a program: the historical dimension” (Malabou, 2008). For each of these thinkers, the brain guarantees possibility, and that is its promise. Such an ethics of the brain is radically different from neuroscientific notions, which often emphasize the brain’s defensive tendencies.

Parable of the Sower is prophetic not just for its insights about the future of the capitalist state, but for its insights about the full range of philosophical quandaries that the brain sciences pose today. Butler asks important questions about the brain’s role in the construction of a heterogeneous self and body politic, as well as about the relationship between ontology and epistemology. These questions continue to haunt fiction-writers in the twenty-first century, who write during an era in which the brain sciences have migrated out of the laboratory to occupy a prominent place in public life.

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Notes

¹ The term "social neuroscience" was first used by John T. Cacioppo and Gary G. Berntson (1992) in an *American Psychologist* article exploring how the brain is affected by social interactions. However, "social neuroscience" and its affiliate discipline—"affective neuroscience"—are still considered to be in their infancy.

² "Of course, the brain is a machine and a computer-everything in classical neurology is correct," writes Sacks. "But our mental processes . . . are not just abstract and mechanical, but personal as well—and as such, involve not just classifying and categorizing, but continual judging and feeling also."

³ In fact, Donna Haraway (1991) celebrates Butler in her famous essay, "A Cyborg Manifesto."

⁴ See Alison Tara Walker (2005), Ronald Bogue (2011), and Lauren Lacey (2008).

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⁵ See interviews with S. Potts (1996) and S. Rettburg (1998).

⁶ According to Sacks, street neurology has respectable antecedents; he cites James Parkinson and Charles Dickens, two “inveterate walkers of the streets of London” (Sacks, 1985).

⁷ In fact, Sacks discusses the contradictory status of the neurological patient in his first book, *Migraine* (1970), published fifteen years prior to *Hat*. He describes how many migraine patients experience creative surges and increased energy immediately prior to an attack. He references the novelist George Eliot, who described in her diary that she felt “dangerously well” (Sacks, 1985) before the onset of headache. This theme of “illness as wellness” persists in his writing until his death.

⁸ Clark and Chalmers’ “epistemic action” is similar to Gregory Bateson’s notion of “distributed cognition,” which significantly informs the work of many media scholars today. For instance, King (2011) and Hayles (2008) use Bateson’s notion of “distributed cognition” to explain the manifold processes—both material and immaterial—in which knowledge is enacted and produced.

⁹ See also Wilson (2004) and Watson (1998) for optimistic analyses of the politics of the plastic brain.

¹⁰ In Developmental Systems Theory, “niche construction” refers to the processes by which organisms alter their physical environments. I will more fully explain this theory momentarily.

¹¹ Zaki (1990), for instance, severely criticizes Butler for naturalizing gender differences, rather than questioning gender as a historical convention.

¹² Haraway, for example, praises Butler for demonstrating how human identities are fluid and indeterminate. See also Miller (1998) and Peppers (1995).

¹³ Such theories also fail to appreciate that groups can select, as well. Groups select by determining the social practices that will reliably produce a certain trait. John Proveti (2000) offers the example of self-sacrificing behaviors. Standard evolutionary models explain fitness-sacrificing activities as an individual passing one’s “altruistic part” (401), but this overlooks that groups target social practices.

¹⁴ He writes, “...the human essence is no abstraction inherent in each single individual. In its reality it is the ensemble of the social relations” (Marx, 1848).

¹⁵ See Gerry Canavan (2016), who discusses the novel as a cautionary tale on *Wired*.

¹⁶ For example, see Madhu Dubey (2013) and Peter Stillman (2003).

¹⁷ Actually, Malabou uses Damasio’s term (homeostasis), but this term is “one of most misleading terms in the biology student’s lexicon,” according to Steven Rose (2012), since it describes a process of dynamic response to maintain internal stability. Rose offers the term “homodynamics” to more aptly describe an organism’s ability to preserve itself by adapting its physiology.