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Brains with character: Reading and writing neuronarrative

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Chapter One

Reading The Brain That Writes (Its) Self

Karin Schluter first encounters the neurologist Dr. Gerald Weber not in person but on the page. Weber's books, *Wider Than The Sky* and *The Three-Pound Infinity*, "compiled a travelogue of every state that consciousness could enter," and "from his first words" she immediately feels "the shock of discovering a new continent where none had been" (Powers, *Echo* 117). The accounts Weber writes "of split brains fighting over their oblivious owners," "of a man who could speak sentences but not repeat them," and of "a woman who could smell purple and hear orange" reveal to her "the brain's mind-boggling plasticity and neurology's endless ignorance" (117-18). Taken by the stories, Karin "read every word of both books, her synapses changing as she devoured the pages" (118).

Karin's encounter is accidental—her boyfriend, Daniel, gives her Weber's texts—as well as the result of an accident: driving his truck late one night outside of Kearney, Nebraska on an empty road, her twenty-seven year-old meatpacker brother Mark Schluter gets into a nasty skid-and-flip that lands him—alive, but with severe head trauma—in the hospital. Mark slips into a coma, and Karin, the only other family member Mark has, quits her job to come and care for him. Mark regains consciousness weeks later and, although he cannot remember what caused him to lose control of his truck, begins showing signs of recovery. One crucial detail emerges, however: Mark cannot recognize his sister Karin. He constructs "everything else: who he was, where he worked, what had happened to him," but Mark insists "Karin was an actress who looked very much like his sister" (75). The hospital's doctor, Christopher Hayes, diagnoses this brain-damaged Mark as "manifesting a condition called Capgras syndrome," and explains the symptoms to Karin: "He knows he has a sister. He remembers everything about her. He knows you look like her and act like her and dress like her. He just doesn't think you *are* her" (75-76). Months pass, Mark's body heals, but he continues to consider Karin "an imposter" (86). Witnessing Karin's distress over Mark's continued refusal to recognize her and Dr. Hayes's inaction—"How did that man ever get certified? He won't do anything. 'Wait and watch,'" Karin bellows (116)—Daniel brings Karin to Weber's books. Inspired by reading them, Karin concludes that "Dr. Weber had never visited any land quite like the one her brother now inhabited" (117). So she writes an email about Mark's Capgras to the "apparently well-known cognitive neurologist from New

York,” pleading for his attention and intervention in the face of Hayes’s inattention (118). Dr. Weber does visit Nebraska, but what he encounters through Mark’s condition transforms his own literary habitat, driving him to rewrite and re-inhabit the meanings between narratives of neuroscience and neuroscience’s narratives.

From this deceptively straightforward premise, Richard Powers launches his ninth novel, *The Echo Maker*, published by Farrar, Straus, and Giroux in 2006 and winner of the National Book Award the same year.⁶

Powers’s neurologist-writer character Dr. Weber in *The Echo Maker* is a figure self-consciously aware of the stakes of constructing brains with character in culture today. His books (within the world of Powers’s book), which animate his own pseudonymous patient-characters for the purposes of narrating popular tales about the wonders of neuroscience and the connections that readers have to those abstract characters (much like Oliver Sacks), wield a power to change readers’ brains by making readers aware of the brain’s powers of transformation. As Karin’s “synapses [were] changing as she devoured the pages” of Weber’s tales, so too marks the wager that Powers’s brain with character—Dr. Weber—makes on its readers.

The crisis that Dr. Weber faces, a crisis that also turns outward toward a reader of the *The Echo Maker*, is how to write one’s self if it is one’s brain that writes the self. Weber becomes a character who cannot write his own sense of self because of an increasingly clear threat that his brain out-writes or overwrites his sense of self. The threat is less of a problem of hierarchy than it is about the plastic links between the page (reading and writing narrative

⁶ The title derives from the Cherokee name for the Sandhill Cranes, whose migration through Nebraska’s Sandhill region provides location for the novel as well as thematic partitions for its five sections. The cranes’ annual convergence at the Platte River and its numerous lakes and ponds in the Sandhills—one of the most important wetland ecosystems in the United States that covers an area ten- to twenty-thousand square kilometers larger than the Netherlands—has happened for “sixty million years,” and feeds the novel’s central metaphors of memory, evolution, and habitation in the face of environmental destruction through human development (Powers, *Echo* 4; Powers, Interview). Memory, evolution, and habitation work their way through the plot of *The Echo Maker*’s two main mysteries. Solving the riddle of what (or who) caused Mark’s accident drives much of the many characters’ actions in the novel. The second mystery sprouts from Mark’s brain damage, which incites Weber’s own inability to distinguish himself from his deteriorating sense of brain-composed self in the world around him. This mystery is not built around matters of fact resolved in the catharsis of procedural information recovery, but instead builds matters of concern into which readers are implicated and whose synapses change as pages are devoured.

characters) and the prefrontal cortex (reading and writing brains with character). Weber's character in *The Echo Maker* performs the struggle of acknowledging and articulating neural plasticity through one's sense of self, in one's self-composure. "Since meeting his ruined Nebraska meatpacker," Weber realizes, he "could no longer tell the difference" between "science" and "stories" (452-53). From his medical training and his writing career in the academic genre, "He lost himself in lobes and lesions" (460). But from his encounter with Mark, "the world had broken out in Dickens and Dostoyevsky," and he struggles to re-compose his sense of self, grappling with a 'neuro-' awareness that "The self was a mob, a drifting, improvised posse. No self without self-delusion" (453). The precision of neuroscience leaves Weber alienated from the narratives he previously wrote about patients and the narrative he once thought described his consciousness. Weber "begins to sense things with his emotional intelligence that his cognitive processes have previously hidden from him" (Powers, Interview).

A master of the game of fiction, Richard Powers stages *The Echo Maker* through an extended meditation on this impasse of alienation regarding the brain. Enfolded topics like brain damage and plasticity with neuroscientist characters comfortably locates the novel within the scope of neuronarrative, whose definition, Marco Roth prescribes, is a "novel of how brains can take themselves as objects" (Roth, Reply). Indeed, as I note in the Introduction, *The Echo Maker* features on many critics' lists of neuronarratives (see pages 25-26). But my own encounter with the novel, and especially with the character Dr. Weber, discovers more than an example of neuronarrative. The complex narrative trajectory that both describes and enacts Weber exposes the plastic conditions of reading and writing brains with character. "Powers is so important," Bruno Latour observes, "because he refuses to situate fiction in an easy position *in addition or in contrast* to science. ...fiction is not what he is after, but rather the common source of fiction and fact" (10). The plasticity performed through Weber in *The Echo Maker* bequeaths a parable about genre in a neurobiological contemporary: that we do not only adjust ourselves to inhabit the received frames of genre, but that we also adjust those receptions to innovate the generic frames of those inhabitations. "Powers asks what it is for a character to exist at all," writes Latour, "when so much of existence depends upon the things one is attached to—the most important connection being the biological basis of life itself" (3).

This chapter's first section analyzes how *The Echo Maker* stages and incorporates neurological plasticity in the character of Dr. Weber. I dialogue with Marco Roth over a neuronarrative classification to forage for more operations in the accusation of genre than limits on reception and expectation. I probe Weber's narrative trajectory to discover a mode of knowledge creation that does work to create knowledge about what we can do with our brain. In the second section, I analyze the involving cooperative literacies needed of readers to imagine and constitute meanings from the narrative of plasticity *The Echo Maker* opens up. Central to this is asking what the work of—both reading the knowledge of and negotiation with—plasticity does. Catherine Malabou helps clarify the relations of genre with cultural questions of plasticity, and offers a theory of plastic reading.

Writing Plasticity

Plasticity designates the activity of neural structures to change neural structures. This activity, according to the “considerable evidence for plasticity at chemical synapses,” structures both human behavior as well as the further neural behavior of this activity (Kandel et al. 37). Plasticity portrays the ability of the brain to form new connections and edit previous connections, and, in turn, describes the ability of these formations to edit the brain (37). The burgeoning neurosciences in the past decades have taken to this keystone concept of brain activity, which promises that “Behavior will lead to changes in brain circuitry, just as changes in brain circuitry will lead to behavioral modifications” (Pascual-Leone et al. 379). “It is this functional plasticity of neurons,” that neuroscience explains, “that endows each of us with our individuality” (Kandel et al. 38). Plasticity, in this regard, is “an intrinsic property of the nervous system retained throughout a lifespan,” and therefore implies how “it is not possible to understand normal psychological function or the manifestations or consequences of disease without invoking the concept of brain plasticity” (Pascual-Leone et al. 378). Invocations of the concept of plasticity abound,⁷ and the good news now entreats critical theory. “Talking about the plasticity of the brain thus amounts to thinking of the brain as something modifiable, ‘formable,’ and formative at the same time,” observes Catherine Malabou (*What Should* 5). “From this perspective,” Malabou continues, “to talk about the plasticity of the brain means to see in it not only the creator and receiver of form but also an agency of

⁷ The concept is now the “dominant motif” in the neurosciences as well as being culturally “in the air” (Malabou, *What Should* 4; *Changing* 63).

disobedience to every constituted form, a refusal to submit to a model” (6). In Malabou’s celebrated phrasing: “Humans make their own brain” (1).

The Echo Maker is a novel that both attempts to describe and perform plasticity by emphasizing the power of plastic narratives. Dr. Weber’s books change Karin’s synapses (Powers, *Echo* 118), the idea that “the brain was a set of changes for mirroring change” enters Weber’s thoughts (484), characters tackle the prospect that “the brain itself was a wash of one mood-altering substance or another” (413) or that the concept of God is a chemical and cellular dynamism open for modification (529), and the possibility that Mark’s psychological reaction to his head trauma changed his brain into recognizable symptoms of Capgras hovers over the entire novel (e.g., 259). What I need to ask, given this thematization of plasticity in Powers’s novel and its related debate over neuronarrative, is whether the trope of plasticity is merely an incorporative gimmick or whether it might do something more. And might this something more at work in the character Dr. Weber tell us about reading and writing the trope of plasticity itself?

Let me redouble for a moment to that debate on neuronarrative from the Introduction to which Marco Roth is particularly antagonistic. The use of neurobiology in narratives, and especially in characterization, for Roth, aggravates “a ‘readerly *meaning impulse*’ by which the reader would typically generalize experiences in fiction to make them compatible with his [sic] own” (qtd. in Birge 92). “*Any possibility of the necessary interpretive leap is disavowed by the pathological premise of the novel itself,*” he argues (Roth, “Rise”; my emphasis). The mere circumstance of authors exploring brain pathology in design or characterization “threatens” to incite a “mystery-banning total explanation of consciousness.” He resolves by writing that “The very act of medicalization marginalizes the experimental impulse” that narratives ideally explore in their creation of consciousness,⁸ because neuronarratives “load almost the entire burden of meaning and distinctiveness onto their protagonists’ neurologically estranged perceptions of our world” (“Rise”).

This is where Roth’s essay winds up a little confused in my estimation. If we really are living through the decline of the cultural authority of psychology and psychodrama that signals “the new reductionism of mind to brain,” then I would regard that as an apt and rather lively topic for a work of narrative art to undertake (Roth, “Rise”). The fact that

⁸ This impulse Roth locates in “The stylistic novelty and profound interiority of *Ulysses* or *To the Lighthouse*,” as well as in his laurels for Eliot, Dickens, and Nabokov (“Rise”).

Powers's novel deals explicitly with this decline and represents those complications affectively—Weber asks himself, “What would he say [to his students] the following week, to sum up a discipline drifting away from him? Long after science delivered a comprehensive theory of self, no one would be a single step closer to knowing what it meant to be another” (Powers, *Echo* 462)—demonstrates a sign of awareness in contemporary literature about the stakes of this decline. That awareness, which involves *The Echo Maker* and into which it engages through struggle,⁹ cuts against the idea that “any possibility” for an author to invite neuroscience in works necessarily abandons the experimental impulse “in favor of stark biological determinism” (Roth, “Rise”). Powers's preoccupation with this awareness throughout *The Echo Maker* offers a literature where we deal with science and culture more honestly and ask more questions as opposed to calling for either more scans and more data or their banishment for our favorite *Middlemarch* passages. “Roth fails to take sufficient notice of these ‘neurologically estranged perceptions,’ which represent and enact the process of self-making that occurs in every brain, disordered or not,” Sarah Birge adds (92). By fighting against what he sees as the “new genre” of narrative—which, “have in them very little of society, of different classes, of individuals interacting, of development either alongside or against historical forces and expectations”—what Roth eschews is the most interesting part: the differences between art enacted “in the idioms” of neuroscience and art that thoughtfully engages those “historical forces and expectations” that are allegedly “now the property of specialists writing” (Roth, “Rise”). How *The Echo Maker* contributes to the latter engagement by enacting cultural debates about writing in the wake of the neuroscientific turn is what piques analytical interest in this chapter.

The issue of writing shapes important parts of *The Echo Maker*, and the referents “literature,” “story,” and “case” emplot this issue throughout the novel. “There are only a couple of cases in the literature,” Dr. Hayes tells Karin when diagnosing Mark's Capgras (75). Literature, for practitioners of science, constitutes the body of data and information

⁹ “Something in him did not like where knowledge was heading,” Weber reflects (Powers, *Echo* 240). Weber's thoughts then turn to implicate the capacity for storytelling in the face of neuroscience: “The rapid convergence of neuroscience around certain functionalist assumptions was beginning to alienate Weber. His field was succumbing to one of those ancient urges that it was supposed to shed light on: the herd mentality...When the cognitive counterrevolution broke, some small operant-conditioned part of him held back, wanting to insist, *Still not the whole story*” (240).

about human bodies as data and information. Weber, to students at the medical center, gives a lecture on Patient H.M., “the most famous patient in the literature of neurology” (454). Upon first venturing to Nebraska to meet Mark and appraise the situation, he gathers that “He had enough material now, if not for a write-up in the medical literature, at least for a haunting narrative case history” (203). The idioms that distinguish writing for medical literature and writing a case becomes a point of confrontation between Dr. Hayes and Dr. Weber in one scene:

[Hayes:] “So you met [Mark] yesterday. Eerie, isn’t it? I’m still disconcerted, talking to him, and it’s been months. Of course, our group will be writing him up for the journals.”

Bow shot. Weber held up his hands. “I don’t want to do anything to...”

“No, of course not. You’re writing for a popular audience.” Broadside. “There’s no overlap.” (162)

Weber’s writing, for Hayes, represents a foil to the academic genre of writing in journals. But trained by this genre and still befuddled by Mark’s condition, Weber later pores over “all the medical indexes, exploring every clinical reference in the literature,” and deduces that “no real literature existed” about “Mark’s story,” for “what few cases he had found bore no direct bearing” on the complexities he encounters in Nebraska (393). Because of his encounters with Mark over time, Weber becomes “torn between the clinical, non-narrative, pure science, on the one hand, and hermeneutic, narrative popularization on the other” (Herman and Vervaeck 409). Science, Weber laments, is “written in chemicals” (Powers, *Echo* 484). Neurological cases, Weber realizes, are what becomes of those people chemically written into the literature of science. Cases that populate Weber’s own books—like “Adele” (259), “Maria” (235), “Edward” (288), “Jeffrey L.” (328), “Sarah M.” (135), and “Rita V.” and “Lionel D.” (329)—begin to haunt his thoughts about the practice of writing neurology. A memory of “Neil,” whom Weber “dramatized” in *Wider Than the Sky*, particularly unnerves the way Weber had “reduced him to story”: “He’d left ‘Neil’ behind in the prose looking glass, lost somewhere, off in an imperceivable direction, an unreachable place deep inside the narrative mirror” (159).

Documenting plasticity constitutes an important part of writing the literature of neuroscience today. *Neural Plasticity*, for instance, is the title of a prominent academic journal. “Plasticity is an integral property and the obligatory consequence of each sensory

input, motor act, association, reward signal, action plan, or awareness,” write Pascual-Leone and his team at the Harvard Medical School (379). “In this framework,” they continue, “notions such as psychological processes as distinct from organic-based functions or dysfunctions cease to be informative (379). Malabou takes many cues from neuroscientists, such as Jean-Pierre Changeux and Marc Jeannerod, in order to confront plasticity theoretically (e.g., *Plasticity; What Should*). In addition, non-fictional neuroscientists, like Ramachandran (494) and Giacomo Rizzolatti (449), pop up in *The Echo Maker* as part of the characters’ varying awareness of this literature. Because plasticity holds that behaviors continuously change the brain while that constantly modified brain changes behaviors, the stability of purely psychological accounts of consciousness are thrown into question (Pascual-Leone 378). One early scene between Dr. Weber and Dr. Hayes discussing Mark’s Capgras stages a central doubt in *The Echo Maker* over the new primacy of neurological accounts that subtract psychology:

[Weber]: “I don’t doubt the contribution of lesions. Right hemisphere damage is no doubt implicated in the process. I just think we need to look for a more comprehensive explanation.”

Hayes’s tiniest facial muscles betrayed incredulity. “Something more than neurons, you mean?”

“Not at all. But there’s a higher-order component to all this, too. Whatever lesions he has suffered, he’s also producing psychodynamic responses to trauma. Capgras may not be caused so much by the lesion per se as by large-scale psychological reactions to the disorientation. His sister represents the most complex combination of psychological vectors in his life. He stops recognizing his sister because some part of him has stopped recognizing himself. I have always found it worthwhile to consider a delusion as both the attempt to make sense—as well as the result—of a deeply unsettling development.”

After a beat, Hayes nodded. “I’m...sure it’s all worth thinking about, if that interests you, Dr. Weber.”

Fifteen years ago, Weber would have launched a counterstrike. Now he found it comical: two docs marking their territory, ready to rear up and batter at each other like bighorn sheep. *Ram tough*. Wellbeing coursed through Weber, the simple poise of self-reflection. He felt like mussing Dr. Hayes’s hair. “When I was your age, the prevailing psychoanalytic bias had Capgras resulting from taboo feelings toward a loved one. ‘I can’t be feeling lust for my sister, ergo she’s not my sister.’ The thermodynamic model of cognition. Very popular in its day.”

Hayes rubbed his neck, embarrassed into silence. (167-68)

The scene comically demonstrates literature’s weaponized uses in the history of science. The arc of this history articulated by Weber dulls the sharpness of prevailing modes of thought

that both shape the 'body' of literature and the bodies (ours, as well as characters) that literature shapes. *The Echo Maker* makes a point to readers that how one inhabits literature's models of cognition is up for grabs: no one genre can claim primacy when the genre under scrutiny concerns the primacy of cognition.

Importantly, Dr. Weber is also part of the 'literature' of neuroscience, and his complicated participation with that relation shapes much of the way *The Echo Maker* implicates the plasticity of a brain with character. Weber has just published his third book, *The Country of Surprise*, when the actions of *Echo Maker* take place (125). A literati of the science world, *Harper's* reviews his book (278), he embarks on a promotion tour of readings, radio spots, and interviews (287), and appears on television (233). During the televised reading, Weber recites a passage that embodies his conflictive relationship with writing and reading characters. The scene also provokes a reader to reflect on the plasticity of brains with character: "Consciousness works by telling a story, one that is whole, continuous, and stable. When that story breaks, consciousness rewrites it. Each revised draft claims to be the original. And so, when disease or accident interrupts us, we're often the last to know" (234). When an audience member questions him about violating the privacy of the people in his case studies, he answers by saying that "sometimes one case history actually combines two or more stories, to bring out a condition's most salient features" (236). The audience member retorts, "You mean they're fiction?" (236). The slippery distinctions of literature from story, or story from case, or case from fiction when it comes to neuroscientific characters challenge the stories of consciousness Weber tells himself and Powers attempts to articulate to others. Weber's medical students during lectures are infuriated with his inability to continue articulating neurology in the academic genre they expect: "They wanted science, not stories" (452). This impasse of articulation—of sharing common literature—in the face of his students implicates the work of plasticity in the novel. "How could he tell them?" Weber reflects (460):

Matter that mapped other matter, a plastic record of light and sound, place and motion, change and resistance. Some billions of years and hundreds of billions of neurons later, these webbed cells wired up a grammar—a notion of nouns and verbs and even prepositions. Those recording synapses, bent back onto themselves—brain piggy-backing and reading itself as it read the world—exploded into hopes and dreams, memories more elaborate than the experiences that chiseled them, theories of other minds, invented places as real and detailed as anything material, themselves matter, microscopic electro-etched worlds within the world, a shape for every shape *out there*, with infinite shapes left over: all dimensions springing from this thing the

universe floats in. But never hot or cold, solid or soft, left or right, high or low, but only the image, the store. Only the play of likeness cut by chemical cascades, always undoing the state that did the storing. Semaphores at night, cobbling up even the cliff they signaled from. (461)

A “play” that reads itself as it reads the world, a play of informational material, a play that constantly undoes the “state that did the storing”: “No hope of showing them that,” he reconciles, “He could at best reveal the countless ways the signals got lost” (461). Weber cannot even properly express these ideas in relation to the “matter” that involves them and that they involve. The theory of evolution, of which he is aware his students understand give them ground, does not write or determine or even adapt the work of innovation, and of plasticity, that characterizes its signal. Stories and cases form countless signals within the commotion of neurological literature which (in)form Weber (that he, too, forms). How can he describe a sense of unity from all of these possible dimensions? The story of his self that consciousness writes, and the stories that proposition that narrative, “explode” into a manic scene that grapples with how to become conscious of all those shapes and neurons and memories and experiences. The scene ultimately brings readers to a consciousness of his struggling brain, one that challenges what it is for a character to exist at all given our received practices of reading and writing “semaphores” that otherwise constitute literary characters.

“It is no longer important to ask whether the brain and consciousness are one and the same thing—let us put aside this old and specious debate,” writes Malabou; “Instead we must constitute this strange critical entity, at once philosophical, scientific, and political, that would be a *consciousness of the brain*. It is to the constitution of this new genre—open to everyone—that the question *What should we do we our brain?* invites us” (*What Should* 2). With “his epistemological crisis feeding into an ontological crisis,” Dr. Weber confronts this question in *The Echo Maker* just as the text of *The Echo Maker* forces confronts readers with this question (Hawk 21). “The structural bond,” writes Malabou, “between brain and history...here is so deep that in a certain sense it defines an *identity*” because the brain “*is a history*” (*What Should* 1). Weber is invited to this question—“the human brain musing on itself,” he tempts (Powers, *Echo* 343)—and invited to the constitution of this genre called “identity.” But the bond between a reader’s consciousness of their brain and the written consciousness of the character Dr. Weber is also opened to reconstitution: “What self-image would be left to us, in light of the full facts? The mind might not endure its self-discovery” (344). How can we create a brain with character’s existence at all, the novel pleads. He or his

brain may or may not endure, but his revelation of the consciousness of the brain demands his work and guides the work of Powers's novel. "The work proper to the brain that engages with history and individual experience has a name: *plasticity*," writes Malabou (*What Should* 4). Engaged by the call of plasticity, Weber focalizes working through that work as a reader focuses on the work the novel brings into one's consciousness.

The work of constituting a consciousness of the brain is not easy, and Weber struggles with the meaning of doing that work throughout the novel. The initial impulse "for Weber to write" Mark's story he comes to abandon (Powers, *Echo* 241). He persists in working through the work of writing as one form of constituting a consciousness of the brain. Later on, Weber recognizes his prior arrogance as an 'objective' writer of brains with character: that writer, "Famous Gerald" (445), whose type performs a "desperate scramble to make a continuous story out of chaos," utterly alienates him (465). Then,

A feeling came over Weber, a desire to supplement genuine neuroscience with half-baked literature, fiction that at least acknowledged its own blindness. He would make [his students] read Freud, the prince of storytellers...He would give them Proust and Carroll. He would assign Borges's 'Funes'...He would tell them the story of Mark Schluter. Describe what meeting the boy-man had done to him. Make some motion that their mirror neurons would be forced to mimic. (463)

This second approach to writing, one that would supplement neuroscience both with fiction and with the implicated attitude of its storyteller, is what, at this point, Weber considers "a neurological novel" (464). But the idioms of what he sees in that genre still claw at him, for he realizes that he still plays the observer in the form of writing (Hawk 22). Finally, in one of *The Echo Maker's* most self-reflexive moments, Weber reads himself as a brain with character:

Once, he knew a man who thought that telling other people's stories might make them real again. Then others' stories remade him. Illusion, loss, humiliation, disgrace: just say the words and they happened. The man himself had arisen from doctored accounts; Weber had invented him out of whole cloth. The complete history and physical: fabricated. Now the text unravels. Even the case's name—*Gerald W.*—sounds like the feeblest of pseudonyms. (Powers, *Echo* 524)

This parable, of and from the character's perspective, embedded in Powers's novel is a vantage point that crafts a consciousness of writing brains with character. For Weber, his struggle with writing a sense of self through narrative "catalyzes his dependence on narrative

to survive the crisis” (Hawk 24). This is why, in the end, the character Dr. Weber fails to vehicle an effectively plastic brain with character. On some of the final pages of the book, Weber is at a loss for words, and can barely connect with himself or others at all: “He struggles to place the words, written by someone who was once him...” (Powers, *Echo* 539). He appears to have become completely undone by his confrontation with a plastic consciousness of the brain. The brain successfully out-writes Weber. The brain also overwrites his character: the final paragraph of the novel depicts him walking zombie-like through an airport terminal before a reader confronts a blank page.

If this particular brain with character fails, in the fictional world of the novel, to read or write its own consciousness of the brain (to constitute that “genre” in Malabou’s terms), how does the *The Echo Maker* fare overall? Perhaps the failure of the character speaks to the success of the novel precisely because the novel refuses to gift readers with a formula for that question of genre. Visiting Mark a final time before flying back to New York, Weber listens to questions Mark asks him and finds himself declining the impulse to shape coherent, neurological narratives. Weber appreciates at this point that the work of thinking through what do to with one’s brain means that writing the genre is up for grabs, and thus he thinks to himself, “Nothing anyone can do for anyone, except recall: We are every second being born” (567). Weber, in this denouement, is still at a loss for words and immobilized by a lack of narrative. But the compulsion to share the work of plasticity propels *The Echo Maker* forward. “Destroyed and remade with every thought,” is the work open for others, to heed with others (569). Weber’s received genres of academic writing fail him, yet *The Echo Maker* impels cooperative literacy through literature, science, and reader participation to animate the crisis of constituting brains with character.

The trope of plasticity at play in *The Echo Maker* teaches that the commitment to the writing of this trope requires inhabiting new genres, and forging new operations of writing. The very struggle of writing plasticity that Weber engenders and the novel performs becomes a mode of knowledge creation that does work to create knowledge about what we can do with our brain. The ‘we’ to whom the novel addresses itself demands cooperative participation to make legible the question of character. And the writing of plasticity involved by the novel participates in the construction of meaning that my own analysis constitutes. How might we interpret, or read this participation?

Reading Plasticity

How does reading the trope of plasticity engage readers of *The Echo Maker*? Recall that when Karin first confronts Weber's books about "the brain's mind-boggling plasticity," she reflects how her own "synapses [were] changing" through the act of reading them (Powers, *Echo* 118). I want to ask: how might *The Echo Maker* hail us when we read about the neural plasticity it involves? If, according to Malabou, "the brain is a work, and we do not know it" because "our brain is plastic, and we do not know it," what are the promises of coming to know this work (*Changing* 1, 4)? What might an extended narrative meditation on the challenges of coming to know this work, like Powers's novel, offer that a scientific paper or philosophical manifesto could not?

It is safe to say that Richard Powers did not write a novel of plasticity out of cultural fashion or literary ornamentation. Bruno Latour notes that Powers is "the novelist of 'science studies,'" and is "the most rewarding source of philosophical inspiration" to "circumvent the pitfalls of critical or subjective discourse" (2). Notably, all of Powers's other novels to date "are organized around a particular scientific idea or technological innovation" (Taylor 75).¹⁰ Powers, Latour fawns, "connects and fuses domains of reality, takes the *uncertain* deployment of what a computer is, the *controversial* multiplicity of what a brain is, the *wavering* achievements of psychology, and then tries to relate them in a narrative that does *not* imply the existence of a character silhouetted out of a background and inserted into a story" (3). The cultural, political, scientific, and technological energies at work in Powers's writing "cantilever" the problematic split between exhibiting and representing ideas of science (Dennett, "Astride" 151). In fact, "It is the emergence of plausible fleshy characters, things, and stories, that is the very topic of several of his books," writes Latour (3). Powers delicately

¹⁰ *Three Farmers on Their Way to a Dance* (1985) takes up "photography and the assembly line"; *Prisoner's Dilemma* (1988) explores of "game theory" through mathematics and alternate reality; *The Gold Bug Variations* (1991) dramatizes molecular biology and the "genetic code"; *Operation Wandering Soul* (1993) deals with "psychological and surgical technology"; *Galatea 2.2* (1995) stages a confrontation of literature and "artificial intelligence"; *Gain* (1998), Taylor writes, is about "market mechanisms and industrial pollution"; *Plowing the Dark* (2000) problematizes "virtual reality"; *The Time of Our Singing* (2003) explores "the relation of physics to medieval, baroque, classical, romantic, and modern music, including jazz and blues"; *Generosity: An Enhancement* (2009) Taylor considers a reflexive novel treading issues of neural augmentation and "psychopharmacology"; *Orfeo* (2014) questions pathogens, tweets, and amalgamating music into DNA (Taylor 75-76).

arranges Weber's own failed consciousness of the brain's consciousness, and thereby invites his readers to this 'genre' (in Malabou's terms) by throwing its meanings up in *The Echo Maker*.

So much of *The Echo Maker* concerns itself with the construction of narrative, the plausibility of writing oneself through story, and making meaning from the activity of reading oneself through stories. Gerald Weber's story is of a writer who loses confidence in the ability of stories to produce meaningful reception in receivers: his story is of an author in crisis over the crisis of narrative consciousness. In this sense, Powers 'reads' a contemporary cultural crisis about the authority of neuroscience's authorship. Reading that authorial crisis—perhaps unsurprisingly—delivers us back to the recursive curve: evidence in 'the literature' of neuroscience tells us that building awareness of brain plasticity improves brain performance, promotes positive attitudinal change, and inspires interest in the neurosciences (e.g., Blackwell et al.; Fitzakerley et al.). Powers delivers the novel from within the thicket of cultural relations concerning plasticity because we, too, read it within that flux.

"I am thinking of the novel as a means for modern societies to describe themselves, not from outside or above, but from within a system of social relationships of which the novel is a component part," writes Nancy Armstrong (443). Is this not the work of constituting a consciousness of the brain in a nutshell? "At stake in our relationship to the biopolitical protagonist is the possibility of a possibility, namely, the possibility of imagining that one can bridge the gap between the restricted dialogue of first and second persons and the kind of somatic intelligence that might enable us to live together," Armstrong continues; "Given the generic expectations that we bring to the world imagined by contemporary fiction, this is no simple matter" (463-64). Crucially, for Armstrong, it is "our" relationship with characters as well as our living-together-with those characters that urges a cooperative "imagining" of constituting "somatic intelligence." If we relent to Roth for a moment: even if neuronarrative 'is' a genre, a genre that produces characters neurobiologically, then what becomes possible by reading and imagining the possibility of neurobiological characters is a consciousness (a "somatic intelligence") of the genre(s) of consciousness collectively made legible. In the game of text, reading exchanges, debates, and works "within" social relationships. Characters inhabit that genre because we inhabit it. That genre and the work we cooperatively do to form and inform us is "open to everyone" in Malabou's phrasing (*What Should 2*).

To be sure, this is precisely the gamble I see in Malabou's own textual work. "I ask that you read my books as formulating a single, continuous attempt to situate the *symbolic rupture between the plastic and the graphic component of thought* for each face of the philosophical works or problems under consideration," she writes (*Plasticity* 3). While Powers allows his characters to do the searching, to do the work of thinking plasticity, and feeling the effects of that work, Malabou cuts through all that and gives her readers instructions on how to read her. According to her, "plasticity is the metamorphosis of writing," because "plasticity *configures the traces, erases them in order to form them, without however rigidifying them*" (*Plasticity* 61). The consequence, she points out, is that "Writing is no longer the privileged hermeneutic stylus of the epoch" (*Changing* 55-56). So how do we approach 'reading' plasticity if plasticity insurrects the inscription and reception of texts?

"For Malabou," writes Alexander Galloway, "writing refers to the graphic, to the sign, to inscription, or to the trace—any aspect of mediation having to do with fixity" (10). Therefore, "this style, this plasticity, also produces its own form of reading" (11). This "plastic reading," requires a "regenerative force," according to Malabou ("Following" 22). She describes her practice of plastic reading:

To read or understand a text may very well mean, *even today*, drawing out its structural nucleus. But this structure, as we will know forevermore, is not originary; it erupts in the text as a result, as the result of its own deconstruction. Structure, or the structural nucleus, thus arrives in some sense after that which it structures. Structure would then be that which remains of a text *after* its deconstruction. Structure therefore names that element of a text which survives its own deconstruction, something I call form, and which comes to light like an a posteriori metamorphosis. In this way, for example, I was able to read Hegel, or Heidegger, in the days that followed their deconstruction, beginning with or following on from that deconstruction, so as to see develop, through a work of *generation—that is, an a posteriori engendering*—if not something like a reconstruction (which would, strictly speaking, be nonsensical in this context), then something like a scar, tugging the skin of the text to distribute its meaning differently, to reveal within it a new organization, to make possible in the very text different movements and different effects of truth. It is precisely this regenerative force of reading that I call plasticity. ("Following" 21-22)

There are a quite a few "somethings" in the quote above that plastic reading "reveals," namely the plastic structure of a text after deconstructive analysis has been worked through by a reader. "Structure is the thing that remains. It is not the 'truth' of the text, nor is it a 'skeleton' that holds the text together. Rather, it is a trace or fossil left behind by the text as it changes,"

observes Galloway (11). Malabou proposes a practice called plastic reading “to see develop” a text’s plasticity.

Might a plastic reading of *The Echo Maker* show what “remains” of a consciousness of the brain after the brain with character Dr. Weber fails to read and write it? First, for Malabou’s theory, Weber senses the plasticity left behind after the work of writing the self (as a brain with character):

Story was the storm at the cortex’s core. ...Then the story changed. Somewhere, real clinical tools rendered case histories merely colorful. Medicine grew up. Instruments, images, tests, metrics, surgery, pharmaceuticals: no room left for Weber’s anecdotes. And all his literary cures turned to circus acts and Gothic freak shows. (524)

From this vantage point, “All his sense of work was gone. Only the summary judgment remained” (409). If this constitutes the trace that remains of the ‘story of consciousness’ Weber once told himself, it might express to us something about how the work of constructing a consciousness of the brain takes place not just through reading (in the form of analysis or deconstruction), but in spite of it, alongside it, after it. “After years of trying to see others from the inside, Weber at last commits to seeing himself from the outside,” Powers writes (Interview). And second, after a deconstruction of *The Echo Maker*—one that would read the relations the novel has with other texts or discourses (both literary and non-literary); examine the intractable conflicts between meanings of different types (like ‘brain,’ ‘self,’ and ‘character,’ for instance); analyze the ways the novel offers an implicit critique of categories, like ‘neurological novel,’ used to describe it; and question how Power’s writing of a brain with character is itself organized by cultural conventions of writing brains with character—comes the plastic reading of the novel. The trouble I identify here is that whatever trace that remains to document—that perhaps the novel has different relations with other texts over time, that conflicts over meaning have changed with subsequent readings, or that the conventions of writing brains with character have altered since its publication—can only ever be a documentation of change. How a text distributes its meaning differently in a way that “reveals within it a new organization” is a good question to keep in mind, but it’s an unhelpful approach to *The Echo Maker* for two reasons. One, today, a plastic reading of the novel will only ever tell us about change, because its plastic reading only describes the genre of change. Two, if the goal of Malabou’s theory is to “construct a philosophical non-space from which to

point out, criticize, and correct the normative claims of other discourses,” it leaves little room for the cooperative readings invited by the novel itself (Samson 32).¹¹ At stake in our relationship to a brain with character like Weber is that possibility of imagining the kind of “somatic intelligence” that might enable us to live together with others. Realizing that possibility requires a cooperative reading and writing about the ways we inhabit our contemporary.

Where *The Echo Maker* succeeds in bringing a consciousness of reading and writing the brain to its reader is in disallowing Weber to fully write the plasticity of brains with character for us. The novel, while giving us the resources, the questions, and several helpful characterizations to confront a consciousness of the brain, leaves this work of constituting that consciousness open to readers. While the brain ultimately out-writes Weber, readers arrive at a blank page from which to dialogue and theorize other ways of constituting a consciousness of the brain together. One of Weber’s reflections late in the novel asks us to read our means of survival given the knowledge of plasticity, how to find ways to live in the consciousness of consciousness we must go on to inhabit:

Lying, denying, repressing, confabulating: these weren’t pathologies. They were the signatures of awareness, trying to stay intact. What was truth, compared to survival? Floating or broken or split or a third of a second behind; something still insisted: *Me*. Always the water changed, but the river stood still. The self was a painting, traced on that liquid surface. (Powers, *Echo* 483)

That image is a painting on liquid. Similarly, Malabou writes of her own text *Plasticity at the Dusk of Writing*, that “This book is a portrait. It paints the portrait of the concept of plasticity” (Malabou, *Plasticity* 1). Malabou’s own utterances of plasticity operate on narratives—portraits—of plasticity. In turn, *The Echo Maker*’s portrayal of the struggle of plasticity, a genre we inhabit, invites us trace our habits provisionally, which pigments the narrative of the novel. This plasticity of receiving ideas, common to Malabou and Powers,

¹¹ “There is an almost *clinical* quality to Malabou’s approach to reading,” Galloway claims (12). “She does not wish to ‘intervene’ in a text like her poststructuralist forebears... Malabou simply seeks to be a witness to this event and reconstruct the metamorphosis taking place beyond it all,” and this individualist objectivity is why Galloway considers Malabou “our last living structuralist” (12). In identifying a similar lack of cooperation, Kate Flint wonders whether plastic reading might “be, indeed, a form of reading that does nothing to the reader,” and concludes that one might “say that such reading distances a reader from emotional engagement and deliberately shuts down empathy” (20).

suggests its own proclivity to connect, forge, sever, and destroy inscriptions of those images through cooperative work.

Powers's and Malabou's two narratives of plasticity hail us to insurrect received genres that inhabit knowledge of the brain (whether academic writing, fiction writing, writing for a public audience, or philosophical writing). Our struggle with acknowledging plasticity becomes the work of writing, thinking, and reading together. This novel's central brain with character, Dr. Weber, does not get the final word on constituting a consciousness of the brain. What the book requires is cooperation between this character and readers. This open invitation both challenges and illuminates how neuronarrative can work to produce meaningful cooperation from the knowledge of plasticity. *The Echo Maker* finds its thrust in this thicket of debate and challenge to narrative, in its challenge to read and write brains with character as well as in its challenge to readers to craft ways to live with other brains—fictional and non-fictional—today.