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FROM CAPTURE TO CARE: ATTENTION, DIGITAL MEDIA, AND THE FUTURE OF COMPOSITION

Christian D. Smith
University of South Carolina

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FROM CAPTURE TO CARE: ATTENTION, DIGITAL MEDIA, AND THE FUTURE OF COMPOSITION

by

Christian D. Smith

Bachelor of Arts
University of Louisville, 2003

Master of Arts
Murray State University, 2007

Submitted in Partial Fulfillment of the Requirements
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College of Arts and Sciences
University of South Carolina
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Accepted by:
Byron Hawk, Major Professor
Christy Friend, Committee Member
John Muckelbauer, Committee Member
James Brown, Committee Member
Lacy Ford, Vice Provost and Dean of Graduate Studies
DEDICATION

For my son, Julian.
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I would like to express my gratitude to a network of people who made the writing of this dissertation possible. First, my wife, who agreed to move hundreds of miles away without a moment of hesitation and who never ceased to encourage me along the way. I cannot imagine what my graduate school experience would have been like without her. I would also like to thank my father, whose unwavering moral support has yet to fail and to whom I owe whatever intellectual curiosity I can claim. Thanks must also go to Jeff Osborne, who urged me to take a look at the composition and rhetoric program at the University of South Carolina in the first place.

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ABSTRACT

This dissertation investigates the relationship between digital media and cognition as it emerges in the problematic of attention. Specifically, the project examines the workings of attention across three sites (social, neurological, and technological) in order to argue for a renewed cognitive process theory of writing based in attention studies. Using the ancient pedagogical concept of *epimeleias*—attending to, taking care—my dissertation asks after the ethical and rhetorical stakes of care in context of contemporary higher education. Ultimately, my dissertation aims to provide a foundation for digital literacy practices—literacy narratives, wiki-writing, remix, audio-visual essays, etc.—in light of the increasing shift towards hybrid and fully digital writing courses and massive open online courses (MOOCs).
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CHAPTER 1

INTRODUCTION

In “Hyper and Deep Attention: The Generational Divide in Cognitive Modes” (2007), N. Katherine Hayles argues that the greatest challenge to contemporary education is a generational shift in cognitive styles. For Hayles, students most tangibly demonstrate this shift in their increasing inability to sustain attention on single streams of information. While Hayles observed this shift in her own students, she notes that its “full effects are likely to be realized only when youngsters who are now twelve years old reach our institutions of higher education” (187). The “youngsters” Hayles identifies are now, of course, the students enrolled in first-year composition courses and her claims are supported by much of what is heard from writing instructors regarding student attention.

While the increasing emphasis on multimodal composition within rhetoric and composition is a necessary first step to meet Hayles’s challenge, I would argue there is still much work to be done by composition scholars regarding the relationship between digital media and attention. Further, while much of the current research surrounding multimodal composition and digital rhetoric emphasizes the production of digital texts, questions regarding the reception of digital texts are often left underdeveloped. In the pages that follow, I argue two things: first, that understanding the question of reception as inseparable from the question of attention enables a productive dynamic between reception-attention in the context of student reading and writing courses; and, second,
that an ethical response by college writing instructors to Hayles’s claim entails a more
detailed investigation into varied cognitive styles and attentional forms familiar to
contemporary students.

More significantly perhaps, I argue that this kind of response to Hayles’s work
requires a re-engagement between composition studies and cognitive science in order to
fully account for the effects of emerging technologies on cognition and attention.
Necessarily, given the above, the development of a contemporary cognitive process
theory of writing would need to be wholly interdisciplinary. Hard distinctions between
technology and science studies, cognitive science, and composition would need to
become permeable enough to allow for a productive exchange of insight.

Much as Hayles’s article draws from neuroscience, education theory, English
studies, and medicine, this project draws heavily from a number of disciplines in order to
demonstrate how composition scholars might *attend* to attention differently. Beginning
with the sociology of science and the work of Bruno Latour, this project aims to provide
a useful frame to demonstrate how a contemporary cognitive rhetoric could resist the
positivist orientations of previous iterations in the field. Building on the work of scholars
rethinking rhetoric as a relational ecology rather than discrete event, ecological cognitive
models would work to take into account the suasiveness of the medial objects,
technologies, and environs through which students compose. Similarly, the reiteration of
cognitive rhetoric I argue for aligns itself with many of those same scholars defining
rhetorical theory broadly enough to include non-human objects historically deemphasized
by the field. As Thomas Rickert notes:

Rhetoric impacts the senses, circulates in waves of affect, and communes
to join and disjoin people. It gathers and is gathered by things not as denial of the social but as an essential complement to it. Rhetoric may give priority to the expressly salient, but the salient must take part in and emerge from the ambient. We can think this in terms of Richard Lanham’s notion of rhetoric as an economics of attention, provided we expand the concept of attention beyond that which is limited to the subjective, intentional, or merely cognitive; attention would thereby come to include the materiality of our ambient environs, our affective comportments, the impact of that which escapes conscious notice, and the stumbling block presented by the finitude of knowledge when facing the plentitude of the world and its objects. (Ambient Rhetoric x-xi)

From Rickert’s observation we can begin to see how a contemporary cognitive process theory may give priority to particular expressions of attention, but only through an understanding that such expressions emerge from conditions exterior to individual cognition. Similarly, from Rickert’s use of the ambient, we can see the extent to which attention itself can be redefined as an ambient relation in order to distribute the responsibility for attention’s composition. Attention as a distributed and emergent phenomenon could be a productive pedagogical frame from which instructors could view the ubiquitous presence of media and technology—not as competition for student attention, but as integral to its very composition.

Toward this end, the questions guiding this dissertation project could be stated as follows: How might we—as writing instructors, as English professionals—begin to think of attention as composed and distributed across multiple sites? What might such an
orientation enable pedagogically? How might our rhetorical traditions and disciplinary histories inform the possibilities of inventing pedagogical and ethical practices that respond to distributed attention? And, finally, what digital models currently exist that composition scholars could make productively use? As a response to those inquires, the remainder of this chapter will outline the exigence of the project and suggest how a reorientation of composition’s disciplinary object towards attention might be used to revitalize conversations of cognitive rhetoric.

As discussed above, Hayles observes a noticeable cognitive divide existing between previous generations—those educated largely through the forms of media fostering what she identifies as “deep attention”—and those current generations born after the widespread use and availability of the Internet. Written for an audience of language and literature professionals, Hayles’s work implies that this divide presents a problem for those teaching the critical reading and writing courses that demand prolonged engagement with difficult texts—just the kinds of recursive reading practices, Hayles argues, hyper-attentive students find difficult. I argue that Hayles’s work, both in this earlier article and the more recently published *How We Think: Digital Media and Contemporary Technogenesis* (2012), provides scholars of composition and rhetoric an opening from which we can begin to research student attention as emerging from a relation among medial technologies, the material brain, institutional culture, language, and cognition. Following Latour’s discussion of hybrids in *We Have Never Been*
Modern (1993)—as constructions that demonstrate the messy complexity between nature and culture—attention can be viewed as a hybrid object that would best be served through equally hybrid means.

With regards to role of English professionals in higher education, Hayles makes a persuasive case that it is our job to bridge the gap between hyper and deep cognitive modes. We are perhaps in the best position to identify what value deep attention holds—culturally, institutionally, and pedagogically—in contemporary contexts. Taking Hayles’s challenge seriously, this project asks how composition might scholars begin to research and trace attention’s composition in productive hybrid ways. Beginning with this question, this project works to couple composition’s history of engagement with cognitive science—most identifiably in the work of Linda Flower and John Hayes—with recent conversations surrounding the articulation of a neurorhetorics (Pruchnic 2008; Jack 2010; Mays and Jung 2012). Such a coupling can gesture towards the ethical implications of a cognitive process theory of digital writing. In this last regard, the value of contemporary continental thinkers working to integrate scientific insight into their work has been invaluable. Specifically, I draw from the work of Bruno Latour (Chapter 2), Catherine Malabou (Chapter 3), and Bernard Stiegler (Chapter 4).

Discussing the work of Malabou and Stiegler, Alexander Galloway recently observed that both have related projects insofar as they use the cognitive and neurosciences to reinvigorate conceptions of subjectivity and critique. As such, I argue, both Malabou and Stiegler are working to define a particular neurorhetoric of affirmative inventionism similar to the way in which John Caputo characterizes Derridean

2 See Galloway’s collected lecture and seminar notes published as French Theory Today: An Introduction to Possible Futures in 2010.
deconstruction as an “inventionalism” running counter to the forces of “essentialism” (42). Further, in *Derrida, Deconstruction, and the Politics of Pedagogy* (2009), Gert Biesta describes Derridean inventionalism as a necessary element in ethical pedagogies as it works to sustain an openness to future alterity:

Derrida's “inventionalism” is important for education—and more importantly for education after the “death of the subject”—because it approaches the question of human subjectivity in a radically open manner, as something that intervenes, that comes from the “outside,” that comes in and breaks through our expectations and conceptions. (104)

For Malabou, inventionalism in this sense is reflected in the material properties of the brain through neuroplasticity. Similarly, for Stiegler, the brain’s plastic properties enable the brain to act as an interface between our individual psycho-phenomenological experience and the collective historical trajectories of culture through *transindividuation*.3 That is, for Stiegler, neuroplasticity enables the individual psychic and biological I to be always predicated upon a technological, social, and material We. As Stiegler notes in his philosophical autobiography, *Acting Out* (2009), “The I and the we are two phases of the one process, in the first place because they share the preindividual funds, which constitute a transindividual horizon” (5). Similarly, Catherine Malabou’s notion of *plasticity* is largely informed by scientific research into neuroplasticity that seems to provide a materially embodied witness to the idea that “subjectivity can only constitute itself by *returning* to itself, never by announcing itself in the naïve movement of a birth

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3 Stiegler’s use of transindividuation is taken directly from the work of Gilbert Simondon, and is meant to emphasize the collective processes of individuation. While publication in English is currently scant, a 2007 special issue of the journal *Parrhesia* dedicated to Simondon’s work is a useful introduction to his thought.
without history” (*Plasticity* 9). To further define the importance of plasticity to Malabou’s work, Noëlle Vahanian observed:

Malabou’s philosophy, unlike that of much of typical philosophy of mind and neuroscience, is not about promoting a capitalistic ideological paradigm by seeking ways to enhance the docile and disciplined neuronal subject; instead, it is about inciting us to take charge of our own brain, of our own subjectivity, and thereby, of our society. We can do this, not by denying that there is continuity between our brain and our thoughts, between the neuronal and the mental, between the natural and the cultural, but by recognizing that this continuity is not without contradiction, by recognizing that the passage from the neuronal to the mental is the site of contestation whereby freedom is established precisely because the brain is naturally plastic. (‘A Conversation” 2)

We can see that both Stiegler and Malabou are invested in articulating a neuronal subjectivity premised upon plasticity and—at least for the former—the relationship between neuroplasticity and attention.

Coupling Malabou and Stiegler’s work with recent scholarship defining neororhetorics, I argue that a neororhetorical orientation to the problem of attention would ask how research in cognitive neuroscience can inform classroom practice without falling into the instrumentalist and essentialist tendencies that seemed to characterize much of the discipline’s prior engagement with cognitive science. In so doing, my project aims to follow Mays and Jung’s anti-essentialist approach to neororhetorics as a pedagogically useful methodology resisting foreclosure:
the language of brain science and rhetoric-composition’s importation of it
are united by a principle of epistemological uncertainty: Both fields are
motivated by the desire to understand concepts like agency and learning
that—by their very terministic nature—defy empirical scrutiny. (56)

Uncertainty that, I argue, is mirrored in both Malabou and Stiegler’s conceptualization of
the material brain. Further, by framing pedagogy through a concept of neuroplasticity we
can broaden current ecological models of composition in order to account for variance in
attention and cognitive styles.

In A Counter-History of Composition: Toward Methodologies of Complexity
(2007), Byron Hawk notes that the concept of ecology incorporated into rhetoric and
composition scholarship “moves discussions of writing, rhetoric, and invention beyond
the standard inventional heuristics and social categories towards models that integrate
environments into writing and invention processes” (223). This project argues that
scholars working with ecological models of composition, in their efforts to distance
themselves from the positivist implications of cognitive rhetoric, are often overly
dismissive of the potentials of contemporary cognitive and neuro-sciences to speak to
how we might integrate environments into composition studies. And, just as often, such
scholars are too reliant upon defining cognitive process theories of writing in ways that
were articulated nearly two decades ago. For instance, Sidney Dobrin and Christian
Weisser in “Breaking Ground in Ecocomposition: Exploring Relationships between
Discourse and Environment” (2002):

When cognitivists in composition began examining the processes by
which individual students compose written text, this inquiry was
undertaken with little regard for the sites in which writing takes place. That is, cognitive process understanding of writing offers few means of considering the effect environment has on those very processes. As composition moved away from cognitive models of writing, compositionists began to consider the implications external forces might have for writers, and in turn what effect writers have on those same external forces: gender, culture, race, class, ideology. (575)

While Dobrin and Weisser are certainly right with regards to historical trajectories of composition studies, I argue that it is time for scholars to reconsider cognitive process theory in light of recent research highlighting the affective relationship between cognition and the technological-material environment. In this way, ecological models of composition could reconsider the role of cognition in composition and begin to address both attention and the issue of the “cognitive divide” identified by Hayles. Towards this end, I will provide a theoretical foundation for identifying texts, new media objects, and classroom objectives that address Hayles’s call for educators to “allow classroom space to be reconfigured” and for 21st century pedagogies to work towards “building bridges between deep and hyper attention” (“Hyper and Deep” 195).

In 2012, Elon University’s School of Communication together with the Pew Research Center’s Pew Internet & American Life Project released their fifth “Imagining the Internet” survey. The results of this “Future of the Internet” report gathered survey data from over a thousand Internet “stakeholders” and were based on questions designed to predict the cultural impact of digital technologies in the next decade. The first series of questions asked respondents to address the effects of emerging technologies on education
and the mental abilities of hyper-connected students. Many of the responses are notable not because they unanimously agreed that education has to adapt *vis-à-vis* digital technology, but because this adaptation was necessary *due to* the neurophysiological differences between generations. For example, respondents were asked to agree or disagree with the following statement:

> In 2020 the brains of multitasking teens and young adults are ‘wired’ differently than those over the age of 35 and overall it yields helpful results. They do not suffer notable cognitive shortcomings as they multitask and cycle quickly through personal- and work-related tasks. (*“Imagining”* 2)

While respondents were fairly split (55% agreed, 42% disagreed, 3% did not respond) as to whether or not this different “wiring” will have beneficial or harmful results—and in what ways—few respondents took issue with the very premise of the statement itself: the idea that the future multitasking teen would be wired differently than his or her parents.

In fact, most agreed that the fragmented attention and lack of patience already recognizable in current students will only be intensified in the coming decade. Over the course of the survey a narrative emerged that equated increased use and time spent in front of digital screens with an increasingly unwavering disposition towards distraction. This belief led one respondent, futurist author of *Welcome to the Future Cloud: The World in 2025 in 100 Predictions* (2012), Marcel Bullinga, to observe that “Game Generation” teens will have issues with attention as they “find distraction while working, distraction while driving, distraction while talking to the neighbours” and, further, that the parents and teachers of these teens “will have to invest major time and efforts into
solving this issue: silence zones, time-out zones, meditation classes without mobile, lessons in ignoring people” (“Imagining” 20). While education has historically been largely a matter of managing distraction in much the same way Bullinga mentions, what makes many of the sentiments expressed in the “Future of the Internet” report different are the ways in which the properties of the material brain are coupled with emerging technologies in order to rhetorically mobilize and ground arguments regarding these now familiar dynamics of attention and distraction.

Readers of Hayles’s work will no doubt find something familiar in the “Future of the Internet” responses. The narrative of the differently wired teen is similar to Hayles’s argument that “Children growing up in media-rich environments literally have brains wired differently from those of people who did not come to maturity under that condition” (192). For Hayles, such neuronal changes are rooted in a more general cultural shift towards media that both require and encourage hyper attention. Hayles characterizes these “hyper” media as having an “increased tempo of visual stimuli and an increased complexity of interwoven plots … [coupled with] a decrease in time required for an audience to respond to an image” (191). Conversely, the media of deep attention, best characterized by Hayles as the Victorian novel, presents the consumer with a non-interactive object composed in a single medium and requiring a minimum of distraction. For those of us in composition and rhetoric, a discipline historically invested in fostering modes of deep attention and critical reading skills, Hayles’s argument has immediate and obvious implications for our classroom practice. Less obvious, however, is the ways in which this work gives us an opportunity to reorient the discipline in relation to attention itself—as a composition. Less obvious too, is how composition studies could use such a
reorientation to begin discussions with what many scholars have identified as a “neurological turn” in the humanities.4

Cathy N. Davidson’s *Now You See It: How Technology and Brain Science Will Transform Schools and Business for the 21st Century* (2011) provides a positive and popular iteration of what is at stake in the “neurological turn” for the humanities. Davidson’s book opens with a retelling of her participation in the now famous “gorilla experiment.” This 1999 experiment, conducted by two experimental psychologists and cognitive scientists, Daniel Simons and Christopher Chabris, aims to demonstrate the power of selective attention by having audiences watch a short video of six students tossing a basketball. The audience is simply told to count the number of times the students in white shirts toss the ball. As the students begin tossing the ball and weaving randomly around one another, it quickly becomes obvious to the viewer how much attention is required to focus and count the number of tosses. About twenty-five seconds into the video another student dressed in a rather unconvincing gorilla suit enters from the right of the frame, stops in the middle, thumps his chest, and exits to the left. As the experiment’s results surprisingly demonstrate, 50-60% of audience participants consistently miss the gorilla simply because they were so intensely focused on counting the correct number of tosses. Conversely, the participants that see the gorilla fail to count the correct number of tosses. For Davidson, this experiment is a clear indication of an individual’s cognitive limitations. It is also a call to pool our cognitive resources in order to both count the tosses and see the gorilla.

The recently published *A Field Guide to a Meta-Field: Bridging the Humanities-Neuroscience Divide* (2011) presents a thorough introduction to many of the issues involved in this turn.
Davidson’s book questions popular assumptions regarding attention and multitasking. Reflecting on the distinctions between monotasking and multitasking, Davidson makes a case for a productive blurring of the two when interacting with digital technologies. Rather than discrete units of information and attention, digital environments encourage an associative and affective logic where activities, ideas, and texts bleed over into one another. In *Now You See It*, Davidson notes,

> If what we are seeing isn’t discrete switching from one task to another but a form of attention that merges and remixes different strands of information almost seamlessly, then one ally we have in this new form of attention is the brain’s own associational, interconnecting energies. (143)

Similarly, in *Lingua Fracta: Toward a Rhetoric of New Media* (2009), Collin Gifford Brooke discusses how this medial and textual blurring is experienced in online environments. Using the phrase “persistence of cognition”—a take on the use of “persistence of vision” in cinematic studies—Brooke notes that keywords, concepts, and images leave a cognitive imprint forms over time that into patterns with an associational logic—much like an image itself may leave traces as it imprints itself on the retina in the persistence of vision phenomenon. Defined as the recognition of “the construction (and dissolution) of patterns over time” (151) and “the practice of retaining particular ideas, keywords, or concepts across multiple texts” (157), Brooke’s persistence of cognition points towards the ways in which we may begin to articulate styles of attention that are simultaneously deep and hyper. Such intensifications of associational logics and their effect on attention are, I argue, inseparable from rhetoric. Further, for rhetoricians informed by Richard Lanham, inquiries into the workings of human attention, such as the
“gorilla experiment” and Brooke’s articulation of a “persistence of cognition,” simultaneously inform us to the workings of rhetoric.

Like Hayles, Stiegler recently turned towards the subject of attention as both a pedagogical and neurocognitive problem. In Taking Care of the Youth and Generations (2010), Stiegler argues that some forms of digital technologies capture attention and effectively “short circuit” the individuating properties of the brain precluding students from making intergenerational connections necessary for education. For Stiegler, the “capture” of new media results in an “organized mass regression” in which culture itself is at stake (12). Stiegler’s answer, however, is not to languish in nostalgia or mount arguments for a return to pre-digital media, but to work to develop and produce sustaining systems of care in the digital milieu. By care, Stiegler means to attend to and look after, the pharmacological5 work of tracing relationships between technologies, their neurophysiological effects, and their socio-cultural consequence. In other words, to develop what could be referred to as a posthuman ethics of technology. Unlike Hayles’s hyper/deep distinction of cognitive modes, Stiegler’s capture/care distinction can provide a more explicit articulation of the ethical dimensions at play in problems of attention. Dimensions that oblige writing instructors to define what responsibility means in relation to emerging technologies and new media. How do we, as teachers, look after the reception and interaction of digital texts in order to attend to their cognitive effects?

After developing the distinctions between Hayles’s hyper/deep and Stiegler’s choice between capture and care, I will turn explicitly towards the kinds of new media

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5 Following Derrida’s work on Plato’s Phaedrus, Stiegler defines all technologies as essentially “pharmacological” in that they present us with a pharmakon—a poison and a cure. This will be discussed at length in the fourth chapter.
objects that, in Stiegler’s terms, elicit care. Such objects, I argue, act as an interface between individual psychic, social, and technological bodies. Whereas Hayles argues that educators need to begin thinking about the cognitive styles of our students, and Lanham observes a return to rhetorical education through oscillatio, this project aims to demonstrate that such discrete categories (at/through, hyper/deep, even capture/care) are not as conceptually discrete as commonly thought, but are, in fact, better understood *ecologically* as existing in a plastic state. As Hayles mentions elsewhere in her essay, “In contemporary developed societies, this plasticity implies that the brain’s synaptic connections are coevolving with an environment in which media consumption is a dominant factor” (“Hyper and Deep” 161). Plasticity makes evident that human brains are in a constant state of becoming with their environments. Similarly, in their recently published *Life after New Media: Mediation as a Vital Process* (2012), Sarah Kember and Joanna Zylinska rethink radical neuroplasticity along Deleuzian lines as enmeshed in digital environments—as a *becoming* ontology. When interacting with “friends” on Facebook, for example, Kember and Zylinska question whether the experience would be better understood as a “becoming Facebook” (161). The recent turn to neuroscience, particularly this notion of plasticity, presents scholars in composition and rhetoric with an opportunity to question how digital practices in all areas of student life are affecting the pedagogical practices available to us as teachers. As long as students and teachers are spending time with one another in a physical classroom, I would argue, that time is better

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6 I use the term “new media objects” here in the broad sense employed by Lev Manovich as any digital object or artifact from “a still digital image, a digitally composited film, a virtual 3D environment, a computer game, a self-contained hypermedia DVD, a hypermedia Web site, or the Web as a whole” (*Language* 39).

7 Lanham’s *at* and *through* oscillation will be discussed at length in the following chapters.
spent increasing the rhetorical capacities of attention rather than attempting to micro-manage distraction. And, a reorientation of the field towards attention would facilitate such processes.

The second chapter, “Cognitive Rhetoric, Second Empiricism, and Writing as a Matter of Concern,” begins this process by tracing the scholarly history of cognitive process theory in composition studies. The chapter works not only as a review of the literature, but also to demonstrate the ways in which contemporary cognitive process theory would be best framed as a Latourian matter of concern. As such, new cognitive theories would not rely on the positivist models of scientific realism, as previous scholars working in cognitive rhetoric arguably had, but work to produce cognitive studies as hybrid objects combining a variety of modes, values, and epistemologies. Approached in this way, new cognitive theories would resist the essentializing effects previous theories had towards the composing practices of students. Rather, new models would be aligned with Latour’s notion of a second empiricism premised on empirical models that are affirmative, generative, and playful. This chapter ends by gesturing towards rhetorical theories that have already initiated the work of a new cognitive rhetoric through the incorporation of neuroscience.

Chapter three, “Plasticity and the Neurorhetorics of Attention,” begins by identifying three distinct articulations of neurorhetorics in recent literature in order to emphasize the material neurorhetorics defined by Jeffrey Pruchnic in “Neurorhetorics: Cybernetics, Psychotropic, and the Materiality of Persuasion” (2008). Pruchnic’s articulation of neurorhetorics questions whether the intersection of neurology and culture is perhaps reaching unprecedented
degrees of intensity in the present moment as our affective capacities and neurological responses increasingly appear to be the common ground of contemporary experiences with not only psychotropic substances, but also our growing immersion in virtual realities and online realms, as well as the general productions and flows of hypercapitalism. (195)

From the above, we can begin to see how neurorhetorics may be a productive frame for how rhetoric and composition might work to integrate the neurological, the social, and the technological into the issue of attention. Further, this chapter moves from a discussion of neurorhetorics to Catherine Malabou’s notion of neuroplasticity, which reinvigorates questions of subjectivity and agency in inventive ways for rhetoric and composition.

Ways that allow us to look back through the rhetorical tradition, to Isocratean rhetorical *paideia*, in light of plasticity, specifically, through the role of *epimeleias*—as focused attention, training, and taking care—in Isocrates’ idea of rhetorical education. After tracing a number of studies in conventional neuroscience highlighting the role of environment and repetition, chapter four asks how the rhetorical arts may be interpreted as plastic arts. Just as the plastic arts—sculpture, ceramics, etc.—involve the manipulation of plastic material, contemporary scientific research suggests that the neuronal properties of the material brain are equally dynamic and malleable.

The fourth chapter, “Psychopower and the Pharmakon of Composition,” takes an explicit turn towards the ethical in order to ask, after Bernard Stiegler, how the challenge of attention identified by Hayles and others may present an ethical problem—and, if so, what responsibility writing instructors have to engage it. Beginning with Stiegler’s concept of *psychopower*, which can be thought of as the effect of Foucauldian biopower
on the cognitive domain, chapter four works to challenge Richard Lanham’s conception of the attention economy as emerging through a “bottom up” dynamic. Stiegler’s use of *capture* troubles the efficacy of bottom-up organization arguing instead for an increased focus on the role of hypercapitalism in an “attention economy.” Finally, this chapter works to couple Lanham’s bi-stable oscillation with the pharmacological oscillatory dynamic between capture and care. Identifying three persistent elements of *care*—the interfacial, the contributory, and the ontological—chapter four ends by gesturing towards the ways systems of care may be created and maintained within composition courses.

Finally, the fifth chapter, “Careful Pedagogies,” analyzes three digital objects as potential systems of care: Stephen Duncombe’s *Open Utopia* project, a wiki-based writing course taught at the University of South Carolina in the spring of 2009, and machine-scoring software currently being developed by a for-profit company, LightSIDE Labs. The first consists of a digital edition of Thomas More’s *Utopia* that aims to not only present an authoritative text, but also a social platform to discuss More’s work, and, finally, a wiki-based writing environment that encourages users to remix More’s text in order to construct their own utopian ideals. The second, a wiki-based writing course piloted at the University of South Carolina, asked students to work through networked writing spaces in order to enact and question the deliberative potentials of digital technologies. For their final projects, students spanning multiple sections collaborated to research and compose wiki-based multimodal essays responding to salient issues found in their readings of John Dewey, Michel Foucault, Cornel West, and others. Finally, the third example looks at the public debate surrounding writing assessment following the National Council of Teachers of English’s “Position Statement on Machine Scoring.”
(2013). After identifying a number of the field’s guiding assumptions regarding automated assessment, I ask if there might be a place for automated systems of care within what Wardle and Roozen (2012) have identified as “ecological models of writing assessment.” Premised on complexity, such models are nuanced enough to recognize the multiple sites and varied ways in which writing occurs and is evaluated. Chapter five argues that this ecological model is key to articulating a productive middle ground between the locally-grown writing assessment of Bob Broad’s “Dynamic Criteria Mapping” and software emphasizing speed and efficiency asked for in the Hewlett Foundation’s original call for A.S.A.P., the Automated Student Assessment Prize. In place of a choice between either situated or standard models of assessment, this chapter ends by observing potentials for careful invention within situations of automated scoring.
CHAPTER 2

COGNITIVE RHETORIC AND WRITING AS A MATTER OF CONCERN

The question was never to get away from facts but closer to them, not fighting empiricism but, on the contrary, renewing empiricism.

– Bruno Latour, “Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern”

Largely due to emerging technologies, discussions surrounding the subject of attention have recently intensified. By presenting a “crisis of attention”—implicitly obliging its readers to choose between the affordances of alphabetic print or digital media—many of these discussions are mapping the stakes of changing literacy practices and their uncertain effects on education. In addition, they are reframing the boundaries between individual agency and the ambient world by situating themselves in the nexus between contemporary neuroscience emphasizing both the role of environment in brain development and anecdotal evidence suggesting digital media affects neurophysiology (Hayles 2012; Stiegler 2010). Bestselling books like Nicholas Carr’s The Shallows: What the Internet is Doing to our Brains, and Cathy Davidson’s Now You See It: How Technology and Brain Science Will Transform Schools and Business for the 21st Century, as well as the much-shared series of articles appearing in the New York Times, “Your Brain on Computers,” exemplify how these discussions have captured the popular imagination and just how broad the spectrum of opinion can be.

Despite the amount of work produced on the subject of attention and its centrality
to the writing process, composition studies remains reluctant to attend to these conversations. With few exceptions, compositionists have left a broad array of interdisciplinary work on attention out of their scholarly conversations altogether. The current lack of interest in attention studies by composition scholars, I argue, is the result of two persistent tendencies in the field: first, a continued backlash against the cognitive theories of composition that were so dominant in our disciplinary past; and, second, the conservative pace at which composition studies moves to recognize emerging technologies—technologies that continue to change our compositional and rhetorical practices.

Beginning with the dual premise that attention is the site best suited to theorize the relationship between cognition and technology and that putting such theories into practice is the future of composition studies, this chapter attempts to rectify the above tendencies in the field precluding attention from scholarly work. Through an historical survey of composition’s interrupted engagement with cognitive science, I hope to reassess this institutional legacy and make an argument for tactical empiricism following Bruno Latour’s idea of a second empiricism that is the “next task for the critically minded” (“Why Has Critique” 232).

Due to its positivist connotations, scholars working in composition theory are hesitant to engage empirical research in writing. By many, this research is often viewed negatively, as a product of the field’s ideologically uninvested past, and enabled only by

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1 Due to its historical relation to Richard Braddock’s 1963 report for the NCTE, I have chosen composition studies as the site of this engagement, rather than computers and writing, composition-rhetoric, literacy studies, or any other configuration of the related fields that make up rhetoric and composition.
neglecting the socially and politically situated aspects of knowledge production. Often, the early dominance of cognitive rhetoric in the history of composition studies is invoked as a cautionary tale against what happens when we let positivist epistemologies undermine the complexity of the writing process (Berlin 1987; North 1987). On the other hand, there is currently a growing body of scholarship that argues the emphasis on social-construction, ideological critique, and textuality have left research exhausted and, in the final analysis, unable to say anything at all. As Raúl Sánchez has recently noted, “the issue today is that composition’s modernist and postmodernist legacies together do not offer enough equipment with which to theorize, examine, and teach writing in contemporary contexts” (“Outside the Text” 236). As Sánchez himself suggests in the same piece, I argue that the work of Bruno Latour is currently the closest thing we have to provide the kind of necessary theoretical and pedagogical equipment Sánchez calls for.

Running the risk of oversimplification, it could be said that Latour’s project aims to articulate an affirmative *and* between the natural and the social—not as a bridge between two supposedly opposed ends, but as a denial of the totalizing claims of both and “move sideways,” drifting through the fluid current of relations without affirming either (What is the Style 14). Such an orientation would aim to engage in meaningful relations with actors—human, non-human, social, environmental, technological, and conceptual—in order to enter those flows and resist the demands to make static choices between either the natural world of scientific realism or the socio-phenomenological world of experience.

Observing the former, Alfred North Whitehead (1926) noted that scientific realism consists wholly of the “dull affair” of nature carrying on “soundless, scentless,
colorless; merely the hurrying of material, endlessly, meaninglessly” (*Science and the Modern World* 69). Of the latter, Latour argues, all we have to go on is a *phantasmagoria* of the senses contained in the “circumvolution of our brain and the illusions of our mind” (*What is the Style* 11). Further, drifting in the flow between these totalizing forces entail the recognition of complex ecologies of relations that make up both the natural world of material and the discursively constructed social world. In between, the primary debunking modes of critique, so esteemed on either side of the bridge, are deemphasized while the role of composition is emphasized. Composition, here, is just as concerned with universal values as critique; however, it proceeds because those values are to be *composed* rather than preexisting.

Composition, therefore, proceeds through a double movement that is, in a sense, always ahead of itself: first, composition is predicated upon what is attended to—what and how attention is paid to various relations; and, second, how *well or successful* the rhetorical practices are that emerge to announce those relations. In this way, composition remains intimately related to Richard Lanham’s definition of rhetoric as a double gesture, attention-rhetoric. Through Latour, scholars can begin to articulate the relationship between composition and rhetoric in a much different way than either empirically informed writing studies or writing process theories founded on social-constructivism and ideological critique. It will, in a sense, be much like Latour’s own articulation of *compositionism* in the “Compositionist Manifesto” (2010):

*compositionism* takes up the task of searching for universality but without believing that this universality is already there, waiting to be unveiled and discovered. It is thus as far from relativism (in the papal sense of the
word) as it is from universalism (in the modernist meaning of the world—more on this later). From universalism it takes up the task of building a common world; from relativism, the certainty that this common world has to be built from utterly heterogeneous parts that will never make a whole, but at best a fragile, revisable, and diverse composite material. (474)

Composition studies as a Latourian discourse of compositionism, I argue, provides a productive inroad through which composition studies could reengage with cognitive science and begin to articulate empiricism differently. Perhaps most importantly, however, compositionism has historical precedence in the field from scholars most responsible for cognitive rhetoric’s dominance throughout much of the 1980’s. As will be returned to later in this chapter, Linda Flower’s own notion of Observation-Based Theory Building and its contribution to empirical methodologies holds potential for future research in composition studies. Indeed much of Flower’s work in the last quarter century is concerned with many of the same problems and lines of inquiry so central to Latour’s own work.

Before returning to either Flower’s observation-based approach and Latour’s potential impact in composition studies, the remainder of this chapter will trace a disciplinary history of cognitive rhetoric from its scholarly dominance to the socially-oriented theories of writing that worked to replace them. Ultimately, I hope to demonstrate how the conversations that surrounded cognitive rhetoric could, if viewed through a Latourian empirical lens, be productively revitalized for contemporary research—specifically, research focused on attention a composition relation.
Composition and First Empiricism

As Gerald Graff observes in *Professing Literature* (1989), the tensions between scientific and humanistic ways of knowing in English departments can be traced to the beginnings of the American university as a research institution. As the German research model was incorporated into American liberal arts colleges, English departments across the country adopted philological research agendas. Also a German import, philology came to replace a generalist approach to the study of languages and literature present in many American colleges. Paraphrasing Arthur Applebee, Graff notes that during this time in nineteenth-century English education, the appreciation and value-oriented curriculum of the generalists gave way to investigation and fact-oriented work of the philologists (55). The methodology and rigor of philology provided a scholarly agenda that was on par with the research agendas of other departments in the new university for language and literature departments. Speaking at the first meeting of the Modern Language Association, H.C.G. Brandt, professor of German at Hamilton College, argued for the necessity of this agenda: “teachers of modern language … do not realize, that their department is a science … our department is a science, and that its teaching must be carried on accordingly … a scientific basis dignifies our profession” (qtd in Graff 68).

Along these lines, in “Science, Theory, and Politics of Empirical Studies in the English Department” (1994), David Shumway argues that the conflict between this empirical legacy in English studies on one end, and a focus on “humane aesthetics and moral values” on the other, is the central productive tension in English departments historically. Shumway notes that literary criticism and theory in the twentieth-century was largely engaged with saving literature from the scrutinizing gaze of scientistic...
inquiry. Further, the “new” literary theories of English departments—by which Shumway expressly means the poststructuralist and critical theories of Jacques Derrida, Michel Foucault, Louis Althusser, and Theodor Adorno—are even more hostile to science than are the New Critical approaches they came to replace. Given this history, Shumway notes, “it is not surprising that people in English departments should feel threatened by another encroachment of science on their territory: empirical studies in composition and rhetoric” (149). Empirical studies that were, by the early 1960’s, an explicit research agenda for the National Council of Teachers of English.

The NCTE report, *Research into Written Composition* (1963), assembled by Richard Braddock, Richard Lloyd-Jones, and Lowell Schoer, represents an early attempt to develop a methodology and objective criteria for the teaching of writing and it is often cited as the beginning of composition studies. As Braddock et al. argue, research into the teaching of composition, complex though it may be (especially when it deals with the “larger elements” of composition, not merely with grammar and mechanics), has not frequently been conducted with the knowledge and care that one associates with the physical sciences. Today’s research in composition, taken as a whole, may be compared to chemical research as it emerged from the period of alchemy: some terms are being defined usefully, a number of procedures are being refined, but the field as a whole is laced with dreams, prejudices, and makeshift operations. (5)

To counter these, the report argues for greater objectivity in writing instruction through “frequency counts” and controlled experimentation. Frequency counts that could be used
to tally not only the grammatical and mechanical errors writing instructors were used to marking, but also predefined sets of rhetorical errors as well. Despite the apparent difficulties, the Braddock report argues that any gains toward objectivity in writing instruction must include the rhetorical considerations of writing. In this way, for the report’s writers, frequency counts present a way to demythologize writing instruction and provide objective criteria towards an assessment of rhetoric. The Braddock report urges composition studies towards the “strength and depth” that could only come to the field through an empirical research agenda (6). Though, with the perspective of half a century, it is obvious that the report did not so much present a way out of the “dreams, prejudices, and makeshift operations” of composition, but presented writing researchers with a new dream: composition studies as a scientific inquiry.

Towards this, Stephen North argues that the Braddock report fated research in composition to performing a series of “constitutive rituals” in which knowledge does not so much accumulate and progress, as simply work to repeatedly re-invent the field itself. For North, composition studies itself was thus founded on a unreachable myth of “Paradigm Hope” that keeps composition scholars hoping to find something verifiably true or provable about the writing process and, when inevitably unfound, settles on utility and plausibility instead (“Death” 205). Invoking the notion of paradigms here, North reminds us of Thomas Kuhn’s tremendous influence on composition studies beginning decades after the Braddock report. As Robert Connors suggests, the influence of Kuhn’s *The Structure of Scientific Revolutions*, published a year before the Braddock report in 1962, could be taken as an alternative to the trajectory of “imitation science” initiated by the NCTE report.
Writing in a moment when cognitive process theories had gained dominance in the field, Connors’s “Composition Studies and Science” (1983) offers a Kuhnian analysis of scientific research in composition studies. Connors notes that Kuhn’s paradigm theory opposes positivist approaches to science as it presents a rhetorically-based model of scientific progress through paradigmatic structures. Summarizing Kuhn, Connors observes “paradigms are essentially incommensurable—one cannot be measured against another empirically—science proceeds not by better theories driving out poorer ones, but rather by a series of loyalty-decisions on the parts of members of a scientific community” (2). Rather than progressing through a linear accumulation of data through time, Kuhn argued that science progresses through the incommensurable shifts in dominant models. Reviewing composition studies, Connors is alarmed by the increasing reliance on unproblematized scientific modes of research in cognitive process theories of writing and, following Kuhn, the unnuanced understanding of scientific progress held by many in the field. For Connors, research into the composing process in this way confuses the modes appropriate to the physical sciences with those of the human sciences. Experimentation in the former is reliant upon isolation, testing, and manipulation of discrete phenomenon by formal systems of measurement—processes that are notoriously difficult to transfer to a study of writing or cognition as “the complexity and interdependence of mental processes … make such disembedding of discrete phenomenon difficult and tend to make experimental conclusions in psychology isolated and sterile” (12). Even protocol analysis, the most widely used tool to analyze the writing process by cognitive rhetoric, is doomed to be “noncumulative semi-scientific experimentation and semi-rigorous description” for Connors (13).
In this way, Connors argues that the desire for validity that science seemingly brings is the wrong approach for composition studies. According to Connors, “We are not a science and will not be one in the foreseeable future, and we must beware lest our understandable desire to share in the cachet of science lead us to a barren enactment of imitation science” (19). While not against empirical inquiries into the composition process altogether,\(^2\) Connors is against the “role-playing of scientism” and “process-governed ameaning” that too often comes under the guise of science as it attempts to define the writing process (20). While Connors’s critique here is certainly valid, and eventually became the dominant attitude towards empiricism by the end of the decade, I would like to question just how “barren” the field’s enactment of science actually was. If measured by how generative such studies were for the field, the empirical inquiries of cognitive rhetoric would certainly be some of the most productive examples of research in the discipline’s history. Even more so if we were to include to many exchanges and debates spurred on when empirical methodologies collided with the emergence of socially and contextually-based theories of writing.

Towards this end, writing within the context of professional and technical writing, Davida Charney’s “Empiricism Is Not a Four-Letter Word” (1996) argues that there is too often an easy conflation between the methodologies and the ideologies of research agendas when, in reality, those relationships are much more complex. According to Charney, it is as ridiculous to assume that scholars working in qualitative analysis or

\(^2\) In fact, towards the end of the article, Connors champions the behaviorist approaches of Robert Zoellner’s Talk-Write pedagogy. For Connors, “Behavior modification in various forms promises to be the central useful component in all future composition research that has any functional effectiveness” (16).
ethnography are necessarily self-reflective and committed to social justice as it is to assume that those working in more scientifically rigid forms are opposed to liberatory or postmodernist values (568). Towards this, Charney argues, “[r]ather than endorsing or condemning methods a priori by ideological purity, we should consider how they affect our ability to work with each other to conduct the very best research we can” (568-569). Charney works to complicate many of the critiques leveled at cognitive rhetoric discussed below by complicating the science/social divide by providing examples of scientific progress as a social and discursive community of peers—working together, self-critically, towards meaningful data. The elision of such complexities, according to Charney, have created an “over-reliance on qualitative studies and repeated disparagement of objective methods” which have resulted in a “serious imbalance in studies of technical and professional writing—and the same may be true in composition studies as a whole” (590).

Writing in a moment when socially-oriented epistemologies and ideological critique were arguably at an apex in composition studies, Charney’s work demonstrates how—in little more than a decade—those working to map out taxonomies of the field had intensified divisions that possibly hindered more than they helped. For Charney, much of what lay ahead for writing studies consisted of the “hard task of inter-connecting our work, by building up provisional confidence in our methods and our knowledge base by challenging and impressing each other” (591). A similar article by Charney appearing in Technical Communication Quarterly shortly after this piece, details how this inter-connective work has historically been the case in composition studies. In fact, in “From Logocentrism to Ethocentrism: Historicizing Critiques of Writing Research” (1998),
Charney observes that “many treated the social and cognitive aspects of writing as interrelated” despite the charge that cognitive process theories of writing too often ignored the social factors of writing in favor of a naïve instrumentality (25). The interconnection of the field discussed by Charney is, I would argue, the result of the field’s notion of process at the time being both new and large enough to contain many otherwise contentious voices. As long as scholars were identified as pro-process, particular epistemological differences could be overlooked.

In “Composition at the Turn of the Twenty-First Century” (2005), Richard Fulkerson reminds us that the vast legacy of “process” and process-based pedagogies in the field owe more to cognitive process theories than the “individualistic advocacy” of Donald Murray and Ken Macrorie’s work despite our current tendency to think otherwise (669). Fulkerson’s observation is, I argue, indicative of more than just a willingness to overlook cognitive rhetoric with regards to process, but a general move away from cognitive research by composition scholars following the “social turn” in the humanities. The current lack of interest in cognitive science in the field makes it easy to gloss over the work of Linda Flower, John Hayes, and a host of others who sustained a discussion of cognition and the writing process during a defining moment in composition’s history. Joseph Harris’s *The Teaching Subject: Composition since 1966* (1997) reminds us of this, noting that Linda Flower was the most cited scholar in *College Composition and Communication* from 1980 to 1993—having double the number of citations as the next most cited scholar (129). Today, on the other hand, those working in cognitive process theory throughout the late ’70’s and into the ’80’s are more likely to be cited by historiographers or scholars critiquing positivist orientations rather than evidence of an
active research agenda. Looking to the work of James Berlin can give us an indication of the divisions enabled by the social turn and what happened to effectively end the conversation between composition studies and cognitive science.

In his most active decade, Berlin produced four complete taxonomies of the field including the associated research agendas, related epistemologies, and pedagogical practices of his classifications. Berlin’s oeuvre is invaluable not only because it oriented compositionists in the field, but because—perhaps counter-intuitively—by dividing the field it worked to solidify it as a recognizable set of practices and agendas. Similarly, at the same time, Stephen North’s *The Making of Knowledge in Composition* (1987) worked in much the same way. Here, I am particularly interested in two of Berlin’s taxonomies: the first appearing in *Rhetoric and Reality: Writing Instruction in American Colleges 1900-1985* (1987) and a second set published the following year in “Rhetoric and Ideology in the Writing Class” (1988).

In the former, Berlin champions cognitive rhetoric, grouping it alongside the classically oriented rhetoric of Ed Corbett and the epistemic rhetoric of Robert L. Scott, Richard Ohmann, and Kenneth Bruffee. Arguing that cognitive rhetoric, because it remains focused on the social context of problem-solving, deserves to be considered transactional. Towards this, Berlin notes:

> Although the rhetoric of cognitive psychology focuses on the psychology of the individual, it is indeed a transactional approach. While the mind is made up of structures that develop naturally, it is necessary for the individual to have the right experience at the right moment in order for this development to take place. Without these experiences, or with the
wrong sequence of experiences, cognitive structures do not properly mature. Thus, the individual’s environment can play as important a role as the inherent makeup of the mind. (159)

Recognizing the inherent interrelatedness of individual cognition and the rhetorical contexts which frame it, Berlin makes an argument for cognitive rhetoric’s inclusion with other socially oriented trends in the discipline. Gesturing towards work by Ede and Lunsford, Frank D’Angelo, Barry Kroll, and Joseph Williams, Berlin continued to argue that cognitive approaches are expansive enough to allow “a place for the social in shaping knowledge and learning” and that our notion of process more generally has been most influenced by these approaches (187). This earlier consideration of cognitive rhetoric stands in stark opposition to Berlin’s next taxonomy—published the following year—as it argues against cognitive approaches for a myriad of reasons.

In “Rhetoric and Ideology in the Writing Class” Berlin revises his view of the field and his consideration of cognitive process theory by arguing that such theories rely too heavily on the role of the individual in knowledge production, are objectivist in their approach, and, ultimately, work to serve the same Fordist agenda as current-traditional rhetoric. In fact, in this later piece, Berlin notes that cognitive rhetoric “might be considered the heir apparent of current-traditional rhetoric” as both aim to streamline writing processes into a manageable, efficient, and ultimately, commodifiable product (480). Stemming from objectivist epistemologies, Berlin argued, both current-traditional and cognitive approaches refuse to engage ethical and political questions as they insist that scientific realism is beyond the purview of ideology. As Berlin argues, “[c]ognitive rhetoric, then, in its refusal of the ideological question leaves itself open to association
with the reification of technocratic science characteristic of late capitalism” (484). Despite previous critiques, Berlin’s interpretation of cognitive rhetoric as complicit in the exploitative agenda of late capital effectively ended the discussion. It would be hard to imagine a more thorough critical evisceration of cognitive rhetoric than the one that appears in Berlin’s later work. As hard as Berlin’s critique was, it was not the first in this direction.

Six years prior, Patricia Bizzell’s “Cognition, Convention, and Certainty: What we Need to Know about Writing” (1982) argued that the “inner-directed” approach of Flower and Hayes too easily elided the role of the social in composing processes. For Bizzell, by seeking the universal form of the writing process, Flower and Hayes neglected the role of content—that which gives shape and works to guide form. Bizzell’s “outer-directed” approach, on the other hand, argues that “universal, fundamental structures can’t be taught; thinking and language use can never occur free of a social context that conditions them” (390). As a consequence, according to Bizzell, compositionists looking towards scientific research into the writing process were misled. For Bizzell, just as for Connors, science sought a kind of “authoritative certainty” that is simply not available given the situatedness of knowledge production and the complexity of composing. However, there have been other, arguably more nuanced, interpretations of cognitive process theory.

In the piece by Shumway discussed earlier, he notes that Linda Flower’s work gestures towards the possibility of an empirical research disengaged from a positivist orientation. A form that could, in fact, can be understood as a “particular form of argumentation” (154). Though Shumway stops short of saying that Flower’s work does
this, rather her work “fails to say why empirical arguments might be useful or persuasive and instead relies on the traditional claim of greater access to the real” (154). Shumway’s argument is supported in Flower and Hayes’s own work beginning with “Identifying the Organization of Writing Process,” the opening chapter in the *Cognitive Processes in Writing* (1980) collection. This collection, put together and released by Carnegie-Mellon University following an interdisciplinary symposium of the same name, helped to both solidify cognitive rhetoric as a research agenda and identify Carnegie-Mellon as its hub. Similarly, the symposium and following collection, established Linda Flower and John Hayes as the leading purveyors of this particular method of composition research. Together, Flower and Hayes have two pieces in the collection, and take up nearly a third of the total page count.

In the opening chapter, Flower and Hayes remove the study of writing from the classroom, a traditionally privileged site for the study of writing, and move it to the laboratory. Because, for Flower and Hayes, writing was to be accessed through protocol analysis—a “far too laborious a procedure to be used routinely in the classroom either for teaching or for evaluation” (27)—it must be studied in the laboratory. The move from the classroom to the laboratory is significant for a number of reasons. As Charney notes, such a move begins the study of writing with “unnatural tasks, unnatural settings, and intrusive procedures” and must therefore lack objectivity and only provide researchers with incomplete data (“From Logocentricism” 17).

Because the study of writing through protocol analysis must take place in a laboratory, it becomes an example of the highly staged artifice that Bruno Latour relates to a particular aesthetic of first empiricism. In a lecture entitled “The Aesthetics of
Matters of Concern,” Latour analyzes a photograph by Jeff Wall. In the photograph, scientific illustrator, Adrian Walker, sits contemplatively before a mummified arm. The viewer can see that Walker is employed in sketching the arm from the easily visible sketchpad on his lap and the pencil in his hand. The title of the photograph, *Adrian Walker, Artist, Drawing From a Specimen in a Laboratory in the Dept. of Anatomy at the University of British Columbia, Vancouver* (1992) leaves little to the imagination with regards to the actual content of the photo. For Latour the photograph, with its gleaming white tile background that the prominently figure of Walker, is indicative of laboratory life itself and is meant to represent the “white light of the Enlightenment” which “floods over the skills of the draughtsman in one of the rare remaining disciplines, namely anatomy, where drawing remains superior in scientific precision to photographs” (30). For Latour, what is important here is not the particular content of this one photograph, nor its relation to one particular set of scientific discipline and practice, but that is illustrative of the whole host of objectivity-making practices employed in the aesthetics of matters of fact. For Latour, “there is nothing more amazingly artificial, more carefully staged, more historically coded than meeting a matter of fact face to face” (32). Knowing this, one cannot help but revisit the elaborate protocol transcriptions, detailed models, and abstracted figures running through the work of Flower and Hayes. In this light, cognitive process theory itself becomes a highly constructed theatre expressing the aesthetics of first empiricism. In a sense, the visual representations in Flower and Hayes’s work are attempts to render the three-dimensional reality of student writing into two-dimensional representations. This reductionist aesthetic is, for Latour, a process that does not get us closer to the real, but only works to be demonstrate the constructedness of facts and the
elision of complexity.

One way to distinguish first empirical *matters of fact* from second empirical *matters of concern* is that, in the latter, there is an ethical obligation to not forgo that complexity, but rather to include it, reproduce it, expand on it, and distribute it to other networks. In this way, matters of concern reflect the complexity of lived relations. To do so is to be amongst Latour’s metaphorical rapids, denying the totalizing vision structuring the nature/culture divide. Such work, I argue, has precedence in both composition studies and cognitive process theories of composition. In fact, I would argue that, beginning with Marilyn Cooper’s landmark “The Ecology of Writing” (1986) there has been a way to think through the complexities of cognition and writing that is inherently taken up with writing as a *matter of concern*.

**Composition and Second Empiricism**

In *Writing Inventions: Identities, Technologies, Pedagogies* (2001) Scott DeWitt characterizes the history of composition’s relationship with “invention, inquiry, and exploration” after the turn of the century as *either* stemming from the cognitive processes of the individual writer *or* writing as a social act (46). Indeed, this was the polarized intellectual climate after the social turn that Flower addresses in “Cognition, Context, and Theory Building” (1989). Here, Flower questions whether we, as compositionists, can reconcile our urge to nurture individual voice and meaning-making through writing while simultaneously arguing that meaning and voice *begin* in social and ideological arenas. Observing a trend in the discipline to further entrench scholars in their respective camps, Flower works towards an “integrated theoretical vision” able to encompass both the
social and individual cognitive domains. Critiquing her own early work with John Hayes, Flower notes that cognitive process theory, like most work in the field at the time, was too focused on interior processes of the individual writer. But rather than take the opposite approach, into “speculative theories based only on abstract social or political imperatives” (283), Flower calls for a complex interactive theory which would work from the nexus of individual cognition and social context through observation-based theory building. Theory building in this way would be guided by three principles:

One principle is that cultural and social context can provide direct cues to cognition. The second is that context is also and always mediated by the cognition of the individual writer. And the third is that the bounded purposes that emerge from this process are highly constrained but at the same time meaningful, rhetorical acts. (287)

The interplay between these actors—cognition, context, and rhetoric—must be sought in what Flower calls “real acts of writing,” where individual cognitive acts meet with social forces under the constraints of rhetorical situations (294). This focus demands, for Flower, the articulation of a type of research agenda that is both self-aware enough to know its epistemological limitations and certain enough to continue with the project of knowledge production despite such limitations. From this impetus, Flower works towards defining an empirical research of observation-based theory building. Commenting on this approach, Raúl Sánchez argues that the methodological implications of Flower’s later work on observation-based theory building essentially frees empiricism from its “ontological baggage” and allows its rhetoricity to come to the fore (Function of Theory 14). While never citing him directly, many of Flower’s later articulations of composition
research parallel Bruno Latour’s work towards matters of concern in the context of a second empiricism.

In “Visualization and Cognition: Thinking with Eyes and Hands” (1986) for instance, Latour argues that material and mental factors at play in scientific inquiry are intimately bound up with one another in the inscription—the written inscription and the images generated in knowledge production; or, as he phrases it, “the transformation of rats and chemicals into paper” (3). Despite the variance of laboratories—the discipline, the size, the number of instruments, etc.—the end result was always the same: “a small window through which one could read a very few signs from a rather poor repertoire (diagrams, blots, bands, columns)” (3). By paying attention to the practice of inscribing that issued from these centers of calculation, Latour argues, we can see how science is able to maintain a certain stability. In this way, the writing, printing, and propagation of texts is not a scientific aside—a residual manifestation of the “real” knowledge work of the lab—but rather central to the stability of the enterprise itself. The work of the lab, for Latour, is the development of immutable mobiles—inscriptions that can be circulated and rhetorically mobilized, and therefore must necessarily be “immutable, presentable, readable, and combinable with one another” with a minimum of loss (7). While such inscriptions are beneficial towards making science a stable enterprise, this stability comes at the cost of difference and complexity of the object under scientific scrutiny. Using an example from Foucault’s work in The Birth of the Clinic, Latour notes,

The same medical mind will generate totally different knowledge if applied to the bellies, fevers, throats and skins of a few successive patients, or if applied to well-kept records of hundred of written bellies,
fevers, throats and skins all coded in the same way and all synoptically present. Medicine does not become scientific in the mind, or in the eye of its practitioners, but in the application of old eyes and of old minds to new fact sheets inside new institutions, the hospital (15). Thus, in the move from small-scale practice to large-scale institution, the complexity of the individual situation—in this case illness—is reduced through inscription, codification, and a whole cascade of representations that allow “harder facts to be produced at greater cost” (17). This critique could easily be leveled against the early work of Flower and Hayes in their development of an identifiable model of the writing process that could be inscribed and transferred to other writing situations. Further, many of the post-process critiques are grounded in similar injunctions that the insistence on process—and process as an identifiably recurring and universal process—foregoes far too much complexity of actual writing processes. While this is true of Flower’s early work with Hayes, her later work emphasizes the situatedness of knowledge in observation-based theories that can only ever be provisional renderings and are never meant to represent the complexity of the whole. Looking towards Donna Haraway’s argument for a feminist objectivity, Flower asks:

The problem is: how do you construct a usable, not an innocent, doctrine of objectivity that allows ‘the possibility of sustained, rational, objective enquiry’ without pulling the ‘god trick’ of promising a totalizing vision and claiming it has the disinterested power to produce one? (“Observation-Based Theory Building” 168)

The key lies, for Flower, in the telling shift of emphasis from the “truth” of scientific
realism to the pragmatics of utility—it is a similar shift, I would argue, in Latour’s movement from *matters of fact* to *matters of concern*.

In both “Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern” (2004) and *Reassembling the Social: An Introduction to Actor-Network-Theory* (2005), Bruno Latour articulates an alternative to the exhaustion of critique—by shifting from the *debunking* and *demythologizing* apparatus of critique to the pragmatics of concern. As Latour observes, the critique of science did not go far enough into the ontology of *facts*, for, if they had, they would have discovered that facts are nothing more or less than “very polemical, very political renderings of matters of concern” (‘Critique’ 32). Just as matters of fact were the objective in the paradigms of first empiricism, matters of concern become the goal of a second empiricism. For Latour, the shift complicates the natural/social divide in productive ways as it offers new possibilities to the exhaustion of social constructivism while not returning to the positivist epistemologies of first empiricism. For Latour, second empiricism differs from its first iteration in that “its science, its politics, its esthetics, its morality are all different from the past,” and while it remains “real and objective” it is “livelier, more talkative, active, pluralistic, and more mediated than the other” (*Reassembling* 115). Whereas both the scientific mode of first empiricism and the social-constructivist critique of science seemingly progressed through *critical engagement*, second empiricism progresses through *composition*. As discussed earlier in this chapter, Latour’s articulation of *compositionism* in “An Attempt at a ‘Compositionist Manifesto’” has many implications for the future of composition studies through a second empirical trajectory. Such a trajectory arguably began in Marilyn Cooper’s articulation of ecologies of writing and
continued through Margaret Syverson’s mapping of cognition in distributed models of composition.

Implicitly critiquing the work of Flower and Hayes as limited in their scope, Marilyn Cooper begins “The Ecology of Writing” by stating that now is the time for some “assessment of the benefits and limitations of writing as essentially—and simply—a cognitive process” (364). Further, Cooper articulates the problem with cognitive process theories of writing as having, nothing to do with its specifics: it describes something of what writers do and goes some way toward explaining how writers, texts, and readers are related. But the belief on which it is based—that writing is thinking and, thus, essentially a cognitive process—obscures many aspects of writing we have come to see as not peripheral. (365)

Articulating this peripheral, the neglected strata of systems affecting the act of writing, is, for Cooper, the recognition of the ways any composition is both emerging from and engaging in ecologies. Cooper is quick to point out that ecology in this sense, is significantly different from context—or, more precisely, social context—in that the former includes a broader and more dynamic sense of temporality. Just as environmental ecologies as conventionally understood may change over long swaths of time—as new species are introduced and other species may die out—so too do the ecologies producing and affecting particular compositions account for more than simply the moment of inscription or the limited social context from which it emerges (368). Ultimately, for Cooper, an ecological broadening in this way adds to emerging social theories of writing and works to move writing studies away from the centrality of individual cognition
towards the student-writer as an actor enmeshed in dynamic networked systems. As Cooper states towards the end of the article, “[writing] is not simply a way of thinking but more fundamentally a way of acting” (373). I would argue that Cooper’s work here is prescient in that it both anticipated the movement away from strictly cognitive theories of writing associated with Flower and Hayes and that it made possible a renewed engagement with cognitive science a decade later—with the work of Margaret Syverson. Cooper’s work anticipates the work of Edwin Hutchins towards ecological models of cognition that recognize the role of systems distributed through material, social, and technological sites enabling any individual cognitive act. Through Cooper’s early work we can see the necessity of reexamining cognitive process theory of writing in order to account for the complexity of student writing and thinking. Both the work of Margaret Syverson, discussed below, and the later work of Marilyn Cooper perform just this kind of skeptical gesture towards conventional scientific understandings of cognition.

In her most recent work Cooper continues to question the distinctions among the social, technological, and individual. In “Being Linked to the Matrix: Biology, Technology, and Writing,” included in Stuart Selber’s edited collection Rhetorics and Technologies: New Directions in Writing and Communication (2010), Cooper works towards a more fully realized version of the ecology of writing in that she defines writing to a particular kind of action, that is, it is a response. As Cooper notes, “writing is not a matter of autonomously intended action on the world, but more like monitoring, nudging, adapting, adjusting—in short, responding to the world” (16). An important, yet easily overlooked, element here is Cooper’s displacement of intention in relation to response. For Cooper, writing as response is as much about the material body affecting a response
to a world of other material bodies as it is about a deliberative response fashioned by and for rationally thinking subjects: “writing is as much a biological as it is a cultural practice … not the product of minds somehow separate from bodies nor of innate technical or linguistic abilities” (18). In this essay Cooper provides a sense of what a study of attention’s composition could look like as she analyzes professional writer Steven Johnson’s use of DEVONthink, an indexing software, and a group of composition students working to document the Paulding light, a well-known mysterious phenomenon in the Upper Peninsula region of Michigan.

Like many information management packages, DEVONthink stores and manages information. Unlike many packages, DEVONthink learns to make associations between commonly used words and files tailored to each individual user. For Cooper, the software’s ability to make associations while Johnson prepares a book manuscript—no doubt affecting the composition in a myriad of ways—is indicative of the ways that technological and social systems work in accord to enable one particular composed response—that of Johnson’s manuscript. Cooper reads one such association emerging from DEVONthink’s algorithms while it worked with Johnson on a piece about the London sewer systems. The association, a connection between the searched terms “sewage” and “waste” affected the composition by producing a particular connection between waste and calcium waste deposits in vertebrate bone matter during evolutionary processes—a connection Johnson admits he would not have paid attention to on his own. For Johnson, and for Cooper’s analysis, this example is indicative of potential collaborations between silicon and carbon-based intelligences. Similarly, it is indicative of how human attention is directed by algorithmic processes in productive ways.
In the latter example, students used GPS units and cell phones to deduce that the Paulding light mystery is actually the result of headlights from a distant highway being reflected off the atmosphere. For Cooper, such prosthetic technologies are simply ready-at-hand for contemporary students in their general day-to-day comportment; a technologically enhanced bearing in the world helping to make it knowable (19). Cooper argues that from these two examples, she can make three points concerning composition as a response: first, that words and tools are experienced together as “part of our bodies and brains”; second, that writing is not simply social, it is a interaction with beings and objects in our surround that we “habitually misconceive as autonomous planned action”; and, third, that writing is best understood as a “complex system organized by dense interactions of writers and their worlds” (20). From these three points, Cooper uses writing as a way to argue that cultural and biological evolution is always a co-evolution taking place with technologies, language, and the environment. Thus, the human attention, emerging from individual psychic cognition, can be seen as a co-production between technologies of composition—as is the case with Johnson’s DEVONthink package—and orientation—as is the case of Cooper’s student’s using GPS devices to research the Paulding lights.

Given Cooper’s work here, an argument can be made regarding a return to a more inclusive version of cognitive rhetorics that can account for the co-productive dynamics involved in attention. Just as Johnson attended to a particular connection suggested by his software, and students making a documentary were able to attend to the distances of highways when investigating mysterious lights, we can see how accounting for attention is hardly capable of being contained within an individual’s biological nervous system
without first making the concession that the individual body—including, of course, the nervous system—is thoroughly ran through and permeated by a continual involvement with external systems affecting and shaping any individual biological body. Further, given this, we can see that even the most conventional understandings of rhetoric as a discursive and linguistic practice are caught up and enmeshed in systems that are thoroughly non-discursive, material, and nonhuman. Cooper’s article that appeared the following year in *College Composition and Communication* works from these ideas to reimagine what rhetoric, rhetorical subjectivity, and agency might mean given the complexity of the above.

In “Rhetorical Agency as Emergent and Enacted” (2011), Cooper begins by observing how the question of agency has been problematic in the humanities for some time. While many scholars argue that the question is no longer even valid—as the notion of a “centered, conscious, rational self” (420) has been problematized to the point of no return at the hands of postmodernists and poststructuralists—Cooper is interested in revitalizing question of agency. For her part, Cooper sees the necessity for a rescue and resuscitation mission for the subject by redefining the subject as an “emergent property of embodied individuals” (421). Similar to her previous piece, Cooper works to complicate what it means for the subject to have conscious intentions and free will. As Cooper notes:

> Agents do reflect on their actions consciously; they do have conscious intentions and goals and plans; but their agency does not arise from conscious mental acts, though consciousness does play a role. Agency instead is based in individuals’ lived knowledge that their actions are their own. (421)
As such, agency emerges from a self-consciousness of lived experience. It follows that rhetorical possibility emerges from a feedback loop between conscious reflection and previous experience in a world. Coupled with her work on writing as response, here Cooper gestures towards rhetorical agency as a responsibility that rhetors have towards their audience in the making of a common world (442). Rhetoric, in this manner, is a kind of posthuman ethics as it removes the overly reductive role of personal responsibility in the ethical equation. Such a reductive definition of ethics is problematized by Cooper’s notion of agency as distributed response-ability:

neither conscious intention nor free will … is involved in acting or bringing about change: though the world changes in response to individual action, agents are very often not aware of their intentions, they do not directly cause changes, and the choices they make are not free from influence from their inheritance, past experiences, or their surround. (421)

Rhetorical agency, for Cooper, is not reducible to the individual human rhetor, but is dependent upon the distribution of technologies, the biological capacities of the individual, and the material occasions and environment for that agency to take place—in short, dynamic ecologies. In this way, Cooper is working to build on a distributed cognitive rhetoric in accord with the work of Margaret Syverson.

In their article “Distributed Cognition: Where the Cognitive and the Social Merge” (2003), philosophers Ronald Giere and Barton Moffatt argue that inquiries into the distributed modes of cognition question the boundaries between the collective social sphere and the sphere of individual cognition. Summarizing Edwin Hutchins’s landmark Cognition in the Wild (1995), Giere and Moffatt note that Hutchins discovered—through
an ethnographic study of the cognitive and social processes aboard a U.S. Naval ship—that cognitive systems include social rank, navigation technologies, and other material and social artifacts beyond the individual mind (3). Similarly, Syverson notes that, following Hutchins, we can see that cognitive processes in complex systems are “divided and shared among agents and structures in the environment” (7). For Syverson this has enormous import for composition studies as it challenges who—or what—we can identify that is doing the writing. Reminiscent of many critiques against cognitive rhetoric, Syverson argues that composition researchers have “[t]ended to focus their attention on the person inscribing the lines on the page, or on the nature or quality of the lines themselves, or on the activity of inscribing” and, as a result, “[o]ur theories of composing have been somewhat atomistic, focusing on individual writers, individual texts, isolated acts, processes, or artifacts” (8). For Syverson, however, writing—as well as thinking—occurs in complex ecologies that involve social, environmental, biological, and technological agents. While opening the cognitive process theories of writing to a greater complexity, distributed approaches present a challenge to research in composition.

In the conclusion to *The Wealth of Reality: An Ecology of Composition* (1999), Syverson argues that the greatest challenge an ecological approach presents is the notion that “the subjects of inquiry are not primarily objects or objectified subjects but relationships and dynamic processes” (186). Syverson notes that composition research after the social turn has aimed towards more collaborative and ethnographic writing research models, though such projects still view texts, writers, and readers as ontologically separate objects and not as the complex sets of relations offered in
distributive models. Following Hutchins’s lead, Syverson works towards researching distributed models of composition through three different case studies: first, from the point of view of the text within larger ecological models; second, how student-writers work in coordination with their peers and instructors in environments of learning; and, third, through the role of readers in the “complex adaptive system” of an online forum during the Persian Gulf War. Working through these three sites of composition, Syverson maps the distribution of cognition across five dimensions: physical, social, psychological, spatial, and temporal. For Syverson, these dimensions can be scaled up and down across registers from the individual, to local community, to global culture, and, finally, to genetic phenomenon of the species. Closer to the context of composition studies, this means that distributed cognition is able to discuss, for instance, an individual correction on a draft in terms of global literacy and cultural trends. Syverson’s work here, I would argue, rekindles the possibility of a cognitive process theory of composition not seen since the work of Linda Flower, both the collaborative work with Hayes and later socio-cognitive research. Following this trajectory began by Syverson, Kristie Fleckenstein’s “Reclaiming the Mind: Eco-Cognitive Research in Writing Studies” (2012), argues for an ecological model of cognitive rhetoric based on the work of Gregory Bateson.

Here, Fleckenstein makes a connection between the way both cognitive and computer science take up the “processing” of information. Tracing a history of cognitive psychology from the late 1950’s, Fleckenstein notes that information processing is the central concept to cognitive psychology as it “attends to the flow or sequence of mental operations in the performance of a cognitive task” (96). Adopted from computer science, specifically the study of artificial intelligence, cognitive psychology’s reliance on
information processing as the central analogy of how human minds process information is, for Fleckenstein, a fundamental error, and one that passes through to the rhetoric of Flower and Hayes’s work. I would argue, given Fulkerson’s reminder that composition studies itself owes its emphasis on process more to cognitive rhetoric than any other source, that this reduction of complexity is systemic to the discipline itself. Fleckenstein notes the similarities between the schematics of computer science as they represent the “sequential breakdown and organization of a computer program” and the diagrams developed by Flower and Hayes to represent the writing process (98)—a similarity that, Fleckenstein argues, is reflected in the way that Flower and Hayes approach writing as a problem to be solved by a central processor—the student writer—rather than the complex and radically distributed ecology that it is. Fleckenstein’s approach turns to Gregory Bateson’s ecological model of mind that reconfigures the individualist orientation of cognitive rhetoric and yields an eco-cognitive model. While not cited, Fleckenstein’s model owes much to both Marilyn Cooper’s work on the ecology of writing (1986) and Margaret Syverson’s work on distributed cognition and the writing process (1999). Together with Syverson, Fleckenstein’s eco-cognitive model moves us towards an empirical research agenda relying on relations among actors rather than the inaccessible interior cognition of the student-writer. Thus, Syverson and Fleckenstein gesture towards a second empirical trajectory for composition research.

**From Cognitive Rhetoric to Attention Ecologies**

Collin Gifford Brooke’s work on digital ecologies provides insight into how models of distributed cognition and composition may be applied to explicitly digital
environments and digital reading. In *Lingua Fracta: Toward a Rhetoric of New Media* (2007), Brooke argues that the advent of new media necessitates a rethinking of the classical rhetorical canon. For Brooke, the rhetorical affordances of digital media demand a “revitalized understanding of the canons” that can both inform and respond to the contemporary milieu. The digital interface establishes a novel element in the rhetorical situation and one that, according to Brooke, establishes rhetoric as an *ecology of practice* focusing on the “strategies and practices that occur at the level of interface” (28).

Informed by both Cooper and Syverson, Brooke’s rearticulation of the rhetorical canon as an ecology of practice provides a productive frame to think about the ways in which cognition and attention are directed in digital environments. The challenge is, for Brooke, to discuss particular rhetorical categories that are both stable enough to distinguish sets of practices, and supple enough to “preserve the dynamic flexibility of an ecological model” (42). Towards this end, Brooke observes how ecologies of practice could be useful model for describing distributed attention:

> When we have paid particular attention to one or more canons, it has often been to render it more static. Consider, for example, the various strategies advanced under the umbrella of invention, like freewriting, outlining, mapping, tagmemics, and so on. Although part of viewing invention ecologically must include this repertoire of pedagogical strategies, the emphasis on conscious, visible activity is necessarily a reduction of the canon. An ecological model of invention would treat it as the level of generalized activity. (44)

Here, Brooke notes a double movement that defines the relationship between attention
and salience. First, that attention paid to something creates salience. As Richard Vatz famously argued in “The Myth of the Rhetorical Situation” (1973), rhetoric generates the salience of situations, it does not simply reflect it. Second, salience works to make previously dynamic processes static. Brooke, using the example of invention, notes how pedagogical attention towards the ecological practice of invention works to render it to a static set of particular practices. Here Brooke identifies a feedback dynamic between attention and salience that reduces complexity. Keeping with the above example, there is nothing intrinsically inventive about any one practice—freewriting, for example—but invention frames the practice in salient ways. Brooke uses two examples of his own composing practices to further demonstrate what he means. In the first, Brooke observes that following his attending an academic conferences he is temporarily more prolific than he would otherwise be. While there is nothing inherently inventive about the conference itself, it enacts ecologies of practice that affect Brooke’s productivity. Practices that not only make possible connections between dozens of conference presentations, but also about the tradition of humanistic inquiry that trains scholars to respond in particular ways. Similarly, Brooke notes that keeping a weblog has affected his daily comportment towards generating material for the blog. As Brooke notes, the practice of keeping a blog made a “much larger portion of my daily life … available to me as subjects for writing” (44). What needs to be foregrounded here is the diligence needed to not make the ontological mistake of confusing the individual practice with the ecology of practices it enacts.

For my purposes, Brooke’s reconceptualization of the rhetorical canon as ecologies of practice is incredibly useful. With this in mind, we can work towards making
visible the dynamics of attention as they become salient in discrete material practices. And, more importantly, resist making a simple equation between those practices and specific modes of attention. For instance, while the there is nothing inherently hyper or deep about specific medial practices, those practices can provide a useful salient frame from which attention’s distributed composition can be productively traced.

In “Tech-TOC: Complex Temporalities in Living and Technical Beings” (2012), Hayles discusses a “dynamic interplay” between attention and salience similar to ecological model identified in Brooke’s work:

attention is nevertheless a limited cognitive faculty whose boundaries are difficult to see because it is at the center of consciousness, whereas unconscious and nonconscious faculties remain partially occluded, despite being as (or more) important in interactions with technological environments. Human cognition as a whole (including attentive focus, unconscious perceptions, and nonconscious cognitions) is in dynamic interplay with the tools it helps to bring into being…

Here, Hayles observes how individual and collective attention works to make salient the technologies that, in turn, effect attentional capacities. This dynamic clearly demonstrates the error in simply locating attention in an individual’s cognitive capacities. Rather, attention is folds in on itself as it circulates through technologies, retentional media, individual cognition, and institutional culture. Bernard Stiegler, taking the concept from Gilbert Simondon, refers to this dynamic interplay as the processes of transindividuation necessary for both psychic maturity and cultural sustainability. Hayles works to differentiate between an individual’s focused attention and the larger ambient attentions
in the collective material environment. A change in the collective can result in a change, or mutation, in the individual’s abilities and capacities to be attentive. For Hayles, this is demonstrated in large medial shifts and their socio-cultural and psychic repercussions. Further, medial shifts—from orality to literacy, or from literacy to electracy, for instance—interrupt and mutate individual capacities of attention that, in turn, affects social institutions. Following this line of thought, we can see how Hayles can make an argument that the shift from print-based media to digital media resulted in a cognitive shift from deep to hyper attention that, in turn, necessitates a reformation of educational practices. Discussing this, Hayles notes that the mechanisms of attention “themselves mutate in response to environmental conditions” in such a way that when “dramatic and deep changes occur in the environment, attention begins to operate in new ways” (“Tech-TOC.”) For my purposes here, I would argue that a renewed interest defining a cognitive rhetoric in the contemporary milieu must work to theorize the cognitive and attentional mutations that occur when particular technologies and composing practices are removed or added. More practically, working to increase the metacognitive capacities of students to manage their own attention might be a productive frame to a cognitive rhetoric of digital composition.

I would argue that this work has already begun in Ben Gunsberg’s attempt to research and map student attentions in relation to digital objects. Gunsberg’s “Make it Now: QuickMuse and the Arrival of Fast-Track Composition” (2011) uses an online poetry website, QuickMuse, as an interface to map the relationship between student attention and temporality during the composing process. For Gunsberg, QuickMuse

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3 Due to its importance in digital rhetoric, I have used Gregory Ulmer’s notion of electracy rather than other articulations of connoting the shift from print to digital media.
presents a particularly productive interface for the mapping of attention as it both presents students with multiple streams of information typical of media fostering hyper attention and focuses on literate practices typically associated with deep attention. In this way, Gunsberg argues, QuickMuse contains elements of both hyper and deep modes of attention identified by Hayles. While Hayles discusses how the speed and variance of media affect attention, Gunsberg adds to this discussion of attention a temporal dimension that reframes the stakes. For Gunsberg, a “work’s configurations of temporality” comports attention towards either hyper or deep cognitive modes by “narrowing consciousness toward either end of the attention continuum.” Towards this end, Gunsberg notes three related temporal instantiations present on QuickMuse: the first, (re)articulation time, refers to versions over time of the website’s homepage design; the second, access time, relates to the navigational speed of site’s interface; and, finally, representational time, refers to the intentional and unintentional culturally significant representations of time integrated into site design. A change in QuickMuse’s homepage indicative of (re)articulation time demonstrates not only the speed and mutability with which digital objects can shift, but their concurrent effects on attention. Similarly, the speed which a site can be navigated with—often dependent upon the speed of the microprocessor in one’s machine—demonstrates both the temporal dimension of access time and how larger material and economic concerns inform decisions affecting (re)articulation time. Also demonstrated through the change of QuickMuse’s homepage, representational time, indicates the what Gunsberg calls the “temporal horizon” of design choice and the affective and associated relations users have with particular representations of time. Concerning the latter, for instance, QuickMuse makes use of
conventional representations of bookishness and literary high culture. For Gunsberg, these three articulations of time are meant to “illustrate some of the ways a work’s instantiations of attention are bound to different temporal qualities.” As a productive heuristic to map student attention, Gunsberg uses the three identified temporal characteristics.

To do this, Gunsberg suggests having students use screen-casting software to record their online interactions with a particular site’s interface. Students could then write reflective essays using the temporal heuristic above in order to “encourage students to think critically about cognitive style in relation to various academic, professional, and recreational pursuits.” Further, for Gunsberg, such “attention mapping” activities might cultivate awareness of the ways in which different activities (e.g., close reading, essay writing, gaming, surfing the Internet, and so on) call on different styles of attention. While these activities may not reverse the cultural drift toward hyper attention, they may provide students with concepts that help them regulate their attention in appropriate ways.

Coupled with Brooke’s *ecologies of practice*, Gunsberg’s heuristic for attention mapping could provide a productive frame for researching the relationship between the digital spaces used in composing practices and the cognitive style of student attention. Further, the ecological approach identified by Brooke highlights the importance of not confusing the individual composing practice with the conceptual apparatus the practice is meant to deploy. In other words, the practice of reading a Victorian novel, the media most associated with deep attention for Hayles, is not inherently deep. Similarly, playing the
latest iteration of *Grand Theft Auto* is not inherently hyper. Individual medial practices only become associated with particular cognitive styles when, by attending to that connection, the relationship is made salient. In such a way, I would argue, Brooke gives us a way out of the kind of technological determinism implicit in Hayles’s argument. Similarly, Brooke’s notion of the “persistence of cognition”—an associative effect of digital reading practices generating affective and memorial relations over time—could be a productive way to redefine *deep* attention within a digital milieu. As the affective dimensions of digital space are only now becoming a rich area of study for composition scholars, it is time that we can begin to discuss how we might conduct the kinds of tactically empirical research agendas hinted at in Gunsberg’s “attention mapping.” As I have argued, the work of Bruno Latour gives us a rich enough theoretical language and frame to articulate such complex relations.

**Conclusion**

In a keynote lecture for the annual meeting of the British Sociological Association in 2007, Latour worked to define second empiricism. There, Latour notes that rather than looking for the reality of object outside of social or cultural influence, as is the case with first empiricism, second empiricism looks towards its “relations, or connections, that is precisely those modes of connections, or modes of existence that are not depending on the divide, on the bifurcation, between, natural and social” (8). Such bifurcations were intensified in composition studies following the advent of the “social turn” as dominant models of cognitive process theory, arguably premised on scientific realism, ran up against social-constructivist theories of process. In short order, the disciplinary
conversation began to draw sides between empirical research or the socially constructed orientation of cultural studies and ideological critique. Second empiricism, on the other hand, would seek hybrid empirical models unwilling to force research to decide between invention and discovery, or, said differently, between discursive realities and natural fact. Rather than the modernist subject acting from autonomous will, the student-writer in second empirical models would be the always already constructed agent of a multiplicity of forces—discursive and otherwise. This orientation looks back towards the “commonsense materiality” of the writer to give an “identifiable object focal point for pedagogy” (Sánchez “Outside the Text” 235). With this in mind, compositionists can begin to attend to the “crisis of attention” as it has manifested itself in the popular imagination not as a matter of fact necessitating the need for scientific inquiry and intervention, but as a matter of concern as it has implications for the future of composition studies and education writ large.

For Latour, attention is at center of second empiricism and the progression of knowledge production in a contemporary milieu. As he observes in the second lecture making up What is Style of Matters of Concern, we are now charged with the responsibility of making visible the conduits for attention working in the production of objectivity (47). The science of first empiricism, for Latour, is a particularly focused kind of attention that must be drawn out and broadened to include the networks of ensembles responsible for the production of that style of attention. This is the shift from a matter of fact, to a matter of concern. As Latour observes: “A matter of concern is what happens to a matter of fact when you add to it its whole scenography, much like you would do by shifting your attention from the stage to the whole machinery of a theatre” (39). Such a
shift of attention exposes the an entirely different topology from those that would have us considering only the bifurcated choice between world or word, mind or material. Such a move, I would argue, has a precedent in composition studies through the work of Margaret Syverson who reveals the larger ensembles operating in any cognitive act. In moving the disciplinary object of composition from solely centered on the composition of alphabetic print and towards the composition of attention itself we broaden the scope of ensembles still further. In this way, we question along with Latour: “How many other things are accompanying, flowing with the flow, when we try to be attentive to new features of what is also given in experience?” (What is the Style 25). From this middle ground, we can begin to discuss the distribution of cognition and rhetorical agency in contemporary digital learning environments and address what N. Katherine Hayles and others have identified as the challenge of education in the twenty-first century: generational shifts in attentional capacities. Central to this challenge, and most in need of the kind of interdisciplinary Latourian intervention, is the relationship between digital technologies, human biology, and cognition that together constitute attention. Being examined together, the composition of new relations and novel topologies of attention become open to scholarly production.
CHAPTER 3

PLASTICITY AND THE NEURORHETORICS OF ATTENTION

Is this not the best possible definition of plasticity: the relation that an individual entertains with what, on the one hand, attaches him originally to himself, to his proper form, and with what, on the other hand, allows him to launch himself into the void of all identity, to abandon all rigid and fixed determination?

– Catherine Malabou, *What Should We Do with Our Brain?*

Rhetoric’s interest in neuroscience is cyclical. A recent special issue of *Rhetoric Society Quarterly* dedicated to articulating theories of neuro-rhetorics, and the very fact that such a portmanteau is now in circulation, is evidence that rhetorical scholars are once again turning to neurological research to redefine persuasion. This, of course, is nothing new. In “Of Brains and Rhetorics” (1990), Jeffrey Walker urged the field to pay closer attention to brain research as, “[n]o discourse theory, and no practice that wants to be informed by theory, can afford to ignore whatever might be known about the neural substrate of the processes involved in thought and writing” (301). As crucial, and in some ways evident, as Walker’s observation was, it went largely unheeded until very recently. Currently, the scholarly attention paid towards defining just what a “neurorhetoric” would entail and how rhetoricians might proceed with a *neurorhetorical* criticism has demonstrated that rhetoricians have taken up Walker’s call. This chapter aims to intervene into the scholarly discussion of neurorhetorics in three ways: first, by tracing *neurorhetorics* along three distinct conceptual lines, I argue that Jeffrey Pruchnic’s original articulation of a material neurorhetorics holds the most promise for meeting the
problematics of attention in the context of digital rhetoric; second, I argue that the insight of material neurorhetorics has a traceable history in rhetorical paideia through the central role of epimeletas—attending, or taking care; and, third, following the recent work of Catherine Malabou, I aim to demonstrate how a material neurorhetoric of plasticity might work to redefine attention as distributed phenomenon. Finally, I would like to inquire into the ethical stakes of the neurophysiology of attention particularly as it relates to education.

Three Neurorhetorics

Recent interest in the potentials of neurorhetorics, along with a broader “material turn” in the humanities shows that neuroscience—with a particular focus on the neurophysiology of the brain as object—has once again emerged as a significant area for rhetorical studies. In many ways, this attention to contemporary brain research mirrors trends in other disciplines—neuromarketing, neuropolitics, and neuroengineering—as new studies continue to provide insights into the physiology of motivation and persuasion. The implications of such research alarms many as it challenges notions of individual choice and free will. These recent studies have posed a “neuroscientific challenge” to agency as they investigate the brain activity of human choice prior to conscious awareness. Here, it would be helpful to get an overview of neurorhetorics—as it is employed in the field—and the differences that exist between these articulations.

In the article most responsible for the circulation of neurorhetorics as a concept and as a sub-field, “‘This is Your Brain on Rhetoric’: Research Directions for Neurorhetorics” (2010), rhetorical scholar, Jordynn Jack, and neuroscientist, L. Gregory
Appelbaum, argue that the term operates on two separate but related registers: a *rhetoric of neuroscience* and a *neuroscience of rhetoric*. The first register clearly evolves from the “rhetoric of science,” as defined by Alan Gross and others, and is here similarly defined as an “inquiry into the modes, effects, and implications of scientific discourses about the brain” that asks that rhetoricians “pay attention to how scientific appeals function in these debates” (412). The vast majority of neurorhetorical scholarship to date has taken this first approach. In fact, the remaining articles in the special issue work to articulate a neurorhetorics that can be closely aligned with rhetoric of science. While the second register noted by Jack and Appelbaum, *neuroscience of rhetoric*, is both more novel in its approach and a richer area of theoretical study. In combining issues of embodiment, non-human rhetorics, and affect theory, a neuroscience of rhetoric has enormous potentials to articulate a theoretical neurorhetorics in interesting ways. In many ways, as I will argue, this potential is demonstrated in the work of Jeffrey Pruchnic.

For Jack and Appelbaum, a *neuroscience of rhetoric* draws “new insights into language, persuasion, and communication from neuroscience research” (412). This approach would work to broaden rhetoric in order to include a varied spectrum of communicative and noncommunicative modes of persuasion. Such modes would entail a richer research agenda into the workings of autism, aphasia, “locked-in syndrome,” and other expressions of neurological difference. For Jack and Appelbaum, such a rhetoric asks “how communication occurs through different means, or how brain differences

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1 To be fair, I should recognize here that the conversations surrounding the “rhetoric of science” are a complex and complicated bundle of individual arguments, interests, and agendas rather than a unified discourse. As Alan Gross himself mentions in the introduction to *The Rhetoric of Science* (1990), such discussions are “an aggregate of individual interests rather than a united effort of a group of scholars with a set of common goals” (ix).
might influence communication,” and how contemporary research into the workings of
the brain might “add new insights to longstanding rhetorical issues, such as the
relationship between *pathos* and *logos*, or emotion and logic, or other cognitive
dimensions of rhetoric” (412). For Jack and Appelbaum, the key to the furthering for
research in either of these registers is strengthening the interdisciplinary conversation
between rhetoricians and neuroscientists in order for both to become acquainted with the
nuances of the other, an argument they actually perform in their jointly written piece.
Such an approach could rightly be called *dialogic* since neurorhetoric’s aim is for
rhetorical scholarship to employ and mine neurological research for productive insight—
and for neuroscience itself to mine the rhetorical tradition for insight into human
motivation, emotion, communication, and persuasion.

Similar to Jack and Appelbaum’s methodological approach to neurorhetorics—as
a rhetoric of neuroscience—Chris Mays and Julie Jung’s “Priming Terministic Inquiry:
Toward a Methodology of Neurorhetoric” (2012) intentionally situate neurorhetorics
“squarely within the rhetoric of science,” but unlike Jack and Appelbaum, Mays and Jung
do this *tactically* in order to create a space for a rhetorical preemption. For Mays and
Jung, there is a need to arrest unethical possibilities that neuroscience will be taken up
and used in the classroom in order to satisfy the discipline’s “pedagogical imperative.”
For Mays and Jung, this imperative would inevitably express itself through positivistic
orientations and neuroessentialism. For Mays and Jung, without a neurorhetorical
intervention, rhetoric and composition could potentially repeat the same epistemological
mistake arguably in with previous iterations of cognitive rhetoric. The motivations of
cognitive rhetoric is, for Mays and Jung, present the
correlative opposite of the exigency that informs neurorhetoric: namely, to resist the pedagogical imperative and the cognitive reductionism it can engender by identifying complexities with which writing teachers must contend before importing brain research into our pedagogies and classrooms. (43)

To their credit, Mays and Jung see the potential interest of neuroscience for rhetoricians, they just want to refuse its use in particular scripted ways and want to prevent it from “ending up anywhere” (42). Their methodology alluded to in the title opens a space for rhetoric to engage neuroscience in an inherently aporetic way. That is, in recognizing a neurorhetoric that is founded on rhetoric as epistemic, we can, first, foreclose the possibility of an epistemological certainty and, second, preclude the chance that such certainty will filter into writing instruction.

Both articles, however, rely on an essentially discursive definition of rhetoric that is always-already bound in language. A third articulation, the alternative I would argue is most productive to rhetorical studies currently, is to be found in Jeffrey Pruchnic’s original definition neurorhetorics that is closely aligned with both Gilbert Simondon’s notion of technogenesis and Bernard Stiegler’s work on tertiary retention. Whereas the later iterations of neurorhetorics were much more recognizably aligned with a rhetoric of science, Pruchnic’s original use of the term in “Neurorheotrics: Cybernetics, Psychotropics, and the Materiality of Persuasion” (2008), focuses on material networks—biological, technological, and cultural—in order to discuss the relationship between the brain and persuasion. Looking specifically in areas of cybernetics and psychotropics, Pruchnic works through a material neurorhetoric in order to question the internal
sovereignty of the contemporary human subject and the permeability of the boundaries among technology, neurology, and culture. More specifically, Pruchnic asks after the “complex and contemporary tangle of concerns over the relationship between experiential and neurochemical vectors that drives much recent work in both technoscience and critical theory” (169). Rather than language being the primary site through which a neurorhetoric can emerge, language is a site among others in relation; a rhetorical force neither primary or privileged, but one among many. To demonstrate this, Pruchnic begins with the tangled case of a suicide involving psychological disorder and the compulsive play of video games.

Shawn Woolley, a 21-year-old resident of Wisconsin who died in 2002, became a topic of discussion after his suicide sparked a debate in the popular media. Woolley’s death, Pruchnic argues, points towards how we might define the entanglement of neural, cultural, and technological networks that define a material neurorhetorics. Far from being the special cases of uniquely compelled individuals, such entanglements have always defined the general condition of the brain—to be is to be entangled in just these kinds of networks.

After his suicide, Woolley’s mother charged his hobby, playing the online role-playing game EverQuest, with both exacerbating his depression and directly leading to his suicide. Was it the case, as Woolley’s mother charged, that online video games could alter the chemical and physiological composition of an otherwise healthy brain so intensely as to cause a psychological disorder? EverQuest players are known for their compulsive playing of the game. A public Yahoo! Group, “EverQuest Widows,” or EQWids, boasts over seven thousand members and exists to provide support for the
“partners, family, and friends” lost to the immersive virtual world of EverQuest.

Providing links to On-Line Gamers Anonymous, a 12-step program designed to help players recover from their addictions, EQWids locates itself explicitly as an “Addiction and Recovery” forum. Pruchnic questions whether the simulated realities of video games, like EverQuest, influence neurophysiology and to what degree. Further, Pruchnic inquires into how such interaction online challenges conventional notions of an autonomous human subject just as it inspires a “technological ecstasy” that defines what Brian Rotman calls “becoming beside oneself” (168). According to Rotman, such ecstasy is the defining characteristic of our heavily mediated and digitally oriented milieu. Here, Rotman’s work is worth explicating a little further not only as its influence on Pruchnic’s version of neurorhetorics is sizable, but also because it points us towards redefining attention as a posthuman phenomenon.

In Becoming Beside Ourselves: The Alphabet, Ghosts, and the Distributed Human Being (2008), Brian Rotman argues that all media—from alphabetic writing to video games like EverQuest—alter, and ultimately configure, human neurology. In a discussion of the affect dimension of alphabetic writing on the configuration of the brain, Rotman notes:

‘Learning one’s alphabet,’ acquiring the ability to read and write alphabetic inscriptions, is an intense cognitive business requiring a permanent alteration of their brains that takes human children a protracted period of repetition and practice to accomplish. Neurologically, the requirements of literacy create in the brain what we might call a ‘literacy module,’ a neural complex within the neocortex dedicated to writing and
As such, writing acts as a “neocortical override” of the midbrain that suppresses and inhibits the production of another medium of communication—speech. For Rotman, the suppression found in the writing/speech binary naturally leads to and is indicative of other hierarchies present in the Western culture, specifically: cognition over affect, thought over feeling, and spirit over body. Writing, then, moves us away from the corporeal self—feeling, the physical body, and affect—and towards a disembodied cognition—an incorporeal self. In purely neurophysiological terms, such conceptual hierarchies are iterations of a material hierarchy taking place in the brain with the strengthening and growth of the neocortex to the detriment of the midbrain. Writing itself, as both a medium and a way of becoming, encourages and privileges certain parts of the brain. In the trajectory away from speech, with its dependence upon specific anatomical realities, there is a simultaneous movement away from all embodiment.

Simply put, for Rotman, to write is to become disembodied:

Once the alphabetic body is in place, once the neuronal pathways of literacy have been installed in the brains of its users and became automatic through the repeated alphabetic writing of speech and reading of lettered texts, that is, as soon as writing ‘invisiblizes’ itself as a medium, the stage is set for the coming into being of an entity—necessarily incorporeal—who is imaged to write ‘I.’ (31)

Writing is the beginning of the incorporeal and disembodied “I” that stands beside “us.” Interiority of the thinking subject would have been impossible, according to Rotman, without the advent of writing. Likewise, the advent of writing would be impossible
without the reticulated relationships between neurophysiology, technology, and cultural symbolicity.

Similarly, Pruchnic’s version of neurorhetorics calls for recognizing the kinds of reticulations present in rhetoric and neuroscience rather than simply calling for a specialized version of a rhetoric of science as others have recently done. For its part, rhetoric’s role in such networks is, for Pruchnic, the “creative manipulations of our abilities to respond” (197). Here I would like to turn towards recent discussions of rhetoric and the body in order to argue that Pruchnic’s definition has a long history in the rhetorical tradition. By thinking through this long tradition we will also come to the relationship between rhetoric and attention, attention and the body, and, finally, to a way to think of attention as nonhuman phenomenon. I would like to begin, surprisingly perhaps, with Isocrates and trace the role of attention in one of the earliest instances of formal education: rhetorical paideia.

An Embodied Neurorhetoric

In Bodily Arts: Rhetoric and Athletics in Ancient Greece (2005), Debra Hawhee observes deep connections between the pedagogical strategies of both athletics and rhetoric in classical antiquity. Emphasizing the materiality of persuasion in the rhetor’s own physiology, to train for Isocrates—whether as an athlete or rhetor—required just that, training. The development of capacities through sustained engagement and physical repetition, it was the conscious production of bodily habits based on movement. As Hawhee observes, the same term—epimeleias—is used for training in both the athletic and rhetorical milieus. That is, epimeleias, as a practice, would be familiar in both the
context of the gymnasium and the agora. Connoting careful, even painful, attention towards something—*epimeleias* was the term used by Isocrates to describe the intense physical practice of memorization his rhetorical education was premised on. Hundreds of phrases, passages, and anecdotes were to be committed to memory in order to develop the capacities for speech and put them to use in public life. Similarly, Aristotle’s own structure of rhetorical education stressed epimeleias, along with *spoudas* and *suntorias*—the attention, study, and exertion that—according to his *Rhetoric*—begin as pain, but become a pleasure through habit.

What I am concerned with here is: First, how *epimeleias*—as the central concept and condition for a rhetorical education—demonstrates how attention itself might be defined as the relationship between knowledge embodied in mnemonic technologies—alphabetic texts, audio recordings, film, digital modes of inscription, or any other spatialization of memory transforming it into a social object—and the trainable and mutable properties of the human biology—particularly the plastic properties of the brain; and, second, how we might then say that this relationship provides the conditions of possibility for the emergence of rhetorical agency. Further, I would argue that the diligent attention of *epimeleias* enacts a dynamic between what we attend to and the dynamic properties of the brain.

This dynamic has been the focus of intense discussion in conventional neuroscience since advancements in imaging technologies have made the material brain visible in novel ways. For instance, recent studies have observed greater brain volume in the hippocampus—a structure heavily involved in both memory and spatial navigation—of London taxi drivers who must memorize the many hundreds of streets and routes they
transverse daily. In studies conducted by cognitive neuroscientists, Eleanor Maguire and Katherine Woollett, London taxi drivers were used as useful models to explore the relationship between the environment and the structure of the hippocampus because of their daily navigational habits (“Acquiring” 2109). Discussing the larger ramifications of their study, Maguire and Woollett continue:

Direct evidence for hippocampal plasticity in response to environmental stimulation could allow us to understand the boundaries within which human memory operates and the scope for improving or rehabilitating memory in educational and clinical contexts. Moreover, given the dearth of longitudinal magnetic resonance imaging (MRI) structural association studies focusing on higher cognitive functions in average adults engaged in truly naturalistic behaviors, taxi drivers could contribute new information to the wider debate about whether key aspects of cognition are fixed or malleable. (2109)

Maguire and Woollett conclude the adult brain is indeed more malleable and plastic than previously considered. In fact, their study concludes, “there is a capacity for memory improvement and concomitant structural changes to occur in the human brain well into adulthood” (2112).

Similarly, braille readers are found to have structurally different brains than the sighted population—particularly in areas of the brain associated with finger sensitivity. In brain imaging studies exploring the spatial recognition capabilities of the blind, neuroscientist Amir Amedi, explores the extent to which neuroplastic properties aid the visually disabled to navigate their world. Defining neuroplasticity as, “the brain’s ability
to change its structure and function throughout the course of a lifetime” which is “visible across different levels of brain functioning which include genetic, neuronal, and synaptic, as well as the level of brain networks and the nervous system as a whole” (353).

Concerning the temporal dimension of neuroplasticity and its relation to frequent practice, Amedi continues, “plasticity is also manifested in the dynamics of emergent cognitive processes and overt behavior” (353). Amedi’s research explores the emergence of plastic properties in cases of sensory loss—when a sighted person becomes blind, or a hearing person loses the ability to hear, for example. Amedi concludes that such losses initiate “radical reorganization of the neural architecture” as the parts of the brain previously working towards that lost sense become reallocated over time (372).

While studies in human subjects are offer intriguing possibilities, neuroscientists have turned to the study of neuronal changes in mice to get attempt to capture neuroplasticity in action. In one such study, neuroscientists have been able to link the growth of dendritic spines—the kind of neuronal growth associated with learning—to task-specific environments. Investigating the neurophysiological changes in mice when introduced to new practices, the team introduced three sets of mice to three different practice scenarios: a first set trained only to reach under a piece of plexi-glass for a seed; a second set trained to reach for a seed and climb for a piece of pasta; and, finally, a third set that were introduced to multiple stimuli in the form of ladders, tubes, fences, etc., but not trained in any new way to get food. They discovered that the brains of the first group, the set practicing one task—that of reaching—changed the most. Tighter clusters of dendritic spines—and with larger ends that are associated with stronger synaptic firing—were more prevalent in the reach-only mice. Perhaps one of the most enlightening aspects
of the study was not that there was physical evidence of learning on a neuronal level, but
the speed at which those changes could be measured. In a period of four days, there were
marked differences. Unlike the tree in this slide adapting to its environment glacially—
becoming brick—it appears that brains—at least physiologically—are geared towards
rapid change when set to a single task. It appears that single-task learning re-structures
the brain for that task and idea which obviously has some evolutionary benefits—skills
that formerly required active attention could become more automatic, freeing up those
attention reserves to look for threats.

In many ways, this relationship between such objects of attention and the brain
preclude the possibility of the autonomous human subject in the same way that “we” both
are and are not our brains in profound ways. As Deleuze and Guattari observe in the
conclusion to What is Philosophy? (1991): “It is the brain that thinks and not man—the
latter being only a cerebral crystallization” (287). The notion that individual agency must
be founded upon an autonomous rational subject has, of course, been problematic for
some time. Yet, for many still, the possibility of rhetoric at all rests on an intact rhetorical
agent capable of choice. In Rhetoric of Motives (1950), for instance, Kenneth Burke notes
that persuasion necessarily involves “choice, will; [and] is directed to a man only insofar
as he is free…” as rhetoric becomes unnecessary when an actor “must do something”
(50). Elsewhere Burke gives the analogy, “Food, eaten and digested, is not rhetorical. But
in the meaning of food there is much rhetoric” (173). Keeping with Burke’s analogy, the
last decade of neuroscience research is making gains towards proving that the idea of a
liberal human subject—a volitional self—is the result of mechanistic neuronal processes
which individuals have perhaps less awareness of, or control over, than their own
processes of digestion. Collectively, such research has been dubbed the “neuroscientific challenge” to free will as it argues that—to quote Sam Harris, one of the more popular and vocal neuroscientists making such arguments—“all of our behavior can be traced to biological events in which we have no conscious knowledge” (103). Harris, at one point in his 2010 book *The Moral Landscape*, describes the mind/body relationship as a “phenomenological glockenspiel played by an unseen hand” (104). Harris’s argument of the phenomenological glockenspiel has been gaining credence since Benjamin Libet’s original investigations into the neuroscience of free will in the 1980’s.

Libet, one of the first neurologists to study consciousness by conducting experiments on live human subjects, used patients whose medical conditions already necessitated cortical implants. Libet’s first experiments delivered a small electric pulse deep within the brain. Libet found that patients were only aware of the pulses if they lasted longer than half a second, but experienced the pulse—once aware of it—as if they had felt it from the start. Inspired by these findings, Libet’s next set of experiments asked healthy subjects placed in front of a clock to push a button at any moment they had an urge to do so while making a note of the exact moment on the clock. Libet discovered that EEG monitoring subject brain wave activity could observe changes in the brain, again, a half second prior to the conscious decision to act. Libet’s experiments demonstrate that the brain, at least on a basic electro-chemical level, is in the processes of decision-making before conscious awareness of the decision. While half a second is enough to be scientifically significant in itself, Libet notes “The actual initiation of volition may have begun even earlier in a part of the brain we weren’t monitoring” (qtd. in Horgan 305). Twenty years later John-Dylan Haynes’s repeated similar experiments
using much more advanced equipment, functional magnetic resonance imaging (fMRI), which could monitor areas of the brain previously unstudied by Libet.

In 2007, Haynes’s team at the Bernstein Center for Computational Neuroscience in Berlin asked subjects to lie flat in an fMRI scanner while holding two buttons. At any time subjects could push either the left or right button at their discretion and were asked to remember when they became consciously aware of their decision. Haynes found that they could predict which button would be pushed in many cases seven full seconds prior to the actual event. According to Haynes, his experiments reveal that “there is a mechanism unfolding, a deterministic mechanism, that leads up to [an individual’s] decision at a later point in time that is inevitable and could only go one way” (“Neuroscience and Free Will”). For Haynes, conscious processes of decision-making—and, by extension, consciousness itself—is only the byproduct of neuronal activity; the exhaust of a biochemical engine which supplies the actual impetus of human motivation. While Haynes experiments may not have uncovered the “unseen hand” playing the phenomenological glockenspiel, we now had a clearer picture of how long it took to strike the keys.

Taking up Libet’s supposed challenge to free-will, Brian Massumi used Libet’s work to provide insight into the role of affect as a bodily rhetoric. In Parables for the Virtual (2002), Massumi provides a way in which we can begin to think about the pre-cognitive affective dimension as the underlying condition and pretext for conscious attention. Discussing the significance of experiments conducted by Libet, Massumi demonstrates how attention, decisions, and conscious choice are the secondary afterthoughts, so to speak, of affect. For Massumi, Libet’s missing half second is nothing
less than a gateway into the virtual, in which one can see the primacy of the body in an affective relation with its environment. Massumi observes,

In other words, the half second is missed not because it is empty, but because it is overfull, in excess of the actually-performed action and of its ascribed meaning. Will and consciousness are subtractive. They are limitative, derived functions that reduce a complexity too rich to be functionally expressed. (29)

For Massumi, the present moment always passes too quickly to be perceived and experienced consciously. We, at least to the extent we can be identified with our conscious minds, experience the world behind the body. Libet’s experiments demonstrate that that the present is taking place virtually though we experience it in “real time.” Libet’s missing half second is, for Massumi, a virtual half second that occurs within an altogether different set of temporal constraints. Concerning this, in *A Counter-History of Composition* (2007), Byron Hawk notes that the virtual is “like bullet time in *The Matrix* … [in which] viewers see the trajectory, the movement of the bullet, slowed down, intensified, so they can get a sense of that movement, which is a primary form of reality beyond static points of visual perception” (118). It is this “primary” form of reality—the affective space of the virtual—that is inhabited by and accessible to the body.

Importantly, the “static points” that are accessible to consciousness are made static by their affective pull and come to be objects of attention. In this sense, to perceive visually necessarily occurs within what Massumi identifies as an “economy of attention and distraction” (139) as the complexity of experience must be narrowed to that which is comprehensible to consciousness, much like the range of visible light is only the portion
of the entire electromagnetic spectrum that is available to our ocular perception. Like Hawk’s “bullet time” example demonstrates, this is economy of attention is largely a question of speed—of slowing things down, and speeding them up, to observe what becomes available to us with each successive change. Simply put, what we can attend to depends on our speed. Here I would like to question whether it is possible to effectively change our speed, to “shift gears” perhaps, and, if so, does this fall within the domain of the plastic properties of the brain as recently discussed by Catherine Malabou and others?

**Plasticity and Attention**

When interviewed by Bill Moyers, Patricia Smith Churchland noted that the basic assumption of the interdisciplinary discussion between neuroscience and philosophy—a generally called neurophilosophy—is that the brain holds the key to the epistemological and ontological questions philosophy has been engaging since the beginning. As Churchland remarked in the interview, “I am assuming that if we do understand the brain, we will understand the nature of knowledge, learning, memory and so on” (“Neurophilosophy”). For Churchland and many other philosophers in the analytic tradition, neuroscience is a way to solve the mind-body problem. A continental perspective of neuroscience, however, coming most forcibly from Catherine Malabou, demonstrates that the brain’s plastic properties work to foreclose such epistemological totalities. Rather, for Malabou, contemporary neuroscience of plasticity presents ways to reimagine subjectivity.

In the conclusion to *What Should We Do With Our Brain?* (2008), Malabou argues that “neuroscientific discourse in general exposes itself to ideological risk and
offers nothing new to mankind, while plasticity, far from producing a mirror image of the world, is the form of another possible world” (80). The implications of Malabou’s argument here for a neurorhetoric of attention is twofold. First, we can see that what counts as knowledge in neuroscience, like any other discipline, is grounded in an episteme of the particular era and, in this Foucauldian sense, always gives the world back to itself. Second, plasticity does not hold the potential for novelty and invention, but is rather is the ground for invention itself. In this way, Malabou uses plasticity as a way in which to navigate the trajectories of tradition and innovation and articulate what John Muckelbauer has recently called “the problem of change.”

One of the essential features of plasticity that interests Malabou is that it is both malleable and resistant simultaneously, that is, plastic is simultaneously open to change, resistant to change, and unable to return to its previous form once changed. Plasticity then is not simply the overcoming of one form for another, but is also not static. More to the point, during a larger discussion of plasticity and the question of change, Malabou notes that,

> Changing therefore amounts to finding a mode of torsion, reversion, metamorphosis, or migration that matches the impossibility of fleeing and the injunction to look at what looks at us. It is a kind of flight in situ, if you like … To modify oneself is to change without fleeing, running, or waiting. (Plasticity 42)

In this way, perhaps plasticity can offer us a way to engage the problem of change and the challenge to “invent a practical style of engagement that doesn’t just repeat the structure of negation and refusal” (Muckelbauer 12). For Malabou, it is precisely this

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stationary movement that the concept of plasticity offers.

In The Principles of Psychology (1890) William James notes, “[o]rganic matter, especially nervous tissue, seems endowed with a very extraordinary degree of plasticity” (105). In the two decades, there has been significant progress with regards to just how plastic nervous tissue actually is. One of the contemporary leaders in researching neuroplasticity, Salk Institute geneticist and adult brain researcher, Fred H. Gage, notes that the idea of plasticity challenges the entire notion of identity and neural stability that so much contemporary scientific thought rests on. In a recent article, “Structural Plasticity of the Adult Brain” (2004), Gage notes that neuronal plasticity calls into question our ability to remember details of our experience from one moment to the next and the experiential unity of our subjective experience. Discussing the frequent comparison of the brain to that of a computer, a comparison that will be pertinent during later discussions of posthumanism and cognition, Gage notes that,

One of the main reasons for viewing the brain as a stable machine or computer is because this analogy helps explain how we can remember from one instant to the next. If the underlying structure was changing all the time, how could we do that? For that matter, if the brain is the seat of consciousness, as proposed by Francis Crick, how would we maintain a self identity if the brain were not stable? (136)

Gage here refers to Crick’s later work, specifically The Astonishing Hypothesis: The Scientific Search for the Soul (1994), in which Crick argues for a materialist

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3 It is important to note here that Gage’s research led to the discovery that adult neuronal regeneration, or neurogenesis, does occur. Gage’s discovery that ran counter to the conventional neurology of the time.
understanding of consciousness. Neuroplasticity does not discount such a materialist understanding, of course, but what it does do is complicate and untether such understandings from the strictly deterministic outlook that continues to be a pervasive force in genetics and biological circles. In other words, we continue to imagine the brain as a “series of fixed, indeed genetically programmed, entities, without any suppleness, without any improvisational ability” (*What Should We Do* 4). The problem with such a mechanistic view of the brain, for Malabou, is alienation. Neurodeterminism works to create a phenomenological feedback loop of alienation as the unknowable material brain determines future possibility. Malabou’s own comments on the computer metaphor of the brain may be helpful here, as such

unsetting metaphors in the register of command and government: a controller that sends orders down from on high, a central telephone exchange, a computer … all of this cybernetic frigidity which only serves to alienate us from consciousness (*What Should We Do* 5).

Malabou goes so far as to say that through plasticity, we are “living at the hour of neuronal liberation” (8). If nothing else, Malabou’s enthusiasm is indicative of the sausive force behind ideas of neuroplasticity as questions of agency are revitalized and given a new wholly material life. ⁴ Neuroplasticity, at least conceptually, resists the deterministic foreclosures of an increasingly vocal element in conventional science.

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⁴ While she will complicate such notions later, the introduction to *What Should We Do with Our Brain?* is fairly, and uncharacteristically, explicit in connecting neuroplasticity with a certain kind of agency. At one point she argues, “The difference between brain and psychism is shrinking considerably, and we do not know it. ‘We’ end up coinciding completely with ‘our brain’—because our brain is us, the intimate form of a ‘proto-self,’ a sort of organic personality—and we do not know it. Humans make their own brain, but they do not know they are doing so” (8).
The problem with contemporary research into consciousness and cognition lies in the neglect of the ideological and political influences into such processes and phenomenon. For Malabou, the neuronal self,\(^5\) is just as much a construction of such social forces as it is a biological construction of cells and electrochemical processes. Malabou argues that such neglect is not the fault of accident, but is built into the very value structure of the sciences and it works to support an idea for the naturalization of capitalism in a supposed pre-determined world. In fact, misreadings of the implications of neuroplasticity have worked towards this as well. Malabou notes that plasticity is almost always misread as “flexibility,” in that new research demonstrates that our brains are malleable enough to adapt to the contingencies of our environment. For Malabou, this flexibility works to satisfy the demands of hypercapitalism and the increasing need for “flexible” labor. Concerning this, Malabou suggests an exploration of the explosive properties of plastic:

Not to replicate the caricature of the world: this is what we should do with our brains. To refuse to be flexible individuals who combine a permanent control of the self with a capacity to self-modify at the whim of fluxes, transfers, and exchanges, for fear of explosion. To cancel the fluxes, to lower our self-controlling guard, to accept exploding from time to time: this is what we should do with our brain …To ask “What should we do with our brain?” is above all to visualize the possibility of saying no to an afflicting economic, political, and mediatic culture that celebrates only the triumph of flexibility, blessing obedient individuals who have no greater

merit than that of knowing how to bow their heads with a smile. (What Should 78-79)

According to Malabou, the reductive equation of plasticity with flexibility is indicative of how neuroscientific research can be employed in the service of what she calls neuronal ideology, that is, constructing views of how our brains are organized and, by extension, how we come to think about the world around us. Flexibility neglects the idea of resistance central to plasticity, as plastic is that which both receives form and gives form. Similarly, flexibility also neglects the explosive orientations of plasticity. Towards the end of What Should We Do with Our Brain?, Malabou offers an explication of the political implications of plasticity. The formation of what she calls a “biological alter-globalism” that results from the cultivation of rage “against a certain culture of docility, of amenity, of the effacement of all conflict even as we live in a state of permanent war” (79). Malabou is quick to remind us of the connection between the concept of plasticity and plastic explosives and that not all explosions are acts of terror. For Malabou, the plastic brain provides an image of an alternative to global capitalism and, as a nod to Jacques Derrida, a “world to come” (82). Just as Derrida theorized the necessity of democratic political systems oriented towards futurity—a democracy “to come”—Malabou argues for a plastic “world to come.”

This third characteristic of plasticity, taken from plastic explosives, is the most politically charged element in Malabou’s model. Conceptually, plastic has the ability to receive, give, and erase form simultaneously. Plasticity’s political agenda is to provide subjects a way in which a “biological alter-globalism” can be rendered from
contemporary global capitalism. This variance on the social structures of global capital is not so much an alternative as it is a deformation of the same. Malabou’s challenge to what she calls “neuronal ideology” is designed to deform how her audience relates to their brains, and the supposed plasticity of this organ. As alluded to above, what we have now is a consciousness of flexibility, and what we need to develop, Malabou argues, is a consciousness of plasticity. To this point, Malabou notes that a more appropriate and exact title of the book that was published as What Should We Do With our Brain? would be: “What should we do so that consciousness of the brain does not purely and simply coincide with the spirit of capitalism?” (What Should 12). But to discuss the development of a political consciousness is a very different thing than a discussion of neuronal activity and the strictly material biology of the brain. In some sense, such neuronal activity has to be “translated” or transformed into what we generally understand as conscious awareness. For Malabou, nothing has been put forth by contemporary neuroscience to account for what she characterizes here as a becoming. Despite scant answers, such questions remain central for Malabou’s project. Concerning these, she asks, “We do not truly know what originally makes these transitions possible: Are they biologically programmed? Are they the fruit of experience or of individual history? Are they the result of both?” (What Should 64).

While we may not fully know how electrochemical processes in the brain translate into mental phenomenon, part of Malabou’s overall project and her attraction to plasticity as a concept is that, however malleable, ultimately it seems to give form. In a recent work, Plasticity at the Dusk of Writing (2009), Malabou proposes a “philosophical change of perspective that focuses on closure as its principal object” (82). Closure,
without rigidity, is plasticity’s promise. In many ways Malabou holds to the notion of a unified subject, or the desire of a unified human subject, even if that subject is now a brain with plastic properties. For Malabou, the condition of being a human being is to be a “brain that changes itself” (82). In this way, she separates herself from many contemporary thinkers that see the brain organized as a series of neural networks that are ultimately open-ended and indicative of the larger networked and distributed assemblages in a plural mental/physical assemblage. It is here that Malabou seems most connected to what could be a neuroscientifically informed phenomenology. Malabou’s “object of closure,” however, when thought against the conceptual framework of autopoiesis in biological theory takes on a much different connotation.

Ideas of autopoiesis and cognition in the work of Chilean biologists Humberto Maturana and Francisco Varela is, I would argue, the most fruitful area to discuss cognition and consciousness as it relates to Malabou’s concept of plasticity and the relationship between brain and mind. Maturana and Varela’s “Santiago Theory of Cognition” states that, "Living systems are cognitive systems, and living as a process is a process of cognition” (Autopoiesis 13) which is the same for organisms with and without a central nervous system. In this way we can see that all living systems—down to cellular level and beyond— are involved in the process of cognition which works against the privilege surrounding the human and it the supposed unique properties of the human brain. Simultaneously, cognition in Maturana and Verla’s sense suggests rhetorical

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6 It is helpful to remember that Malabou traces her use of plasticity back to Hegel. In a recent interview, she notes that “I found [plasticity] for the first time in Hegel. He uses it when he defines subjectivity in the preface to the Phenomenology of Spirit. The subject is not supple and soft, and it is not rigid either; it is something in between. The subject is ‘plastic.’” See: interview with Noelle Vahanian in the Journal for Cultural and Religious Theory, 2008.
possibilities for the articulation of a plasticity not as a singular characteristic of the highly
developed neomammalian brain, but as a general characteristic of life. In such a way the
relationship between cognition and plasticity runs into many contemporary arguments
taking up the idea of posthumanism.

What I want to stress in casting Malabou’s philosophical “object” of closure
against many threads running in posthuman thought is Malabou’s ultimate emphasis on
plasticity’s ability to maintain form as a type of closure and how this can be related to
Maturana and Varela’s work with autopoiesis, but while this may help us think of how
cognition creates what Maturana calls “linguistic domains” in which autopoietic systems
can use to “reduce environmental complexity and interface with the world” (qtd. in Wolfe
xx), this also works to complicate the “problem of change” as cognitive loops can account
for invention as they seem to replicate the selfsame. Helpful in this regard is Cary
Wolfe’s principle of “openness from closure” discussed in What is Posthumanism?
(2010) and elsewhere. As Wolfe states, “the very thing that separates us from the world
connects us to the world, and self-referential, autopoietic closure, far from indicating a
kind of solipsistic neo-Kantian idealism, actually is generative of openness to the
environment” (xxi).

Openness and closure, tradition and innovation, difference and repetition, as they
are articulated in the “problem of change” appear to be more closely related that we could
have imagined. They are, in Malabou’s idiom, plastic. At least on a neuronal level,
“openness from closure” is the general operation which is always impacted by the
communicative domains of the environment, and in fact, are indicative of how such
domains are always—and above all else—rhetorical. As Malabou observes:
The ‘plasticity’ of the brain refers to the capacity of synapses to modify their transmission effectiveness. Synapses are not in fact frozen; to this degree, they are not mere transmitters of nerve information but, in a certain sense, they have the power to form or reform information. This type of plasticity makes it possible to forward the hypothesis of neuronal circuits that are able to self-organize, that is, to modify their connections during the activity required by perception or learning. (Plasticity 59)

In this way, one can say that to perceive is to be persuaded. The rhetoricity of perception, on a cellular level, forms and reforms our perceiving material brain. What it means to “learn” then, and the function of education, takes on a material significance not usually argued for and role of the body itself becomes much more mysterious as it becomes virtual.

Katherine Hayles’s first tenet of posthumanism in How We Became Posthuman (1999), states that the posthuman view “privileges informational pattern over material instantiation, so that embodiment in a biological substrate is seen as an accident of history rather than an inevitability of life” (2). Plasticity, in Malabou’s sense, blurs the lines between information and materiality in such a way that to be embodied biologically is to be virtual. Hayles’s tenet here echoes much of the work which fell under the general heading of posthumanism a decade ago most of which theorized and lauded the posthuman as a way to think not only outside of the liberal humanist subjectivities, but outside of the body as well. Alan France’s “Historicizing Posthumanism” (2001) begins with this idea as he notes that the promise of the posthuman “enables us to imagine what it might be like if experience were no longer contained in the biological vessels we now
inhabit” and an eventual “escape from the limits of corporeality” (175).

Neuroplastic properties, when looked at from the an autopoetic orientation, demonstrates that the boundaries of the corporeal human is permeated through and through by the environment. Such permeations are, according to theories of symbiogenesis, how organisms progress. In many respects symbiogenesis takes the already blurred boundaries between organisms a step further as the line between what is considered living and non-living becomes even more skewed. An early theorist of symbiogenesis, Russian botanist Boris Kozo-Polyansky writing just after the turn of last century, considered organisms to be a “consortia” resulting from an “accumulation of homogeneous elements and their development along different directions, depending on their function” which form a “composite organism, characterized by a new form and a more complex structure” (110). From the view of symbiogenesis, the human body is neither unified or human, but rather an ecology of various organisms in symbiotic and parasitic relationships. Symbiogenesis is one way to think of the body as a distributed assemblage along biological lines. It is also one way to think of the brain, as Deleuze and Guattarti mention in the third chapter of A Thousand Plateaus: Capitalism and Schizophrenia (1980), a “population, a set of tribes” (64). Quite another way to articulate both the body and the mind as an accumulated consortia is to think of medial relationships in larger ecologies, particularly our increasingly dependent relationships with technologies. As Brian Rotman notes in Becoming Beside Ourselves,

There is however ultimately no separation between interior and exterior: inner experiential ‘I’ and outer collective ‘they’ fold into each other. All thought, even the most private and enclosed, is from outside itself, socially
existing, being publically mobilized, using and being used by the media and technological apparatuses that surround us, constitutes our psyches—a phenomenon whose articulation demands an ecology of the self and psychic agency that foregrounds the contemporary technologies of the virtual (103).

Here Rotman points towards ways in which our experience of consciousness, our individual cogito, is a mutual experience with our larger environment that cuts across temporal and spatial gaps. Just as current research into neuroplasticity discussed in Malabou’s work demonstrates that the brain is in a state of constant flux of reaction, resistance, and adaptation to our environment, so too is the mind. For me, the tracking of such change and fluctuations is inherently within the domain of rhetoric. Rhetoric, it could be argued, is the development of a way in which to account for such changes and the creation of taxonomies of flux.

Rotman, along with Malabou, also points towards possible avenues that could be taken in neurorhetorics. Rather than a continuation of a “rhetoric of science” only now applied specifically to neuroscience, a neurorhetorics as such could also be employed to the rhetorical affects of—and just as importantly—the appreciation of the “compositional dimension of body-brain-culture relays” (Connolly xii). Such relays and registers at once material, virtual, and conceptual are always rhetorical. Political theorist, William E. Connolly’s Neuropolitics: Thinking, Culture, Speed (2002) concerning the intersections between neuroscience and political culture is a precursor to how neurohetoric could proceed. According to Connolly, neuropolitics provides a way to talk about a “politics through which cultural life mixes into the composition of body/brain processes” (xii).
Similar work done within the field of rhetoric, most notably by Jeffrey Pruchnic whose work examines the “materiality of persuasion” through psychoactive drugs, technology, and neuroscience. What can contemporary theories of neuroplasticity, symbiogenesis, and our relationships with technology, promise for discussions of ancient rhetorical education and the civic life of ancient Greece? Here I would like to return to Isocratean rhetoric in order to offer a “plastic reading”\(^7\) of Isocratean rhetorical *paideia*.

**Plasticity and Paideia**

Rhetorical education for Isocrates was a training in plasticity. Much like the etymology of plastic—from the Greek *plassein*, which means to mold, model, or form—Isocratean rhetorical pedagogy was designed to allow students to be attentive and receptive to the audience in any rhetorical situation, and to have the ability to apprehend the *kairotic* moment in which to act. In such a way, Isocrates designed his *paideia* as a means of training participants in civic culture to make the right decisions, and to take the right actions to serve the public good. The emphasis here on the social would be impossible without a training of the individual to become proficient in self-deliberative, *phronetic* processes which result in a kind of plasticity in relation to the social, but also to the rhetor’s self. As Leslie Paul Thiele observes in an extended investigation into ancient rhetorical practices and contemporary neuroscience, “moral judgment is not a process of deriving imperatives for action from abstract propositions ... it arises through the internalization of social values and the immediate perception of their violations” (71). As Malabou’s work often takes the form of an extended discussion of a major figure (Hegel, Freud, Derrida) that she describes and alludes to as “plastic readings.” Her notion of plastic readings is important for rhetoric in its own right, particularly as it relates to Muckelbauer’s notion of “productive reading.”
a result of his unique pedagogy, Isocrates has been historically positioned in a liminal space between philosophy and rhetoric, but belonging fully to neither. Even in Plato’s *Phaedrus*, Socrates mentions Isocrates’s noble character who even “nature has placed the love of wisdom in his mind” (279A). At the time of Plato’s writing, Isocrates’s school in Athens was better known that Plato’s own *Academy* and its pedagogical practices were also quite different. Isocrates founded his rhetorical *paideia* on the mutual relationship between *kairos* and *phronesis* (Sipiora 8). Citizens with *phronesis*, as a pragmatic ethics, and the ability to apprehend *kairos* as the “opportune moment,” make for good speakers, and ultimately, a good polis.

Isocratean rhetorical *paideia* was arguably more concerned with teaching philosophy than a system of rhetoric because of this emphasis on the self-deliberative and an attunement to *phronesis*. Not only did Isocrates aim to teach students the ability to make good speeches—and therefore have the persuasive abilities to align an audience with your position—but also meant generating a particular kind of plastic subjectivity that could be attuned to wisdom. Thus, the rhetorical success in Isocratean *paideia* is much more polyvalent and nuanced than at first appears to the modern reader as it takes into account both external and internal practices. As Isocrates states in the *Antidosis*:

> With this faculty we both contend against others on matters which are open to dispute and seek light for ourselves on things which are unknown; for the same arguments which we use in persuading others when we speak in public, we employ also when we deliberate in our own thoughts; and, while we call eloquent those who are able to speak before a crowd, we regard as sage those who most skillfully debate their problems in their
own minds. *(Readings in Classical Rhetoric* 48)

The distinction Isocrates makes here between one that is eloquent and one that is a sage is important, as it is not only indicative of the two primary aims of a rhetorical education, persuasive speech and wisdom, but also how those two aims are inherently related and learned.

The same faculty for speaking well which allows the student to persuade an audience also allows the student to deliberate matters internally and vice-versa. The distinction between relating to an audience and relating to your “self” then is one of degree rather than kind. On a neuronal level, it would seem that the same mechanisms are placed in motion whether one is attempting to persuade an audience publically or reciting a speech from a handbook in private.\(^8\) There is a correlation between Isocratean *mimetic* practices and how the brain functions as it forms and reforms itself resulting from the rhetorical situations it apprehends itself in. According to Haskins, Isocrates viewed "performance (mimesis) as a source of civic education" (7) and designed a rhetorical *paideia* which affirmed the “the cultural sources and performative nature of political identity” (14). One can read such a system of education dependent on kinds of rhetorical templates in terms of neural development, as, according to Malabou, “cerebral morphogenesis results not in the establishment of a rigid and definitively stable structure, but in the formation of what we might call a *template* [which] is then refined (sculpted) during development and, in a subtler but always powerful way, throughout life” (*What

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\(^{8}\) It has been successfully argued from both sides as to whether or not Isocrates taught using a kind of handbook. It is clear that Isocrates’ rhetorical pedagogy did not hold to a prescriptive method, but there is evidence that an anthology of speeches or a collection of the types of oratory was used. Terry Papillion’s “Isocrates’ *Technē* and Rhetorical Pedagogy” (1995) does an excellent job of exploring the various sides of this debate.
Contemporary research in neuroscience is only in the last ten years discovering just how the brain regenerates cells. Gage looks towards a future in which we will not only be able to target such growth and development using specific drugs, but also via targeted activities which will work at “activating specific brain areas to accept and integrate the new cells” (140). Such research points the way in which, to quote Daniel Smith’s review of Thiele’s work mentioned above, “The neurological self is a constant yet dynamic dimension of who we are and what we can do” (243). Facilitating and forming the plastic abilities of the brain to enact a social good was the aim of Isocrates’ rhetorical paideia and through his particular education one can see the intersections of the civic, neurological, and rhetorical.

**Plastic Futures**

In 2006, a team of German researchers affiliated with the University of Regensburg examined the brains of thirty-eight medical students before, during, and after a grueling three month long period of intense study leading up to their preliminary medical exam—the Physikum. Using a variety of scanning and imaging techniques, the researchers found that there was a significant increase in gray matter in the parietal cortex, an area towards the rear of the brain which is involved in calculations, visuospatial relations, and memory (Blakemore and Frith 60). The researchers concluded that neurogenesis, the generation of neurons from stem cells, and neuroplasticity increased during this period of “acute study” and “cognitive stimulation” leading up to the exam (Draganski et al. 6317). Specifically, the researchers concluded their study by
noting:

It is reasonable to assume that plasticity is a characteristic of the nervous system that evolved for coping with changes in the environment.

Understanding changes in brain structure as a result of learning and adaptation is pivotal in understanding the characteristic flexibility of our brain to adapt. (6317)

Such studies are beginning to fuel an entire speculation industry surrounding neuroplasticity and its implications for how we think about the world and ourselves.

Books such as Sharon Begley’s 2007 bestseller, *Train Your Mind, Change Your Brain: How a New Science Reveals Our Extraordinary Potential to Transform Ourselves*, with its cover that touts the work as a “groundbreaking collaboration between neuroscience and Buddhism” and even has a forward written by the Dalai Lama, and Norman Doidge’s *The Brain that Changes Itself*—“The power of positive thinking finally gains scientific credibility!”—are indications that we are at the beginning of neuroplastic boom regardless of how sound the science may be. The public wants to believe in neuroplasticity for obvious reasons, it grants us a belief in the power and possibility of change. If even adult brains are capable of neurogenesis, and periods of learning as short as three months can demonstrate neuronal growth, then one can only guess at where the limits may be. In this way, due to its sausive force, neuroplasticity has value for rhetorical scholarship despite whether or not it will prove to be just another booth in the quasi-scientific self-help marketplace. Though, to echo Jordynn Jack’s warning, rhetorical scholarship of neuroscience must be aware of falling into an “uncritical fetishization of the brain as a scientific object divorced from its historical and rhetorical context” (409).
One way to do is through Catherine Malabou’s conceptual work involving neuroplasticity which aims to both sketch an “ideological critique of the fundamental concepts of the neurosciences,” and at the same time one that resists the “tired alternative between reductionism and antireductionism” (What Should 82). For Malabou, grasping the ethico-political dimensions of neuroplasticity allows us to rhetorically mobilize it for affirming alternative futures. As Malabou notes, “I have tried to position us at the heart of this [plastic] challenge, while inviting readers to do what they undoubtedly have never done: construct and entertain a relation with their brain as the image of a world to come” (82). As such, Malabou’s work offers a productive resonance with the recent work of Bernard Stiegler who takes up and theorizes neuroplasticity for the purposes of highlighting the effects of digital technics on human capacities to sustain attention. For Stiegler, neuroplasticity ensures a material cognitive dimension of biopower on a cellular level that begins at birth. As Stiegler observes:

When they construct children’s day-to-day environment, psychotechnologies modify the synaptic organization of their developing brains, to the detriment of the structuring of the cerebral plasticity nurtured by the psychotechniques Katherine Hayles analyzes as ‘deep attention,’ critical consciousness, which education is responsible for inscribing as the basis of rational disciplines (regulated circuits of transindividuation).

(Taking Care 94)

For Stiegler, psychotechnologies the brain’s of children in a contemporary hypercapitalist milieu are subject to the children’s programming industry whose product works to “short-circuit” the long-chain retentional circuits necessary for full psychic maturity. The
intensity of affect, the speed with which it is delivered, and the variance of information of digital media, in particular, present problems for the synaptogenic properties of the brain. Though, for Stiegler, those same plastic properties also offer alternative possibilities through the mobilization of *therapeutic* new media that cultivate a responsibility towards intergenerational retentions.
CHAPTER 4

PSYCHOPOWER AND THE PHARMAKON OF COMPOSITION

History is a heat. It is the heat of accumulated information and accumulated complexity. As our culture progresses we find that we gather more and more information and that we slowly start to move almost from a fluid to a vaporous state as we approach the ultimate complexity of a social boiling point. I believe that our culture is turning to steam.

- Alan Moore

In Chasing Literacy: Reading and Writing in the Age of Acceleration (2014), Daniel Keller argues that literacy in contemporary culture is best defined through speed—more specifically, through acceleration. As students increasingly read and write online in modes other than traditional print, Keller rightfully calls for scholars working in rhetoric and composition to further invent pedagogies of reading and writing in the twenty-first century. For Keller, many in the discipline focus too heavily on theorizing the composition of multimodal and networked texts, but fail to account adequately for changing literacy practices and what it means to read in digital environments. As digital rhetoric continues to emerge as a major area of research in the discipline, the increase in the number of composition courses that allow students to compose primarily audio and video texts increases as well. Further, the very definition of composition as a discipline is changing in the wake of this discussion. The problem for Keller, however, is the intensification of multimodal composition and production has yet to bring an equally important focus on consumption and reading of these texts in digital environments. This focus on consumption, perhaps unsurprisingly, is largely a matter of theorizing attention
and its role in literacy. Accordingly, Keller argues, that “speed and attention are vital components of contemporary literacy” (1).

Much like N. Katherine Hayles’s work on hyperreading in “How We Read: Close, Hyper, Machine” (2010) and elsewhere, Keller notes the ability to skim and scan across multiple juxtaposed windows of information through multiple digital interfaces encourages an increasingly accelerated reading practice that rhetoric and composition scholars have yet to attend to or account for. While composition instructors have tended to value slow rhetoric—that is, as described by Lester Faigley, the kinds of rhetorics that are defined by “lengthy exposition, explicit logical relations, sobriety, and order” (qtd. in Keller 95)—the benefits of fast rhetoric should be considered and evaluated.

My aim here is to show that neither fast nor slow rhetorics should be privileged by the field independently, but in their relation to attention—to the direction and composition of particular attentions. Furthermore, I will show how fast and slow rhetorics as articulated by Faigley and Keller can be productively reframed through Bernard Stiegler’s extended work on writing in all its incarnations as a *pharmakon*. As noted by Stiegler, it is the *pharmakon* that is “at once what *enables* care to be taken and that of *which* care must be taken—in the sense that it is necessary to pay attention: its power is curative to the immeasurable extent that it is also destructive” (What Makes Life 4). In the end, I want to suggest that a pharmacological approach to composition pedagogy offers an ethics of literacy for composition studies in this “age of acceleration.” In concert with Rosi Braidotti’s recent work towards a posthuman ethics of becoming and Marilyn Cooper’s recent call for a “pedagogy of responsibility” (“Rhetorical Agency” 443), a Stieglerian ethics of literacy complicates notions of responsibility premised on
individual choice in order to promote and emphasize the rhetorically affective roles of
technical objects through which a *becoming literate* is a possible in the first place.

Towards this end, it is important to articulate Stiegler’s concept of *psychopower* by showing its relation to Michel Foucault’s work on *biopower* and its relation to contemporary technologies of reading and writing.

**Psychopower, Capital, and the Biology of Individuation**

The relationship between technology and culture is such that it is notoriously
difficult to parse out the causal agents driving one from the other. For Keller, new
technologies largely enabling an acceleration of literacy cannot be separated from the
larger cultural context from which they emerged. The twin values of late capital—
efficiency and production—work in conjunction with new technologies in order to create
the conditions of possibility for an accelerated literacy. The rapid pace of hyper-attention,
moving from information stream to information stream in quick, often nonlinear
succession, *feels* productive. It is, in a sense, covering a lot of textual ground with a
seeming dexterity and nimbleness provided by a contemporary computing experience.
The persistent metaphor of “surfing” the Web is a reflection of the economic drives of
contemporary capital. Keller argues this pace of accelerated literacy is enmeshed in and
supported by a culture that values an uninterrupted availability and equally uninterrupted
production. As Keller notes:

> Speed is influenced by economic competition, which is also mirrored in social competition. Market competition for the latest communication technology or upgrade also drives the social competition to be an early
user of the technology or upgrade, which then becomes the norm. (72-73)

Norms most of us know all too well as our favorite products and services increasingly have a shorter and shorter shelf lives. The planned obsolescence of product engineering and design coupled with the cultural capital of using the latest device and services, provide the conditions for the accelerated turnover of our digital lives and the literacy practices that constitute it. Inherent in this acceleration and move towards ever faster and ever more mobile practices is, of course, the increasingly permeable distinctions between work and leisure.

While largely out of the purview of Keller’s study, this permeation of work-time and work-space into what used to be the domestic and private space-time of everyday life is worth investigating further through Stiegler's concept of psychopower. For Stiegler, the idea that such spheres of relation are increasingly indistinguishable make an argument for the replacement of affective and libidinal desire with mechanistic drives. A replacement that results in a general diminution of the libidinal economy necessary for long-term affective cultural investments and the developing of systems of care, which [attention]

Jeffrey T. Nealon's recent work on Foucault describes this relationship between work and play in terms of biopower and the traditional distinctions between public and private rhetoric. In his analysis of Foucaultian biopower, Nealon’s *Foucault Beyond Foucault* (2008) uses the indistinct boundaries between personal and private time encouraged by the contemporary culture of global finance capital to reverse the

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1 Stiegler's frequent references to libidinal desire are taken from his reading of Jean-François Lyotard's *Libidinal Economy* (1974) and Lyotard's project to use Freud's work on psychosexual desire to analyze contemporary capital is here used by Stiegler to make explicit the connection between contemporary marketing and public relations techniques as psychological techniques working in and through desire.
traditional domain of rhetoric as an essentially public enterprise. Rhetoric has been traditionally interpreted as discourse useful in the creation of a public space or a “commons”; however, for Nealon, biopower demonstrates the opposite as this common “takes up residence in the private realm, not the public sphere” (85). As the practices of biopower have leached into every facet of human life and the shift of more and more work taking place in digital environments, the distinction between one’s working-life and non-working life has been all but erased. As Nealon notes:

Following the intense saturation of biopower’s concepts and practices within everyday life, contemporary capitalism has not gone about setting boundaries on work, but rather has sought to increase work’s saturation into the very fiber of everyday life. Think of yourself at home, answering e-mail at midnight. A highly intensified mode of biopower, then, is what one might call the ‘operating system’ of contemporary economic and cultural life, at least in the so-called first world. (85)

Further, Nealon argues that the increasing privatization of economic value demonstrated by increased privatization of formerly public social endeavors along with the gross discrepancies of wealth shifting to fewer and fewer private entities can be seen in all facets of life. Nealon cites the rise of the memoir as the preferred literary form, the rise of the creative writing major, the dominance of the “body” as an academic preoccupation across many disciplines, the entertainment industries’ shift to the inside of the home through high-speed internet, pay-per-view events watched on home-theater systems, the privilege placed on “subjective authenticity” in popular music, student-centered pedagogies, and the coverage on American television of sporting events becoming
“orgies of personal revelation” (87-88). In so doing, Nealon broadens the scope of *biopower* from simply focused on the economic analysis towards those cultural practices that are so near and valued that they often fall out of the purview of critique; the creative and domestic realms that too often go under-theorized. Towards the end of his own analysis, Nealon asks leading questions that will be helpful to think through just how Bernard Stiegler in his own theory of the spread of *biopower* to distinctly cognitive and psychological domains in *psychopower*. As Nealon asks: “Are celebrations of individuals and their intimate experiences merely cultural compensation of an economic system that renders the individual’s private feelings and desires almost completely moot?” For Nealon, this seeming turn to interiority as a cultural value is a byproduct of privatization’s absolute victory in the economic domains (89). Just as the technologies of power worked through regulation, education, and imprisonment towards the docility of bodies in the development of *biopower*, *psychopower* augments *biopower* by working within distinctly mental capacities through technics of attention.

Nealon’s description of the contemporary “cognitive laborer” checking e-mail at in the middle of the night is, for Stiegler, symptomatic of a “generalized proletarianization” occurring through our contemporary *pharmacological* condition leading to a general addiction to such practices (*What Makes Life* 26). Towards this, Stiegler notes that this worker is not simply working because he or she now has the capabilities, but is rather a reaction from a history of immersion in an entire mediated milieu that has been biologically internalized. The brain, as the organ of *individuation*—and consequently *trans-individuation*—is in a relation to the technologies of literacy and sociality on a chemical level. This central concept of individuation that Stiegler takes
from the work of Gilbert Simondon is *always* a process of collective individuation, that is transindividuation, and it is that which separates it from individualization in a more general sense. For both Simondon and Stiegler, “for the *I* to individuate itself, my individuation must participate in the process of collective individuation, that is, in the individuation of a *we* where, insofar as I am an *I*, I have always already found myself inscribed” (*Acting Out* 66). This pre-inscription of the *I* that is not yet an *I* is elsewhere called the “preindividual funds” of the “transindividual horizon” and represents all the possibilities of becoming individuated including language, law, philosophy, etcetera (*Acting Out* 5).

What is important here is the relationship to the material brain and these material instantiations of the preindividual fund which neurologically inscribe the brain in the processes of adulthood, or, as Stiegler discusses in a later work:

> The brain is a plastic space of reticulated inscriptions organized by the internalization and, if you will, the retro-projection of relations linked with and through the supports of epiphylogenetic projection—through which nervous memory both exteriorizes and internalizes itself, that is, weaves itself by passing through its outside, by making a detour through a pharmacological milieu—and such that synaptic short-circuits are also possible. (*What Makes Life* 69)

For this reason, Stiegler can make claims similar to those of externalist thinkers discussed in the second chapter, noting that “the life of the brain to a large extent occurs *outside* the brain” (*What Makes Life* 68). What separates Stiegler from many of these other thinkers, however, is that his work understands these processes of individuation as essentially and
irrevocably pharmacological—that is there are cognitive and social consequences that Stiegler articulates along the line of the poison/cure metaphor that the pharmakon provides. Much like biopower, and power more generally, for Foucault, working to catalog bodies, mitigate risk, and intensify punishment, through the generation of data—medical records, illness prediction, the knowledge produced by bodies sick and well—psychopower is actively involved in the collaborative production of exploitable metadata. For Stiegler, the exploitation of metadata through social engineering and relational technologies working to develop folksonomies are not benign, but rather are intended to disrupt and “short-circuit’ the capacity of attention necessary for individuation (“Relational Ecology” 13). While digital media has intensified psychopower, it is important to trace psychopower further back in the 20th century to understand Stiegler’s concept. In the contemporary pharmacological moment, this consequence can be seen as a crisis of attention, and ultimately, individuation itself.

One can think of the whole overarching structure of forces that fall under the purview of “market research,” and how such research is mobilized through film, television, and new media to get an idea of the enormity and scope of Stiegler’s concept of psychopower. In fact, for Stiegler, it was in the 20th century, beginning with Edward Bernays, the famous nephew of Sigmund Freud and the “father of public relations,” that psychopower became the central core of consumer capitalism. This trend has continued in the 21st century with the development of neuromarketing techniques. While Lanham observes signs of the healthy progression of late capital and Hayles sees a looming problem for models of education in the 21st century, Stiegler sees nothing less than the collapse of western culture and permanent neurological disorder of an entire generation;
with the digital pharmacology “the speed of operation has led to short-circuits in the political and noetic spheres” (What Makes Life 103). To quote N. Katherine Hayles, whose work influenced Stiegler’s thinking about attention, “Stiegler argues that the phenomenon is much graver than I acknowledge; rather, attention is actively being destroyed by what he calls the audiovisual (i.e. film and television) and programming industries” (How We Think 251). One can better understand how Stiegler can make such claims by understanding the processes of individuation and the role attention, as retention, plays in such processes.

A central concept running through Stiegler’s oeuvre, the notion of retentional apparatuses, provide the condition of possibility for both society and any notion of a “self.” These retentional apparatuses are divided into three registers that simultaneously operate in the function of individuation: primary retention, the perception of the present as it experienced moment-by-moment; secondary retention, the internalization of primary retention woven in the context of the subject’s collective internalized representation of life, or what we generally think of when we think of one’s “memory”; and, finally, tertiary retention, the material instantiation of memory and the formation of archives through technologies. Tertiary retentions are the collected technics of secondary retention that allow for something like culture to emerge. For Stiegler, “[t]ertiary retentions are the sedimentations that accumulate across generations and that are central to the process of creating collective individuation, internalized through both consciousness and the unconscious during the development of the psychic apparatus” (Taking Care 6). The ongoing processes of individuation result from a relationship with the cultural past, relationships the technologies of psychopower, for Stiegler, threaten to undermine.
**Technology and/as Pharmakon**

Such issues are pharmacological in the sense articulated by Jacques Derrida in “Plato’s Pharmacy” (1968) as both poison and cure. In Socrates’ recounting to Phaedrus the Myth of Theuth (274C-275B). Theuth, an ancient Egyptian divinity that is accredited in the dialogue for the discovery of calculation, astronomy, games of dice, and—most importantly in the myth—writing. As Socrates continues, Theuth explained to the Egyptian king at the time, Thamus, the benefits of his many inventions and the effects they would have on the Egyptians. Describing writing, Theuth notes that it will “make the Egyptians wiser and will improve their memory: I have discovered a *potion* for memory and for wisdom” (274E emphasis mine). In reply, Thamus notes that Theuth’s discovery of writing and his affection for it has clouded his judgment, that his description of writing as potion for remember is the opposite of what it truly is:

> In fact, it will introduce forgetfulness into the soul of those who learn it: they will not practice using their memory because they will put their trust in writing, which is external and depends on signs that belong to others, instead of trying to remember from the inside completely on their own. You have not discovered a potion for remembering, but for reminding; you provide your students with the appearance of wisdom, not with its reality. (275A)

Famously, in his reading of Plato’s *Phaedrus*, Derrida analyzes Plato’s use of this word *potion* (*pharmakon*) to characterize writing. The notes accompanying the 1995 translation of Phaedrus by Alexander Nehamas and Paul Woodruff note that *potion* here can refer to
a “medicinal drug, a poison, or a magical potion” (79). For Derrida, the multivalences of *pharmakon* as used in Plato’s dialogue, as both poison and cure, point toward the inherent “complicity of contrary values” contained in writing itself (“Plato’s Pharmacy” 125). For Derrida, the “‘essence’ of the *pharamakon* lies in the way in which, having no stable essence, no ‘proper’ characteristics, it is not, in any sense (metaphysical, physical, chemical, alchemical) of the word, a *substance*” (125-126). Hence, *pharmaka* as a “pharmaceutical nonsubstance” is insecure, unstable, and thoroughly working through *différance*.

In “Plato’s *Pharmakon*: Between Two Repetitions,” published as the first chapter in the influential *Derrida and Deconstruction* collection (1989), Walter Brogan notes that Derrida’s encounter with Plato’s dialogue is indicative of the problematic Derrida wants to express with regards to writing itself; that every composition, every moment of writing is simultaneously *a reading* that forecloses possibility (8). To translate *pharmaka* as either remedy or poison is to foreclose the play of *différance* that allows the word to function at all. Thus, to write is to close off possibility. Not only the *logocentric* tradition of Western philosophy makes this demand, but something about the nature of writing itself. In sum, *writing is a pharmakon*—as Thamus said. On one level then, perhaps ironically, Derrida and Plato’s dialogue seem to be agreement—writing is *pharmakon*—but the difference, the essential difference, is one of style. Stylistically, Derrida famously attempts to *perform* the play of difference in his writings. As noted by Rollins,

> In the case of ‘Plato’s Pharmacy,’ Derrida demonstrates a style of inheritance that exceeds the content of his claims about the Phaedrus.

> Though this text is full of methodological asides, for example, it is
impossible to tell where Derrida’s discussion of method stops and the enactment of this method begins. (23)

Whereas it has been generally interpreted in the history of Western philosophy that Plato is creating what Alexander Galloway has called a “moral distinction between the lifeless media and the living people” in *Phaedrus* (*French Theory* 16), Derrida’s performative style notoriously complicates the possibility of reading in this way. One can see Plato’s distinction between the living *logos* enacted in dialogue and thought compared to the inert pretension towards *logos* that occurs in writing. In this letter, only a teacher as a pathfinder can enable the “flash understanding” that “blazes up” and allows the mind to be “flooded with light” (“Epistle VII” 99). For Plato then, *pharmakon* of writing is a negative, while for Derrida it is an invitation to make a statement regarding language writ large, and, finally, for Stiegler is the general condition of human life at every turn. For Stiegler, the pharmacological question is the question of technology—what capacities do technics open and which do they close; said another way, how what do they cure and what do they poison.

For Stiegler, every technology from pencils, cotton gins, tape recorders, iPods, and server rooms presents a pharmacological dilemma that that threatens individuation at every step. For Stiegler, technology is pharmacology. The technological shifts we are currently living through present a particularly pointed dilemma for Stiegler in that current technologies threaten to sever the long-chain associations of tertiary retention and the attentional and critical faculties necessary for education in the Kantian sense—as the struggle for *maturity*. Digital media then, for both Stiegler and Hayles, presents a crisis, or turning point, for education. This particular crisis calls for a cataloging of affects in
order to intervene. In other words, a cultural therapeutic that can transform the digital milieu from one dominated by the *capture* of psychopower to the *care* of what Stiegler refers to as “technologies of the spirit.”

For Stiegler, his therapeutic is to be achieved through interdisciplinary study of the mutual dependencies and coevolutions of the three domains of transindividuation: the technical, the social, and the biological. This study, which Stiegler refers to as a general organology, attempts to index the “hypermaterality of knowledge” in order to gain an understanding of the relationships between the bodies, minds, and technologies. Stiegler is quick to note that “this study of hypermaterality must be placed at the heart of digital studies, which must itself become the new unifying and transdisciplinary model of every form of academic knowledge” (“Die Aufklärung” n.pgs). Just as Hayles posits the need for bridgework—between the cognitive modes of deep attention associated with literacy and book culture and hyper cognitive modes—Stiegler calls for a pharmacological indexing necessary for the “organological rethinking of the education system” (*Taking Care* 83). For Stiegler, technology should be indexed according to its associated effects on attentional forms and its relation to tertiary retention. This reactivates, according to Stiegler, questions introduced under the rubrics of distributed cognition, situated knowledge and extended mind by the likes of Edwin Hutchins, Andy Clark, and others (“Relational Ecology” 13).

**Stieglerian Pedagogy**

The central chapter of *Taking Care of Youth and the Generations* (2010), entitled “What is Philosophy?”, is unsurprisingly associated with Deleuze and Guattari’s book of
the same title. Their *What is Philosophy?* (1991), became a best seller in France and is impossible to disregard when reading Stiegler’s work. Whereas Deleuze and Guattari spend their work making distinctions between science and philosophy—and these fields concern themselves with, namely, funtives and concepts—Stiegler begins with the beginning, that is, with what is generally considered Plato’s first written work, *Lesser Hippias*, in order to point towards the initiatory gesture of philosophy itself as a question regarding philosophy as teaching. This first question, according to Stiegler, demonstrates that philosophy’s question is not of being, becoming, poetry, law, power, technics, not even of the pharmacological question of memory technologies—but of teaching (*Taking Care* 107). Stiegler’s reading of *Lesser Hippias* shows that philosophy’s question—of teaching—also shows that it is philosophy’s practice.

While philosophy as teaching and practice was present in this earliest example from Plato, philosophy’s general shifting of emphasis from the techniques of self-constitution—that is “care for the self”—towards the recognition of a pre-existent self implicit in the Delphic injunction—“know thyself”—Plato moves from the “body knowledge” of rhetoric to the disembodied *gnosis* of anamnesis. For Stiegler, the dictum to “know thyself” ontologically as *what is* contrasted with “care for thyself” as *what does*. As noted by Alexander Galloway:

I am not sure philosophy has a name for ‘what does,’ but if it did it would probably be filed under either physics or ethics, these being the two branches of philosophy that consider the doing or the practice of things, the two branches that consider the machinic energies of the world that Stiegler so avidly entreats us to cultivate. Or perhaps one wanders too far
afield. Perhaps this is simply what one calls the political. What does.

*(French Theory 11)*

What the philosopher *does* that is central to Stiegler’s practice of philosophy is desire. Specifically, for Stiegler, the philosopher desires to understand the objects that, by necessity of the practice itself, can never be understood. As Stiegler notes, “[t]he philosopher loves wisdom precisely to the degree that escapes and transcends him: wisdom is philosophy’s object of desire in proportion—and disproportion—to its being chimerical, persisting for the philosopher as an endlessly renewed interrogation” (*Taking Care* 109). The very limits of interrogation, the end limits which end in *aporia*, demonstrate the boundary between philosophy and what Stiegler refers to as *mystagogy*—religious teaching. Thus, for Stiegler, philosophy’s pedagogical object can “*never* be the telos of straightforward teaching (the simple interiorization of retentitional operations), but that must become an experiment, indeed a way of life: an ascetism, a care, an *epimêleia* of a specific type…” (109). Education for Stiegler is the continual care and cultivation of the desire for wisdom.

However, *understanding* that begins with the technology of writing composes objects as *knowable* in that they are “stripped of mystery” and inculcated into systems of grammatisation. But, according to Stiegler, the object of this understanding can never be ultimately reduced to composing due to there being an “irreducible inadequacy” between the object itself and knowledge of the object (110). Most importantly, for Stiegler, this discrepancy is at the very heart of individuation—there must be this *aporia*. Understanding’s important quality here, being that which precedes it, the *desire for* understanding the object. For this reason, Stiegler claims, that Plato and Aristotle argue
that philosophy is not a techné. A technique to be understood and re-enacted displaces the object of philosophy as an affective desire. As Stiegler notes: “The true, the just, and the beautiful have an effect on me, transcending my understating as such: they transform me” (110).

Of interest to rhetoric scholars in Stiegler’s discussion of teaching as philosophy’s practice is Stiegler’s critique of Plato’s shortsightedness with regards to sophistry as a pharmakon necessary for individuation. In this sense, Stiegler wants to “rescue” rhetoric from the history of Western philosophy that continues to interpret in various, often normatively negative ways, as we shall see with Emmanuel Levinas’s sentiments against it. Even in the classical world the term was as contested as it was prevalent. As John Muckelbauer notes, “[w]hile it appeared to have some connection to things like pedagogy, civic virtue, and language, it also seemed uninterested in providing a rigorous account of its involvement with any of these things” (“Returns of the Question”).

Sophistry, for Stiegler, is central to processes of becoming and Plato’s repression of it calling the knowledge gained through technique sophistry and those that practice it polimathea or Mister Know-It-All (Taking Care 113). [Plato doesn’t see the pharmakon of rhetoric.]

In Stiegler’s reading of Plato, rhetoric is interpreted solely as a poisonous technic, an organized knowledge that is a hypomnisis, a “making-technical of memory,” that is pitted against the understanding of philosophy that can never be grammatized, organized, nor made into a techné. We can get a sense of Plato’s privileging of the former in the dialogue Meno. In the dialogue as Socrates and Meno discuss whether or not virtue (arête) can be taught and where knowledge comes from, Socrates famously asks an
uneducated “slave boy” a geometrical question and the slave boy seemingly arrives at the answer through a process of recollection. This process, anamnesis, is a direct interior dialectic independent from any exterior memory aids. This process, for Socrates, apparently answers the “sophistic paradox” of the origins of knowledge; Meno articulates this paradox once Socrates admits to not knowing what virtue is, but expressing a willingness to search for it:

Why, on what lines will you look, Socrates, for a thing of whose nature you know nothing at all? Pray, what sort of thing, amongst those that you know not, will you treat us to as the object of your search? Or even supposing, at the best, that you hit upon it, how will you know it is the thing you did not know? (80D)

Socrates’s answer comes through a “doctrine of recollection” and spells out the whole of Platonic epistemology. This epistemology is dependent upon an immortal soul, having exited in the world of forms prior to being incarnated, recognizing the unknown objects once they are discovered. Virtue, like any other unknown object in Platonic dialogues, becomes a bit like Justice Potter Stewart’s famous verdict with regards to pornography, the lover of wisdom will recognize and know the object when he or she comes across it. Hypomnnesia, and hypomnemata of all of kinds—most famously the act of writing in Phaedrus and the “Seventh Letter”—thus act as a detriment to the search for wisdom as it bypasses the process of recollection as anamnesis in favor of a static grammatization or representation of wisdom.

Stiegler argues, however, that Plato’s dismissal of hypomnemata and organized cultural memory as the techné of the sophists denies the pharmacological relationship that
is necessary for individuation. According to Stiegler, “[a]s anamnesis, philosophy requires a hypomnesia that as a stage of grammatization makes it possible. But philosophy denies this. (Taking Care 111). Further, since Plato, Stiegler argues, the entirety of academic tradition has denied writing even as it is constructed on writing as a culture of letters. Retentional technologies, such as writing, configure disciplines in academia as they also re-configure the disciplines as projections of knowledge-to-come. What's important to recognize here is both the crucial importance of grammatized understanding—as techné, as epistêmē, and, in this sense, as rhetoric—for the possibility of philosophy in Plato's sense and a the concomitant repression of grammatized understanding in all forms by philosophy. This amounts to a repression of the pharmakon itself by Plato's Academy, a repression that continues to shadow over much of contemporary education. The refusal on the part of academic institutions to embrace all forms of knowledge as mnemotechnological has allowed for the programming industry to dominate those technologies and their “empirical mastery of the contemporary forms of psychotechnologies of hypomnesia” (112). What is called for here, though Stiegler fails explicitly name it, is a rhetoric of the pharmakon. How does the grammatization of knowledge affect and persuade the student-reader with regards to individuation? How do particular technologies influence how we perceive and interpret knowledge? Essentially, how are particular technologies rhetorically affective?

In Totality and Infinity: An Essay on Exteriority (1961), specifically a section in the work entitled “Rhetoric and Injustice,” Levinas works to construe rhetoric as a violent encounter with the other that does not seek truth—as does philosophical discourse—but seeks “propaganda, flattery, diplomacy, etc.” (70). By defining rhetoric as a violence to
the face of the Other, it is in a direct opposition to the ethics that play such a central role as first philosophy; an ethics more foundational than ontology even. For Levinas, rhetoric is a violence on the very idea of freedom that should be “incorruptible” and unable to be questioned. Indeed, Levinas argues, that rhetoric interrogates this freedom of the Other asking it to explain itself: “What is the nature of this freedom?” (70). To encounter the Other in truth, one must renounce the manipulative pedagogy of rhetoric and cease attempts to objectify—the rendering into an object that, for Levinas, seems to be the goal of rhetoric—and allow for the required “let him be” of conversation to emerge.

Discussing the role of dialogue and dialectic in Platonic dialogues, Levinas argues that the transformation of the other, the interlocutor, into an Idea was also simultaneously a transformation of the other into the Other. Noting the maiotic quality of Plato’s philosophy, Levinas notes: “Thought, for Plato, is not reducible to an impersonal concatenation of true relations, but implies persons and interpersonal relations” (71). To be sure, however, Levinas does not want to cast Platonic dialogue as a conversation amongst equals, rather it is Socrates coming to his interlocutor transformed to Other—Socrates’ master. This relationship of the Other as master is necessary for Justice for Levinas—to recognize the other as master is the seat of ethics and of justice. Equality in the conventional sense, Levinas argues, has more to do with financial relations and economic concerns. Justice, on the other hand, assumes a relationship of self and Other that is outside of the “ruse, enterprise, and exploitation,” which is the domain of rhetoric (71).

Towards the end of *Totality and Infinity*, Levinas makes a direct connection between rhetoric and teaching. Teaching, for Levinas, is not simply the maiotic
orientation of a master-teacher drawing forth the knowledge the student already is capable of containing—and in fact contains a priori. Rather, teaching is a relationship with a master in which the master brings to the student, introduces to the student, more than the student contains and is capable of containing. In Levinasian idiom, the teacher enables the student to contact Infinity. Infinity is not so simply the absolute resistance to the totalizing gesture—the violence—of rhetoric, for Levinas. As the title alludes to, there is totality and there is the alternative, infinity. For Levinas, the Platonic dialogue as an ideal does not present a model for teaching as participants in dialogue of this type have already “decided for discourse, who consequent have accepted its rules, whereas teaching leads to the logical discourse without rhetoric, without flattery or seduction and hence without violence” (180). With the Logos as ideal, as the telos of discourse, there is a totalizing logic already in place. For Levinas, teaching comes before the Logos, before knowledge, if one comes to the teaching relation as one approaches Infinity. Writing in a recent special issue of JAC dedicated to Levinas’s relationship to rhetoric, Grant Matthew Jenkins notes the inherent ethical center to teaching in Levinas’s project: “teaching presupposes a relationship with an exterior, the Other, so it is ethics, not reason, that makes teaching possible” (573). I would argue that it is also ethics that makes teaching—as the practice of philosophy—possible in the work of Bernard Stiegler as well. The difference is, and it is a key difference to be sure, that Stiegler recognizes the role of rhetoric in this relationship as absolutely essential—here I am tempted to say, an essential violence—without which, teaching would be impossible.

It may be helpful to investigate the key differences between Stiegler and Levinas with regards to rhetoric and teaching by looking at a key passage from Totality and
*Infinity* that Grant also pulls from:

> Ideas instruct me coming from the master who *presents* them to me: who puts them in question; the objectification and theme upon which objective knowledge opens already rest on teaching. The calling into question of things in a dialectic is not a modifying of the perception of them; it coincides with their *objectification*. The object is *presented* when we have welcomed an interlocutor. The master, the coinciding of the teaching and the teacher is not in turn a fact among others. The present of the manifestation of the master who teaches overcomes the anarchy of facts (69-70)

For Grant, Levinas is stating that knowledge comes in conjunction with the pedagogical moment—the experience of teaching. As Grant continues, it is language that the teacher gives the student. Though the language may change—as will the situated knowledge, the content, etc.—the “primordial sociality” of the teaching relation will not (573). For Levinas, however, it seems that rather than the situated content playing a conjunctive role in pedagogy, it is reduced to a form of violence that only the face of the Other in a recognized infinity can rescue. I would argue that if it is the totalized content—the knowledge—that the student encounters through the teacher is of equal importance in an ethical pedagogy. Here it may be helpful to look at Derrida’s critique of Levinas’s ethics in “Violence and Metaphysics: An Essay on the Thought of Emmanuel Levinas” (1967) in order to provide a fuller context to Stiegler’s thought on rhetoric and pedagogy and how is able to respond the way he does throughout his work on pharmacology.

Teaching in Levinas’s work is premised upon the face-to-face encounter that
contains the chance for, at least in some regard, an outside of totalization—that is, infinity. Presence, then, physical presence of the teacher and the student is essential. Much like Plato’s “Seventh Letter,” which argues that philosophy depends upon physical presence for the “spark” of the love of wisdom is physically transferred from teacher to student, the static written word will not suffice. The past, the written, the said, has been consumed by the violence of totality for Levinas and is unable to teach anything. The assistance of the Same is necessary for the encounter with the Other, for Derrida. That is, to put it another way, totality is necessary for and is assisted by infinity in an economy of violence:

An economy irreducible to what Levinas envisions in the word. If light is the element of violence, one must combat light with a certain other light, in order to avoid the worst violence, the violence of the night which precedes or represses discourse. This vigilance is a violence chosen as the least violence by a philosophy which takes history, that is, finitude, seriously; a philosophy aware of itself as historical in each of its aspects...

(117)

It is evident here that, for Derrida, an attention to rhetoric is a kind of necessary violence that keeps the violence of logocentric regimes aiming to bypass—or short-circuit—discourse. In Stiegler's idiom, this is exactly what the technologies of psychopower aim to do—a kind of violence against history and long-term retentio-cultural memory. For Stiegler, however, philosophy as a practice of teaching centered on rhetoric is another type of psychotecture—or nootechnologies—that works to foster individuation and by placing subjects historically in a world.
The act of teaching, for Stiegler, places us—the teacher and student—on the grounds of the *pharmakon*—poison and cure, violence and infinity. The totalizing effect of writing that becomes the literate *pharmakon* is a necessary part of the teaching process. Further, what Levinas views as the violence of persuasive rhetoric is, for Stiegler, at once a psychotechnology of violence and a necessary foundational *dogmatism* that can be “played off of” through questioning and problematizing. In this way, it is easy to think that Stiegler uses rhetoric as philosophy’s straight-man—holding to the steadiness of *epistēmē* while philosophy is “in play” with concepts moving towards *aporia* and undecidability. But philosophy, as desire, can only do anything when coupled with an object to cathected itself with (*i.e.* rhetoric). Rhetoric and the grammatization of understanding, then, allows for the development of systems of care, which is the object of teaching and the practice of philosophy as a practice.

Early in *What Makes Life Worth Living*, Stiegler uses the analogy of what English pediatrician and psychoanalyst Donald Winnicott called the *transitional object* to think through this relationship between rhetoric and philosophy. A *transitional object* for a child is any object that is used to provide a sense of comfort and relief form anxiety when the mother-child bond is not available. For Stiegler, the *transitional object* is not merely a substitute for the mother-child bond, but rather is the object that *enables* and *configures* the mother-child bond. Stiegler notes that the actual object, the blanket or stuffed animal say, is only important insofar as it provides a space for the child to encounter the mother and vice versa. In its protectional capacities then, the transitional object “gives to the child placed under this protection the feeling that ‘life is worth living’” (2). In this way, the transitional object is the first pharmakon experienced. It is an *external* object both
mother and child are in some way dependent upon and, by consisting in the material world, lends sovereignty and autonomy to both (2). For Stiegler, then, the transitional object enacts the necessary composition of heteronomy and autonomy. Whereas Plato opposed heteronomy and autonomy—the “false” memory of an externalized writing opposed to “real” recollection of internalized remembering—Stiegler notes the two are always, in fact, composed. I would argue this is a moment of agreement between Bernard Stiegler and Richard Lanham with regards to the way objects not only shape our attention, but enable the shaping of attention to take place at all. Though to two thinkers are political contrasts, they can be thought together as their own pharmakon.

**Lanham’s Rhetorical Education of Oscillation**

Herbert Simon’s "Designing Organizations for an Information-Rich World” articulates an attention economy of supply and demand. As Simon notes, “...in an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it.” Largely building off of Simon’s work, rhetorician Richard Lanham in his own Economics of Attention writes, “It will be easier to find our place in the new regime if we think of it as an economics of attention. Attention is the commodity in short supply.”

In the twenty years following Lanham’s definition, his work has continued to keep attention-rhetoric coupled and central to his work. Recently in The Economics of
Attention (2006), Lanham has investigated the role of rhetoric as attention in our current “information economy.” Reworking the so-called information economy, Lanham argues that all economies are based on supply-and-demand and the short supply in contemporary technical societies is certainly not information, but rather attention. Consequently the new economists, for Lanham, are those that can manipulate the push-and-pull of attention: artists, designers, and rhetoricians. This is demonstrated most succinctly in Lanham’s discussion of twentieth-century art as playing on bi-stable oscillation of at and through.

In many ways the question of capture and care, or the pharmacological condition of the digital milieu, is a return to one of the most fundamentally enduring questions the history of rhetoric has ever produced: the question of whether or not the practice of rhetoric, in and of itself, produces virtue or vice. Asked differently, is a good orator necessarily a good person? The question was most famously asked by Quintilian toward the beginning of book 12 of the Institutio oratoria when he questions Cato the Elder’s definition of the perfect orator as vir bonus, dicendi peritus, or “the good man speaking well.” In The Electronic Word: Democracy, Technology, and the Arts (1993), Richard Lanham revisits Quintilian’s question, calling it the “Q” question, in order to say that Quintilian’s refusal to ever give a straight answer to the question is nothing new, in fact, it reflects a tendency of Western humanism since Isocrates and Plato (155). Quintilian proffers what Lanham dubs “the Weak Defense” which argues that rhetoric itself bifurcated into good and bad. It follows, of course, that whoever is speaking is using the good kind of rhetoric and their opponents are propagating the bad kind. There is, however, a “Strong Defense” to the question as well. It states that we can never know how to evaluate what is good or bad until the always man-made social context plays itself
out. Within this defense, rhetoric is “is not ornamental but determinative, essentially creative” (156). For Lanham, this question would remain happily unanswered or simply trotted out periodically to spur philosophical debate had it not been so persistently asked of, and by, those of us in the humanities in order to provide some kind of justification for the education we provide. Whenever a curriculum is designed, or a syllabus for any course that relies on reading and writing we are required to ask this question once again.

According to Lanham, the “Q” question has been most significantly answered by Peter Ramus who dissolves the question by splitting the rhetorical canon giving invention, arrangement, and argument to philosophy and leaving rhetoric with style and delivery (157). Thus the ethical considerations of rhetoric no longer apply. Ramus provides neither the Weak Defense—rhetoric itself is neither good nor bad—nor the Strong Defense—history cannot judge it either good or bad now that rhetoric qua rhetoric is ethically neutral. Ramus’s decision to split and contain philosophy from rhetoric, which Lanham argues was never the case in ancient rhetorical paideia despite Plato’s charges, allowed for the creation and evolution of academic disciplines to be thought of as essentially discrete sites. For Lanham:

We can hardly make too much of this decision. Value-free language and the possibility of a self-contained discipline make possible both modern science and that mapping of humanistic inquiry onto a scientific model which has created modern social science as well. (158)

Further, this decision problematizes the relationship between thought and action itself: “Thought now had its own disciplinary arena. Knowing could be a self-enclosed activity all by itself, pursued ‘for its own sake,’ a claim that simply makes no sense in the
rhetorical paideia, tied as it was to public action” (158). Thus, for Lanham, Ramus splitting of the discipline of discourse into “essence and ornament” had an effect not only on the Renaissance education of Ramus’s own time, but continue to affect contemporary pedagogies of reading and writing into and through our contemporary world. However, Lanham does not contain the Ramus effect to education, rather it can be seen in management of corporations and the general comportment of the culture of capitalism.

Towards the end of the essay, Lanham reads Quintilian differently. Rather than the Weak Defense that Quintilian actually uses to answer his own question, Lanham asks whether or not his answer was dependent upon the idea of the Strong Defense that was in mind the whole time. For Lanham, the Strong Defense is linked to the civic good, to ethics, and to being a “good man,” through the creation and maintenance of a public life over private realities (189). Perhaps Quintilian understood, Lanham questions, that rhetoric is how the public person is generated—it did not simply train the person for public life, rather it generated the conditions of possibility for that public person by creating and maintaining a public life in toto. This particular kind of rhetorical education, and, as a result, this kind of humanism, is one that must be able to see and oscillate between a rhetorical play of ornamentation and the purposeful content of the message. Or, as Lanham argues, rhetoric must be supple and, at times, “look at language self-consciously is to play games with it,” and at other times be able to “look through language unselfconsciously” and “act purposively with it” (189). In one of the more important moments of “The ‘Q’ Question,” and one that will demonstrate a stark political and ideological difference between Richard Lanham and Bernard Stiegler, Lanham notes that the link between philosophy and rhetoric, the key element to justify a humanities
education in a largely dismissive world is power. According to Lanham, “[w]e can begin to envisage as well how a theory of reading and writing can become a training in moral judgment. For what links virtuosity, the love of form, and virtue, is virtú, power” (189). Power, for Lanham, is generated through the rhetorical oscillation of attention by those able to move, to persuade, to be both a virtuoso and virtuous. This is, of course, the bi-stable oscillation of at and through that Lanham discusses elsewhere in The Electronic Word and, at length, in The Economics of Attention.

Lanham argues that the 20th century’s major contribution to the history of art was this play on bi-stable oscillation. Just as John Cage invites audiences to “listen” at silence—or silence’s impossibility, more precisely—in 4’33” (1952), he simultaneously invites us to be attentive to what we would ordinarily listen through. Similarly, Christo’s Running Fence (1976) focuses our attention on the aesthetic potentials of wind and the invisible boundaries of bureaucratic zoning practices—things we usually see through. It is this at/through distinction—indicative of Lanham’s new rhetorical figure oscillatio—that marks digital environments most profoundly. In digital environments we must toggle between looking at the screen as the software continually calls attention to itself as rhetorical, as constructed, as stylized, and looking through the screen for content, meaning, and substance. The ability to oscillate attention between “at” and “through” is an essential twenty-first century literacy and the central concern of rhetorical education for Lanham. Much like Stiegler, Lanham interprets Plato's repression and dismissal of sophistry as the beginning of a fundamental error in the Western tradition, and one that has continual consequences through to the contemporary education. As Lanham notes:

Rhetoric has, since Plato first calumniated the Sophists, been synonymous
with the art of deception. In democracies, we always call the methods by which we come to common purpose 'politics' and scorn them, as if there were some other way to decide business in a democracy. Nowadays, we've come to call it 'spin'. The flipside of this definition is the art of cooperation. (58)

For Lanham, Christo's work presents an antidote to Platonic repression of rhetoric. Christo, according to Lanham, attempts to teach rhetoric as he creates moments and situations which invite social cooperation from the bottom up through installations that allow for the reflection on “the social machinery of persuasion” (59). *Running Fence*, for example, by the way it was self-financed—by being a startup company—was kept in “the real world” according to Lanham, and sought no outside support or funds (60). For Lanham, by Christo selling a kind of artistic stock in *Running Fence*, certificates with sketches of the piece by the artist, is purely joint-venture capitalism taking place in the attention economy. *Running Fence* presents a pedagogy of attention in contemporary America, according to Lanham. By creating a very temporary project—the actual “fence” was only to be up for two weeks—from scratch and self-financed, Christo shows how we can “bring an idea to fruition in an economics of attention” (62). A lesson that can, of course, be carried over to the political and public spheres of society. Christo is, in essence, an inherently social artist and stands in stark contrast to characteristics of the art world Lanham seeks to negatively assess. Christo occasions Lanham's critique of art that seeks philanthropic financing and governmental funding in order to maintain a separation between art and hard financial economies of the world. Such an artist represents, Lanham argues, the “top-down Platonic lawgiver” who thinks society should pay for his “ex
cathedra pronouncements” (61). We can see from Lanham's short discussion of Christo's work that the attention economy is intimately tied tethered to the financial realities of the monetary economy more generally. Consequently, rhetoric's role in turning attention one way or the other and its success can be measured by in dollars. For Lanham, attention may be the substance from which all art is made, and therefore inherently rhetorical, but it can be used to serve either socio-pedagogical or self-serving ends. If Christo is the former model, then Andy Warhol's explicit and purposeful vapid stance in the “hyper-ventilated self-consciousness of the New York art scene” represents the latter (63). Yet, for Lanham, both Christo and Warhol represent “economists of attention” making their art from attention, the stuff that makes up “what we think about stuff” (63).

While he ends on an equalizing note, placing Christo and Warhol on an equal footing with regards to their rhetorical economics, Lanham’s distaste for Warhol’s actual financial and economic life is undisguised. According to Lanham, Warhol was “naturally shallow, selfish, and unreflective, a person who would let his kind old mom take care of him for much of his life and then not bother to go to her funeral” (52). Compared to Christo’s bootstrap entrepreneurship, Warhol is indicative of the conventional artistic community stressing the need to remain separate and funded, that Lanham has an agenda against. Similarly, in the earlier “Q” question piece, we could easily put “the humanities” as the culture Lanham rails against for their unwillingness to join the practical world of business. It is little wonder that the preeminent example of the good man speaking well that Lanham arrives at towards the end of the “Q” question is none other than former Apple co-founder and CEO, Steve Jobs. For Lanham, Apple Inc. For Lanham, the Jobs fronted Apple Inc. represents a company that has mastered the rhetorical oscillations
between at and through in a way that enriches humanity. Focusing on a now famous anecdote surrounding Steve Jobs luring PepsiCo president, John Scully, to Apple by asking him: “Do you want to sell sugared water for the rest of your life? Or do you want to come with me and change the world?” (191). According to Lanham, Jobs’s offer extended an invitation for Scully to move the profit-centered career that Pepsi offered him to the “moral life” of Apple Computers. Lanham continues,

Without sentimentalizing the life of a volatile corporation, we can say that people working at Apple found that it engaged far more of the human personality than the highly ritualized and spiritualized competitive atmosphere at Pepsi.

Clearly Lanham has Apple’s American executives in mind as he states this rather than the thousands of Apple’s assembly workers who are unaffected by Apple’s purported ethos of conscious capitalism. While it would be nearly twenty years before Apple became the most profitable company in history and criticized for innumerable human rights violations across the planet, one is still taken aback by Lanham’s conclusions that, at its best, Apple “has been trying to mix human motives, not to purify them, to stake its future on a rich mixture of game, play, and purpose, as the most creative for us humans” (192). Apple, for Lanham, represents not only an ideal in the economics of rhetoric-attention, but in old fashioned monetary economics as well. As Pat Kane noted in his review of The Economics of Attention for the The Independent, Lanham maintains a “unusual political stance for a literary academic: as a Hayekian, free-market, bottom-up libertarian” (n. pag.). Indeed Kane’s charge is supported throughout the work in a number of arguments for both Friedrich A. Hayek’s economic theory and for a theory of a “bottom-up”
dynamic at play in culture.

According to Lanham, Hayek’s argument for a bottom-up’ free-market economy “parallel in many ways the basic assumptions of the rhetorical system of education” (*Economics* 28). Lanham’s argues that rhetoric sets the conditions of possibility for competition in a free-market economy to exist and, from there, a site for rhetoric to prosper in the agon of entities competing for attention and, ultimately, capital. Such a structure is inherently bottom-up and counter to the “top-down force” operating through the “state planning of socialism” (73). A belief in the possibility of a bottom-up economy, whether of attention or of stuff, enables Lanham’s valorization not only of Christo and Steve Jobs, but of a self-fashioning ideal of a rhetorical education that gives a humanities education its value. It’s telling discussing the “Q” question in his latter work, Lanham notes, “What good, finally, are the arts and letters, what work do they do in the world? They leaven and enrich, rather than repudiate, the commercial world and its values” (260). From the civic to the commercial world is apparently the trajectory of a Lanhamian rhetoric.

In many ways, the primary difference between Lanham and Stiegler with regards to the attention economy is an ideological one. Whereas Lanham observes a “market attention economy driven from the bottom” (*Economics* 20), Stiegler notes that pure “bottom up” organizations do not exist if we mean that such an organization must bring “all information and grounding decisions to the participants, rather than having a few decision makers that impose their order,” rather “[s]omeone always decides” (“Contributory Work” n. pag.). In stark opposition to Lanham’s libertarianism and the role he assigns to digital media in the future of capitalism, we see, in Stiegler’s work, a
critique of the attention economy. A critique centered on the notion that digital technologies—and, indeed, the whole host of technologies that brought about the ascension of “screen media” in the 20th century—have the ability to capture attention in ways detrimental to individual and cultural development. Stiegler’s concept of psychopower articulates the ways that biopower circulates through attention—that is, to inscribe the psyche. Just as the techniques of biopower that were developed in the 18th century allowed for the emergence of contemporary capitalism, the techniques of psychopower are currently being developed and represent similar techniques and objectives applied specifically to the psychic apparatus in the digital milieu (Taking Care 103). Objectives that are, according to Stiegler, fueled by market forces that hold the development of psychotechnologies as their central concern. According to Stiegler, the model of an “attention economy,” where attention is the scarce resource does not so much produce an emphasis on rhetoric or rhetoricians as the new economists, rather it persuades corporations to create and employ methods of attention-capture:

   Businesses must now be attention-capture mechanisms for all their products and means of distribution, because only a ‘limited amount of attention is available’—as if attention were a fluid whose volume and pressure could somehow be measured; as if it were not the result of education as the formation of the individual as such, through interiorizing of psychotechniques crossing an organological set of connections resulting in construction and expansion of consciousness (i.e. discernment) and the critical capacity to analyze; that is, intelligence. (Taking Care 95)

The “short-circuit” affect that is attention-capture is the foreclosure of the possibility for
creating new synaptic circuits for transindividuation. The pharmacological condition of attention-capture is that it presents only the option of decoupling technics from their potential therapeutic effects, and, as a result, leaves only the operation of technics. Said differently, it removes desire and replacing it with drive. For Stiegler the answer is to develop models of human forms of attention that is at once cultivates the psychic and social faculties in a plastic brain through the writing of circuits of transindividuation. For Stiegler, this kind of development is the very basis of care. The human, in this sense, is defined by the capacities of cerebral plasticity. For Stiegler, what constitutes and distinguishes the human from inhuman is this characteristic and degree of plasticity in the neuronal structure—for a human, “plasticity is endless” as is the ability to “interiorize the circuitry of what they can exteriorize initially, as artifacts” (96). Infinitely plastic capacities warrant equally infinite systems of care and the proliferation of technologies of the self.

In this sense, care is a “becoming-pharmacological” that requires a care grounded in “techniques of the self” (159). Becoming-pharmacological, in this sense, resonates with the basis of Lanham’s rhetorical education that works to the create the public person. What is becoming-pharmacological other than the oscillation between capture and care of technics? In the idiom Lanham employs in “The ‘Q’ Question,” this is the Strong Defense of rhetoric’s value—it enables a mutually beneficial movement from private reality of the mind to the maintenance of a public reality. For Lanham, rhetoric enables the bi-stable movement between at and through, between the technics that promote an economy of stuff—the codex—to the “volatile fluff” of the computer screen (Economics 21). Ultimately, for Lanham, it is “rhetoric’s long effort to preserve both
kinds of attention, and both kinds of language, however self-contradictory in theory the effort may prove to be, attests to its final loyalty to making things happen in the world” (Electronic 189). Here it is important to note that the notion of the pharmakon makes the differences between Lanham and Stiegler becomes apparent here. For Stiegler the respective ends of bi-stable oscillation are ran through with the pharmacological condition: a capture/care dynamic of looking at as well as a capture/care dynamic of looking through. Said differently, from the perspective of the “Q” question’s Weak Defense, both philosophy as content and rhetoric as ornamentation are inherently pharmacological. If Lanham’s concern in The Electronic Word was to observe the ways in which the digital revolution could mark a return to rhetoric and rhetorical education through bi-stable oscillation, Stiegler’s work nearly two decades later works to observe the ways the digital as pharmakon—specifically the ways in which the digital have been taken up and developed by psychotechnologies—challenges the possibility of education at all.

With this in mind, revisiting Plato’s Phaedrus may prove to be useful. Just as King Thamus informs Theuth that his invention of writing has occluded his own judgment regarding writing as a memory aid, and that it, in fact, had detrimental effects on the soul of the user. We can take from the two interpretations of technics: Theuth’s notion that technics are transparent tools for use and the King’s view that technics are anything but transparent in their real effects. For Stiegler, the interaction between technics and human users creates an emergent pharmacological condition that demands an effective mediation of technic’s effects through care. For Lanham as well, the digital presents the potential for a rhetorical mediation of technics that could foster an enriched
public life. Despite the ideological differences between Stiegler and Lanham, it is possible to see how bi-stable oscillation could be a technology of care. If, through the movement between *at* and *through*, the rhetor was supposed to produce a self-reflective feedback loop between technology and its use, as such, it could be seen as a system of care. Systems which, I argue, demonstrate three properties: first, that care is a particular kind of attention that acts as an *interface* between the psychic and collective individuation; second, that care dissolves the producer/consumer binary through *contribution* or contributory work; and, third, care is *ontological* in that it reverses the hierarchy of *knowing* and *being* that emerged through the Delphic dictum to “know thyself” as explored in Michel Foucault’s later work on caring for the self. As such, care is an ethos of responsibility towards the pharmakon of technics. That is, as Alexander Galloway notes, “[t]hrough care, one can maintain a responsible balance between the pharmacological teeter-totter; between life and death, poison and cure; between the corruption of the psyche and the cultivation of the psyche” (*French Theory Today* 17).

Further, as Stiegler observes in *Taking Care of the Youth*:

> To take care, to cultivate, is to dedicate oneself to a cult, to believe there is something better: the *non-inhuman* par excellence, both in its projection to the level of ideas (consistencies) and in that this ‘better’ *must* come. This is exactly the *ēthos* for which techniques of the self are required; to take care is to know that since there is a “better,” there is a “worse,” and that it *must* be combated… (179)

One way to combat the pharmacological negative of capture is to compose therapeutic networks of care through contemporary digital technologies. Such networks would be
inherently rhizomatic in their structure, associating and re-associating in often unpredictable ways. While it would be impossible to design a network of care with predictable sets of outcomes, it is possible to create the conditions of possibility for such networks to emerge. In this way, Jeff Rice’s argument for English studies to focus on the composition of networks is an prescient call.

**English Studies as Networks of Care**

Within the context of English Studies, Jeff Rice has looked at these questions as a way to potentially move the disciplinary object of English studies from *writing* to *networks*. In “Networks and New Media” (2006), Rice notes that networks “foreground the role connectivity plays in content management, information organization, and information production in explicit and implicit ways” (128). As such, by reorienting College English toward the network as the dominant metaphor, we could begin to think through and make explicit the rhetoric of associations and connections that make up how we work and play in contemporary life. For Rice, networks are the literal and figurative spaces of connectivity that are both ideological and technological and allow “information, people, places, and other items to establish a variety of relationships that previous spaces or ideologies of space (print being the dominant model) did not allow” (128). The spatial affordances of the digital network offer, for Rice, a way to reinvigorate English studies for the twenty-first century. In this way, the teaching of English would move from the rhetoric of print, that is how print modalities persuade English departments and consequently student-writers towards maintaining a “fixed point of view through a singular notion of writing as static, fixed, and individually composted (typically via the
essay or the exam), taking place in a unified realm of thought deemed 'English’’ (129), towards a rhetoric of new media modalities emphasizing connection and linkage. Print, and the always-present “space of the page” are seemingly and irrevocably tethered to the individual author with a fixed identity working alone and aiming to express a singly coherent and unified idea or argument (130).

On the other hand, new media's space of the screen insists on the possibilities of dynamic connections and linkages shifting cultural registers and significance through mixing and remixing “those connections that move from popular culture to the university, form geography to politics, from literature to film, from theory to theory, form celebrity to non-celebrity, from city to classroom, from the Web into our daily lives, from writing to writing” (132). I would argue that Rice's call for English studies to move from its continued focus on literary texts towards media is a call for the development of a rhetoric for mnemotechnologies—the techniques and materials used not only to externalize memory through recording and production, but their affective comportments when consumed and engaged. Such a disciplinary object would view, like Stiegler, the foundational importance of rhetoric, and the explicit teaching of rhetoric as a psychotechnique of care cultivating an awareness of pharmacological relations. In the chapter that follows, I attempt to assert such careful potentials through three digital objects: first, Stephen Duncombe’s Open Utopia project, which attempts to create a digital space to reimagine both More’s text and utopia itself; second, two wiki-based composition courses I taught at the University of South Carolina; and, third, the potentials for care in machine grading software developed by LightSIDE Labs. Each example presents textual interactions—a literary text as community, collaboratively
composed wiki-texts, and the assessment of student texts by machine graders—that work to demonstrate potentials for an English studies reoriented towards text as network.
CHAPTER 5

CAREFUL PEDAGOGIES

In the previous three chapters I attempted to provide a theoretical foundation for reorienting the disciplinary object of composition studies towards attention. As discussed in the second chapter, this would necessarily entail a rekindling of the relationship between cognitive science and composition studies that was once so productive in the discipline. Chapter two traces this scholarly history beginning with the famous National Council of Teachers of English report chaired by Richard Braddock in 1963 and ending with Margaret Syverson’s more recent work on distributed cognition and composition, *The Wealth of Reality: An Ecology of Composition* (1999). While decidedly not the beginning of cognitive rhetoric, the Braddock report does mark an early attempt to study writing instruction empirically and, for this reason, is often cited as the first formal study of writing instruction in the United States. While never without its critics, empirical orientations to the study of writing reached an impasse in composition studies with the coming of the social turn and increasing skepticism towards claims of scientific validity. In this climate, knowledge was said to be highly situated, localized, and contextual; in other words, the critical distance necessary for the observer to say anything conclusive about the observed was increasingly problematic and discountable. In short order, the social turn brought with it a scholarly dilemma for those researching cognitive rhetoric. In order to open a space for a return to cognitive rhetoric, the second chapter turns
towards science studies, specifically to the work of Bruno Latour.

For Latour, many scholars identified with the social-constructivist critique of science prematurely ended their analysis. That is, they simply did not go far enough into the facts they were investigating. Rather than recognizing the inherent sociality of scientific research and, from there, mounting arguments against science as naïve realism, these critical projects ended with social-construction as a way to dismantle claims towards the natural and privilege the social. According to Latour, the next step for critique is to work from a network orientation in order to articulate ways that both the natural and the social are generated from relations. The second chapter argues that Latour’s notion of a “second empiricism” presents a way for composition studies to once again take up and make use of a cognitive science of writing—a move necessary to begin thinking through the myriad ways that attention itself can said to be composed by and between relations of actors—cognitive, technological, and environmental.

These relations continue to be investigated in chapter three, through recent articulations of neurorhetorics and by theorizing the material networks of the brain and its plasticity. While Latour’s work provides a productive way to envision the relationship between scientific values and humanistic ways of knowing, the third chapter picks up current conversations in rhetorical theory that are attempting to do just this—most notably, the recent attempts to define the relationship between persuasion, neuroscientific discourse, and the material brain. Such neurorhetorical orientations look at both the rhetoric of neuroscience and the inherent rhetoric of neurobiology itself through the suasive force of neurochemical processes (Jack 2010; Pruchnic 2008). As such, it is a discourse that points us towards the entanglement of the social and the natural via
dynamically plastic neuronal networks. Simply put, the environments human beings interact with work to *write* the brain in a way that is—at some level—analogous to how reverberating sound waves write themselves into vinyl when making a gramophone record or the arrangement of magnetic particles in order to record information. Much like these analogies to physical media, the plasticity of the brain enables both the ability of environmental imprints to occur—a process we may more generally refer to as *learning*.

The third chapter takes up Catherine Malabou’s discussion of these neuronal processes in her recent work on plasticity. Malabou traces the concept to the Greek term, *plassein*, meaning both “to model” and “to mold,” through Hegel’s *oeuvre* to contemporary neuroscience. The plastic properties of the brain—both the openness to change, and a simultaneous resistance to change—ensure that the brain can be molded by the world, but also that it can give form to the world in return. For Malabou, this “feedback loop” of openness and resistance to form is coupled with a third property of plastic: plastic as plastic explosive. This third property of plastic, unlike the other two, is resistant to the very idea of form itself and seeks to destroy form through explosion. The third chapter takes up Malabou’s concept as both informative for neurorhetorics and for thinking through the environment’s role in the forming, modeling, and exploding of the composition of attention.

The fourth chapter continues an analysis of attention, particularly the ways in which the digital milieu is said to explode attention, via Bernard Stiegler’s work on the pharmacological condition. Taking up the notion of *pharmaka* from Jacques Derrida’s work on the concept in “Plato’s Pharmacy,” Stiegler argues that every technology can said to be a *pharmakon*—both poison and cure—as it explodes and/or cultivates attention.
in particular ways. In this way, the pharmakon places every user in a pharmacological dilemma that is altogether an ethical question at every turn. Stiegler’s pharmacological analysis of our contemporary digital milieu shows that it is attention itself that is threatened in the exchange. According to Stiegler, digital technologies currently ask that we make a choice between the *capture* and *care* of attention. This affective capture of attention non-metaphorically “short-circuits” the long-chain retentions consist of generational transmissions and are the center of formal education for Stiegler. As such, intergenerational retentions are necessary for the processes of enculturation.

The *urgency* of the contemporary pharmacological dilemma can be seen throughout much of Stiegler’s recent work. To demonstrate this urgency, Stiegler notes that the cigarette—an easily recognized pharmakon to be sure—is indicative of all technical pharmaka as they all have a poisonous dimension resulting in addiction, sickness, and death. For Stiegler, putting cigarettes on a list with computers and cellular phones demonstrates that the pharmacological condition is more than “simple alienation and gives the term ‘capture’ its urgency” (*Taking Care* 161). Further, according to Stiegler,

> *Attentional deficiencies* brought about by psychotechnical attention capture, whose current result is an immense psychological, affective, cultural, economic, and social disaster, and has led to the weakening and increasing fragility of social linkages that at this point are capable only of
engendering generalized insecurity and immense doubts about the future condition of all intergenerational relations. (*Taking Care* 58)

From this we can begin to both understand Stiegler’s notion of capture—as it exists as a relation between contemporary capital, digital media, and the neurochemical processes and the sense of urgency that Stiegler attaches to it. Capture, or what Stiegler also refers to as a *diseconomy of attention*, is a particular way that digital environments write themselves into the plasticity of the brain and, as a result, limit future learning capabilities and capacities for sustained attention.

Stiegler’s 2012 seminars with the *Ecole de Philosophie d’Epineuil-le-Fleuriel* examined Nicholas Carr’s *The Shallows: What the Internet is doing to Our Brains* (2011) in light of a pharmacological analysis of attention and digital media. Looked at as such, Carr’s narrative can be read as a memoir of capture. This is apparent from Carr’s opening lamentation of a perceived disruption in his capacity for sustained attention:

> Over the last few years I've had an uncomfortable sense that someone, or something, has been tinkering with my brain, remapping the neural circuitry … I feel it most strongly when I'm reading. I used to find it easy to immerse myself in a book … That's rarely the case anymore. Now my concentration starts to drift after a page or two. I get fidgety, lose the thread, begin looking for something else to do. I feel like I'm always dragging my wayward brain back to the text. The deep reading that used to come naturally has become a struggle. (6)

Similar to *The Atlantic* article that initiated the book project, here Carr reflects on the pharmakon of the Internet. As can be gleaned from both titles, Carr’s work inquires into
the extent that our relationship with new media, particularly our habits of reading, have altered how we think. According to Carr’s anecdotal evidence, online interaction can drastically undermine our ability for sustained attention and contemplative thought. According to Carr, today we are reading quantifiably more volume, but the quality of our reading has been eviscerated. Citing the work of developmental psychologist Maryanne Wolf, Carr notes that when reading online “Our ability to interpret text, to make the rich mental connections that form when we read deeply and without distraction, remains largely disengaged” (“Is Google” 58). In Stiegler’s idiom, such connections are necessary to foster and care for the generational transmissions of retention needed for culture as currently understood and experienced.

As discussed in the fourth chapter, care is a particular attentional form that oscillates on three related fulcrums simultaneously: the interfacial, the contributory, and the structural. Technologies of care must bring attention towards the recognition that individual psychic development is always already social and vice versa. As such, it works as an interface between the collective and individual operations taking place in transindividuation. Technologies of care must also be inherently contributory, working to collapse the distinction between producer and consumer, as users are always both simultaneously. And, finally, care in this way must work to reverse and collapse the structural hierarchy between knowledge and care. In other words, there is a shift needed to reorder epistemology along decidedly ontological lines: to know is to care and to care is to know.

With these three analytics in mind, this chapter attempts to bring the theoretical discussions of the previous three chapters back towards composition studies and
pedagogy. Similarly, it also works to provide an analytics of care demonstrated through three digital objects: Stephen Duncomb’s Open Utopia project, a digital edition which aims to provide a space to interact with, remix, and modify Thomas More’s 1556 text, Utopia; a wiki-based composition assignment revolving around the democratic potentials of digital writing environments; and, third, the speculative and nonhuman future of care in writing instruction through an investigation of automated assessment software.

The Retentional Economy of The Open Utopia

In “Low-Fidelity in High-Definition: Speculations on Rhetorical Editions,” Casey Boyle makes a distinction between the digital editions traditionally associated with the digital humanities and digital editions that could mobilize rhetorical potentials in different ways. The former, which Boyle refers to as critical literary editions, emphasize textual authenticity and aim to collect, preserve, and disseminate an authoritative text or texts through the affordances of digital networks. The latter, which Boyle refers to as rhetorical editions, would not solely be premised upon a version of textual authenticity—as rhetoricians are often “not interested in what a text is”—rather it is premised upon “what a text does” (Boyle), the kinds of novel discourse and networks potentially produced. Such a move is inherently speculative as we simply cannot forecast the effects of a text reliably enough to predict exact outcomes. Whereas critical literary editions trace knowledge around a particular corpus, rhetorical editions aim “[t]o build knowledge and not simply trace it. To invent as a way of knowing” (Boyle). Further, rather than maintaining a fidelity to a set of authoritative texts, a rhetorical edition would invite multiple networks to coalesce around a given text in order to respond, extend, and affect
how that text is rhetorically mobilized. As Boyle notes,

…a rhetorical edition would be compelled to ask the question: in what ways do secondary texts and tertiary responses influence the re-creation of a primary text(s)? Thus, the goal for any *rhetorical edition* would not be to capture and preserve a faithful text but to provide environments that construct and reconstruct texts as dynamic situations.

The difference between *critical* and *rhetorical* editions, I would argue, demonstrates the difference between epistemological and ontological orientations towards composition.

The use of rhetorical editions in the writing classroom would highlight these differences as well as the difference between instrumentalist and ecological approaches to textual production. Much like Cooper and Syverson have argued, the condition of writing’s possibility is only through such complex sets of relations. The contributory and editorial properties of online writing environments based on rhetorical editions would emphasize an *economics of contribution*—playing on the increasingly indistinct lines between consumer and producer. In what follows, I would like to a recent project, *The Open Utopia*, as a rhetorical edition.

Stephen Duncombe’s *The Open Utopia* project aims to be the first free, complete, and completely accessible digital edition of Thomas More’s *Utopia*. According to the project’s homepage, by doing this *Open Utopia* will honor the “primary precept of *Utopia* itself: that all property is common property.” The “Open” in the project’s title refers to the radical openness—to reading, copying, and remixing—that is the project’s purpose. For Duncombe, twenty-first century digital technologies enable the book to become much more than a static codex. Rather, the book can be reimagined as a
distributed assemblage spanning several sites and modalities. Towards this end, Duncombe’s reworking of More’s *Utopia* presents not only the standard text and audio files of the texts read aloud, but also a community discussing the book via The Institute of the Future of the Book’s *SocialBook* platform, a user-generated gallery of visual representations of *Utopia* and, finally, a modifiable wiki-based platform that asks contributors to rewrite and remix *Utopia* together. Such a project represents an experiment in scholarship and pushes material dynamics of the book itself.

Beyond the project as an aggregated series of digital artifacts, the project is meant to instruct users on how such textual practices may inform larger cultural and ethical practices. That is, it is meant to mobilize and foster a transindividuating *care* towards the collective domain. As Duncombe notes in the introduction to the digital edition: “It’s a text that instructs us how to approach texts, be they literary or political, in an open manner: open to criticism, open to participation, open to modification, and open to recreation.” In so doing, I argue, *Open Utopia* represents a step in digital rhetoric and multimodal composition towards response. In the past, computers and writing scholarship focused on how emerging technologies empower users towards democratic potentials as autonomous rational human actors working through digital media. I would argue that a *responsible* orientation towards technology would locate human agency within a conflux of forces and sites, human and non-human. In this way, it is inline with Marilyn Cooper’s call that, “[w]hat we need is not a pedagogy of empowerment, but a pedagogy of responsibility,” and further, “[r]hetorical agency is a big responsibility. It means being responsible for oneself, for others, and the common world we construct together” (443-444). Experiments like *The Open Utopia* project have immense potential for how writing
instructors assign readings and how students can respond to those texts. Further, it is representative of new relationships users can generate in online reading and writing environments to create new attentional forms that reorient digital projects towards care.

Through both the SocialBook and MediaWiki platforms of Open Utopia, users are invited to contribute to the More’s Utopia. The SocialBook software allows users to read a conventional digital edition of More’s work singling out moments from the text to inquire and generate discussion. Each highlighted text becoming a thread, much like in an asynchronous discussion forum, that other users can see, read, and respond. In this way, Open Utopia demonstrates how social reading platforms both revitalize the longstanding scholarly tradition of marginalia and work towards making that tradition a social practice in digital space. Opening Open Utopia within the SocialBook platform, readers are prompted to do one of three things: begin a new group, begin reading the general group’s edition, or share. The first option gives writing instructors a closed space from which to conduct course readings and discussions without a more general public readership allowed to view or participate. Outside of the context of More’s Utopia, the value of having the ability to upload a text, invite readers to collectively begin annotating and discussing the work should be immediately apparent for teachers of writing. The second option, allows readers to join hundreds of others in their collective reading and discussion of Utopia. Further, the comments and discussion functions have full social media integration that allow users to simultaneously post discussion replies and questions to other networks outside of the SocialBook platform (i.e. Facebook, Twitter, and Google+). In this way, the share functionality of Open Utopia presents users with opportunities for the kind of textual cross-pollinations inhabited by what Rice discusses as the future of
College English. SocialBook presents exactly the kind of “information space” to which users can connect their own networks and sets of relations and from which can create new linkages. *Open Utopia*, like the name suggests is an “open space constructed out of connections where multiple writers engaging within multiple ideas in multiple media at multiple moments function” (Rice 130). Further, it resists the properties and tendencies of the individual page to keep user-readers separate—from one another, from other media, from other ideas, other networks—rather it invites a kind of *socialization* that not only includes people, but also technologies, materials, and information (Rice 131).

What user-readers can gather from this particular edition of More’s *Utopia* is not simply a working knowledge of the text—its historical context and effects—but how the fluctuation of ideas and texts circulate rhetorically in contemporary networked ecologies. It presents an interface from which users can enact a variety of individuating practices and, as such, highlights Collin Gifford Brooke’s notion of rhetoric as ecologies of practice. Inherent in the design of the project is an openness to the rhetorical possibilities introduced with each new user and each new use. In fact, the project’s success depends upon the engagement of users with the text, not simply to engage an authoritative digital version of *Utopia*, but to engage More’s text, the texts of other users, and the interface itself. As Brooke observes concerning the ecologies of practice enacted by interfacing digital space,

> Ecologically, practice includes all of the “available means” and our decisions regarding which of them to pursue. In the case of interfaces, this ecology also includes not only those practices involved in the production of a particular interface, but those made possible by it. The ability to select
books based on the relevance of aggregated user data, for instance, is part of the ecology of practice at Amazon (and many other sites). But it is also important to acknowledge those practices that may be unintended—users may take up and repurpose interfaces, expanding their ecology of practice beyond a designer’s intentions. (49)

*Open Utopia* is premised on such rhetorical repurposing as users work to produce its content. In this way, *Open Utopia* gives users an opportunity to practice what Richard Lanham refers to as a proper rhetorical education in a contemporary context; it not only trains users in the skills necessary to create and sustain a public, but also it invites a recursive awareness of how users are simultaneously generating their public *selves* in digital space—the very condition of possibility for the appearance of a public at all.

In Stiegler’s idiom, SocialBook presents users with digital space as retentional economy as it interfaces between the private and public—the individual and collective psyche. For Stiegler, just as it was for Simondon, such interfaces are necessary for transindividuation. By using More’s *Utopia*, specifically, users of this SocialBook are engaging with the intergenerational retentions necessary for transindividuation. From Stiegler’s perspective, More’s text is valuable simply because it requires *work*. Work stemming from not only the inhibitory linguistic difficulties, but also from the historical accretions of *Utopia*—the previously layered networks having been enmeshed in the text for generations. This “work” makes More’s text an *object* of attention as it elicits desire and enables a libidinal economy. In this way, the value of a complex text is not solely due to the language or difficult ideas expressed, but in its ability to produce *mystery*. This, for Stiegler, is behind all mystagogic traditions beginning with the ancient Greek mystery
schools that coevolved with rhetorical *paideia* and the tradition of rhetoric. In this sense, mystery is produced by a necessarily withdrawing object demanding attention and enabling the transindividuating circuits necessary for education. But, to be sure,

This does not mean, however, that the mysterious *object* is miraculous or supernatural; it means that the object makes mystery, produces mystery, and in order to become accessible, requires initiatory, mystagogic, or esoteric discourse—a discipline involving practices of the self. (*Taking Care* 169)

Further, discourse with others in the community surrounding *Open Utopia* also provides and encourages a return to the text in order to read it again in light of ongoing dialogue and reconsideration. Such movements are nothing new, in fact, dialectically progressive reading habits as a practice of self may be the hallmark practice of phenomenology. With the advent of digital reading environments, however, an explicit material record can be kept.

In “Ethics and ‘Bad Writing’: Dialectics, Reading, and Affective Pedagogy” (2003), Daniel L. Smith notes that the “theoretically dense writing of [G.W. F. Hegel, Theodor Adorno, and Fredric Jameson] suggests ways of making the teaching and learning of reading and writing an exploration into the practical realm of ethics via the dynamics of *affect*” (526). As an invitation to engage alterity, reading—whether More’s original text or a remixed wiki-based version of *Utopia*—demands a response and the composition of a self that holds the capacity to perform such a response. Further, the dynamics of reception and response that compose composition present the condition for an emergence and articulation of an ethics for both. If made salient and universalized,
such an ethics could be remobilized and foreclose the possibility of the very alterity that an ethical comportment is meant to engage. Necessarily then, an ethics of reception and response, such as I have been attempting to articulate through the conceptual development of care, must be recognized as contingent upon situated rhetorical circumstances. Similarly, the reading and writing practices used in our classrooms should be designed to create the conditions for ethical response while resisting the need to articulate exactly how that response should emerge. As Smith notes,

the very spirit of ethics that such an affective pedagogy embraces disallows any formulas of teaching or curricula formation. This is because the ethics being discussed here is predicated on the idea that ethical response requires responding to the specificity of concrete situations with consideration of one's capacities and the systems of affects that constitute the macro- and micropolitics of spaces of discourse and practice in which one is responding. One learns to teach affectively by experimenting with how to do it and watching others do the same (over time, so that one has a "feel" for the class's affective ecology and how it emerged). (547)

Models for this can been seen in digital texts—such as the Open Utopia project—that emerge over time through the rhetorical relations of users, technologies, and texts. More’s Utopia is not “the point” of the Open Utopia project, though it does presents an object around which these others can coalesce. In this sense, the particular configuration of relations expressed through Open Utopia would be impossible without More’s text, but its teleological necessity is reduced through the emergence of relations produced.

This is particularly the case with Open Utopia’s wiki-based platform, Wikitopia.
While both the digital edition and the SocialBook edition of *Utopia* both adhere to a fidelity of the historical text, the wiki-based iteration is faithful to the historical text in name only. While not scientific in its aim, *Wikitopia* is an example of a digital text that functions through “linking the academic and scientific research of actors who are not themselves professional researchers” (Stiegler “Relational Ecology” 17). Such texts are, as Stiegler observes, the potential future of academic research as they present a model of scholarly research *as community* that both highlights the ecological and distributed nature of all research and is, more importantly, inclusive of a non-academic public. In this way, the contestation of ideas and collaborative dynamics of knowledge production, so often touted as the democratic potentials of digital space, are only made possible in relation to the non-human presence of specific technological actors—in this case the MediaWiki software that powers *Wikitopia* and the individual networked computers. While *Wikitopia* is unique in many regards, compositionists have been exploring the possibilities of wiki-based writing for some time. In the following, I would like to present a specific course design as a failed attempt to facilitate the ethics of response indicative of systems of care.

**Wiki Writing, Collaboration, and Care**

A decade ago, in a 2003 issue of *Computers and Composition*, Mike Palmquist observed that wikis would soon be playing an important role in many writing programs across the country. Citing the exception of Texas A&M University at Corpus Christi, Palmquist argued that writing programs had yet to realize the potentials of wikis to offer a collaborative environment and “support the formation of writing communities” (407). For Palmquist, wikis were indicative of new technologies that have
created new possibilities, including new teaching and learning goals. Writing for the Web, designing documents in ways the typewriter cannot support, understanding the discourses of online communities, and recognizing the rhetorical contexts students encounter as they engage in those discourses (408)

As such, for Palmquist, wikis fulfilled and made visible many of the ideals that collaborative pedagogues have been articulating for years. Given the historical context—remember that Wikipedia had only been online for two years, and it would be another couple of years before the free and simple wikis that many of us have adopted in our own composition courses would come online—Palmquist’s claim seems bold, if not prescient. Rather than questioning how, and to what extent, writing programs have incorporated wikis in the intervening ten years, what interests me here is this notion of support and the ease to which the visibility and quantifiability of student activity on wikis—and Web 2.0 applications more generally—allows for an easy elision between the technological support for a writing community and the formation of the community itself. That is to say, what appears on the screen to be evidence of collaborative engagement, inclusion, deliberation, and social knowledge building can often obscure telling lacks of personal investment. With this in mind, the use of wikis in composition pedagogy force the writing instructor onto the grounds of a quarter century year old exchange so foundational to composition studies, the debate between Kenneth Bruffee and John Trimbur.

Heavily influenced by Richard Rorty and Thomas Kuhn, Bruffee’s notions of collaborative decision-making and collective consensus-based production of knowledge were countered by John Trimbur who sought a conflict-oriented notion of consensus—
premised on difference. The emphasis on collaboration in Bruffee’s work was largely influenced by Rorty’s notion of “socially justifying belief” in which

We socially justify belief when we explain to others why one way of understanding how the world hangs together seems to us preferable to other ways of understanding it. We establish knowledge or justify belief collaboratively by challenging each other's biases and presuppositions; by negotiating collectively toward new paradigms of perception, thought, feeling, and expression; and by joining larger, more experienced communities of knowledgeable peers through assenting to those communities' interests, values, language, and paradigms of perception and thought. ("Collaborative Learning" 646)

Thus, Bruffee privileges conversation’s role in the generation of consensus. For John Trimbur, Bruffee’s notion of consensus is problematic as writing courses reliant on this model of collaborative learning and consensus may marginalize alterity and difference. As I found out in my own wiki-based writing course, the distinction between when a knowledge community assents to another community’s interests and when it simply concedes is a crucial one. To this end, John Trimbur’s work has focused on the political and ethical implications of collaborative models of learning that can inform collaborative models of engagement for writing instruction. In many ways, Trimbur introduces collaborative engagements premised upon contributory notions of care rather than a consensus-based community of knowledge producers. If this is the case, an argument can be made that Bruffee’s socially collaborative model of knowledge production—while
premised upon the social—elided the individual psychic investments needed to enact circuits of individuation.

Trimbur’s “Consensus and Difference in Collaborative Learning” (1989) takes Bruffee to task for his willingness to “overvalue social practices and thus to deny the primacy of individual consciousness in creating knowledge” (603). Trimbur argues that we cannot simply abandon the value of consensus, but that we must work to broaden its practice within the composition classroom. In effect, by beginning with alterity, Trimbur reorients collaborative pedagogies around dissensus rather than consensus. This, according to Trimbur, makes consensus a pedagogically viable form for identifying larger social power dynamics, recognizing who is and who is not allowed to generate knowledge within these dynamics. Consensus as a heuristic for identifying difference is a radically different conception than Bruffee’s model allows. According to Trimbur, the focus of consensus-based pedagogies on agreement needs to be reevaluated in order to focus on the productive nature of conflict itself rather than its resolution (608). With some difficulty wiki-based text assignments can provide writing instructors with a way to “build-in” the kind of generative conflict and consensus-as-heuristic that Trimbur discusses, I would argue that the course design itself must develop ways for individual students to gain a sense of their emerging rhetorical agency within the course. That is, individual students should have the ability to locate themselves in relation to the ideas and discourses that makes up the grounds for the course. But how do we, as writing teachers, account for such an agency and, more importantly, perhaps, what pedagogies are available to us to foster this agency and its appropriate use in composition courses?
A wiki-based course I co-designed and taught, for example, failed precisely because individual students were unable to properly respond to texts assigned in class or to each other in the final wiki-project. Further, my reliance on static concepts—of collaboration, of democracy, of dialogue—foreclosed the emergence of an ethics situated within the context of responses in that particular course. This failure was most acutely demonstrated in the wiki-based discussion forums that were set up to generate the critical interaction I felt was needed for a consensus-driven wiki-text. However, the stakes of this failure allow me to demonstrate how Gregory Ulmer’s recent work towards affective experiences could remake the class to better foster both individual and collective rhetorical capacities for care.

In the spring of 2009, a colleague and I piloted a second-semester freshman research and rhetoric course at the University of South Carolina that aimed to explore the deliberative affordances of wikis. Centered on the theme of “democracy and education,” students read texts that attempted to access and complicate the relationship between public engagement and formal education. In a gesture to both the problem and promise of online civic engagement in digital spaces, we called our course “De/liberative Democracy.” Operating under the premise that, if allowed, students could arrive at substantial research questions and engage those questions critically and collectively, we proceeded to assign a final wiki project to over 80 students split amongst four sections of English 102. The assignment asked students to collectively review the texts we had been reading all semester and suss out—through asynchronous wiki-based discussion forums—some of the “big questions” the texts were asking. Once questions emerged, students were asked to engage one another in discussions and research with the goal of
working towards a collaborative thesis-driven expository essay. So, for instance, after reading and discussing John Dewey, one group arrived at the question: “What kind of education does a functioning democracy require?” Similarly, another group decided to focus on the short selections from Michel Foucault’s *Discipline and Punish* we had discussed and asked: “Are state-sponsored surveillance techniques appropriate in a democratic government?” A related question, based again on the Foucault reading, asked “What constitutes the difference between being a citizen and being— in Foucault’s words—a ‘docile body’?” Just like an entry in Wikipedia—the students’ primary genre reference for this assignment, particularly since we were running MediaWiki, the wiki software that runs Wikipedia—students produced texts containing a main article, which presents the thesis-driven essay, along with links to further pages with pertinent biographical information and important terms that would require discussion and definition. The success of each individual essay, and the success of the class itself, hinged on students generating the kind of critical interaction on discussion forums that would allow for a well-reasoned and arguably collaborative essay.

In her 2008 article, “Teaching with Wikis: Towards a Networked Pedagogy,” Rebecca Wilson Lundin argues that wikis offer a productive framework from which compositionists can reexamine long held assumptions concerning the potentials for a “networked pedagogy” and the very reasons why writing instructors incorporate emerging technologies into their courses at all. To briefly outline Lundin’s argument, wikis allow composition instructors the ability reexamine four areas of increasing interest in a new light: new media writing, collaboration, online authority, and critical interaction. The first simply states that wikis are an example of *new media writing*. As such, wikis
have the capability to not only present a relatively conventional expository text, as discussed in the examples above, but also incorporate and juxtapose sound, image, video, etc. which change and intensify rhetorical choice in the making of meaning. Lundin’s second point argues that wikis encourage collaboration. Wikis, of course, have the ability to be edited by multiple student users from any networked machine—at any time—thus potentially leading to the kinds of authorial redistributions available in digital spaces. The third point then, online authority, demonstrates how wikis allow for a more even distribution of authority between teachers and students, and between students and students, than do conventional classroom modes of collaborative writing. And, finally, critical interaction is meant to convey how wikis and their accompanying discussion forums give students the ability to work out ideas through deliberation and critical engagement with one another’s ideas. For Lundin, this last point is perhaps the “central justification for much wiki use in composition classes” (440). Such interaction is, after all, the foundational idea behind group work, peer reviews, workshops, and many other conventional practices of composition coursework. Web 2.0 implementations in composition are largely attempts to extend just these kinds of interactive practices with the affordances of digital space.

Much like Lundin discusses concerning her own wiki-based courses, our class had—to our increasing dismay—become a class of “lurkers.” That is, they were reading posts, but failing to engage each other in a meaningful way. Though, in the end, they had produced what appeared to be competent essays—they had not done so through the kind of critical interaction the course was designed to reach. There was little to no deliberation beyond the most obligatory interactions and niceties that decorum, even online decorum,
demands. As Lundin observes of her own students’ interactions on the wiki: “either they agree and have no constructive criticism, or they disagree and refuse to read the argument generously” (441). My colleague and I were naïve in our reliance on a particular model of inquiry-based learning—that is, we thought by giving students the ability to decide their research agenda that this would quite automatically result in the kinds of productive conflict and participatory engagement Web 2.0 proponents had promised. But, in reality, the research agenda was chosen by a vocal few while the majority of students did little more than the minimum number of required posts and edits.

With few exceptions the kind of ownership we had hoped for simply didn’t happen. Beyond simply having too many students assigned to each group, our course design had also relied too heavily on the potential of wikis and discussion forums to facilitate critical interaction without first fostering capacities for individual students to locate themselves in relation to the conversation. Throughout the semester, we had confused the course wiki, its particular material digital instantiation, with the very writing community it was meant to support. We learned that community—the writing community of Palmquist’s prediction—was not something we can necessarily point to on the screen to verify. By paying attention to a specific set of composing strategies and practices meant to foster community, we had mistaken the material practices for the sets of relations that define community. While that relation may leave traces on the discussion forums and wikis at the center of our course design, community is a distributed relation and takes place across multiple sites that instructors may not have access to. In this light, I would argue, that community emerges from a collective enactment of unique and affective histories—histories that instructors may hope to access and facilitate but can
never guarantee beforehand.

In a recent work, *Avatar Emergency* (2012), Gregory Ulmer refers to such affective histories as *experience ontologies* inscribed on the memory of individual students. As such, any viable collaborative composition must resonate with individual students and allow for the intuitive expression of experience ontologies. According to Ulmer,

Inquiry is conducted in at least two modalities: the high focus of specific questions, guided by methodological presuppositions, and low focus browsing, relying on intuition and associative or lateral thinking. Literate schooling teachers the former and assumes the latter. Intuition is actually the default mode, in research and quotidian thought alike, in conditions of massive complexity with rich redundancy in the information. (51)

While our wiki-based class attempted to have students direct their own research agenda, it was often guided in particular directions by a number of design and curricular choices. For instance, the images on the course website were overly representative of particular democratic ideals. Similarly, the texts chosen were meant to generate particular kinds of questions in particular ways. In many ways, the course captured student attention due, in part, to the pedagogical choices and the institutional culture obligating their capacities be directed in specific ways, but it did little to develop and sustain the careful responsibility the course was supposedly was designed for.

Ulmer’s experience ontology is helpful in this regard as the primary memorial ontologies Ulmer discusses are needed to ground and vitalize the secondary operations of the rational and deliberative modes of discourse we expected from our course wiki. In
Ulmerian vernacular, we were attempting to activate the discursive modalities of literacy within an environment of electracy. If Ulmer is right, in order to get at the kind of critical interaction Lundin discusses, the course must first work to traverse the affective dimension of individual experience ontology. According to Ulmer:

Virtual worlds, or mixed (augmented) realities, may be designed to support experience ontology, both for pedagogy and research, by addressing the somatic markers of affective memory, enhanced by information retrieval. (54)

We can see evidence of Ulmer’s argument in Lundin’s own discussion of her wiki-based courses. As Lundin observes, the otherwise dead-in-the-water discussion boards in her writing course suddenly came alive when a student moved the conversation from the more “serious” work of the course to their favorite childhood television show. Lundin notes that this thread generated “dozens of responses” as class members began discussing their own memories of television. According to Lundin,

Although I had no problem with the nostalgic TV discussion (and actually found it helpful to the class dynamic—the students relaxed a bit and acted more familiar with one another afterwards), I had hoped that a broader range of entries would spark similar interest and develop into debate. Most wiki posts, however, went conspicuously un-commented on and un-interacted with, particularly those dealing with serious or controversial subjects. (441)

The experience ontologies enacted by playful discussions of childhood television generated the kind of spontaneous and engaged community Lundin had hoped for all
along. The problem, of course, is such discussions were excluded from the “real work” of
the course and, for Lundin, largely outside of the course’s relative success or failure.
While it may be easy to dismiss this as a bit of nostalgic fun, or a relatively harmless
detour from the course, such moments of emergence may point towards the potentials for
the kind of play-based pedagogy of care that digital environments such as wikis are
capable of sustaining. The challenge, for writing instructors, is either to find a way to go
through, or perhaps harness the affective energy of experience ontology and move it
towards more critical and deliberative interactions—or to remove the critical ideal from
the courses rubric altogether. Favoring instead the intuitive modes of reception and
production demonstrated through this kind of play.

In Ulmer’s primary example of experience ontology, the life and work of noted
architect and designer Frank Gehry, he observes the affective memorial expressions of
experience ontology throughout Gehry’s work. According to Ulmer,

one of [Gehry’s] most vivid memories was of the carp that his
grandmother would bring home live from the market. Frank loved to
watch the carp swimming in the bathtub, before it was served for Sabbath
supper. The movements of the fish are now observed in the sweeping
curved geometries of Gehry’s designs. The wide image accounts for
Gehry’s recognition of this feeling in the geometries, which he began to
use even before he had access to the computers that made them practical.

(52-53)

For Ulmer, the carp-like elements in Gehry’s design point towards the importance of the
interface. Similar to the interface of digital objects, Gehry’s buildings have both a
function in the public structural reality and in the imprint of Gehry’s own experience with carp swimming in the bathtub of his childhood home. Digital elements in interface may similarly function as “hooks or attractors” to enact experience ontologies of individual users. Thus, interface may address “potential matches in the idiosyncratic backstories of researchers, supporting browsing or low-focus inquiry” (53). Similar to Brooke’s notion of “persistence of cognition,” the images, key words, and other elements of new media encountered when reading digital texts, that leave perceptible traces or imprints on the cognitive experience of users in hyper attentive modes—or, following Ulmer, low-focus inquiry—may point to the ways which cognitive traits associated with deep attention are still active in hyper modes. The work of both Ulmer and Brooke here gestures towards a productive blurring of the distinctions between hyper and deep modes of attention and the make an argument for the effects of techno-biological relations on attention not being as deterministic as is often assumed. The development of digital systems of care premised upon contributory economies must take such insights into consideration. Reflecting on the above, when designing a second iteration of a wiki-based writing course, I was much more successful in enacting and sustaining the kind of discussion and collaboration I had hoped for.

This second course, a first-year composition course taught at the University of South Carolina in 2012, included a collaborative wiki-based essay using the free online services, Wikispaces. Using education as a theme, this course asked students to compose a collaborative auto-ethnography focused on the literate and medial practices of contemporary students. As such, students were both recognized as part of an existing community—in this case the collective student body at the University of South
Carolina—and as individual actors within that community engaging in their own literate practices. Students were asked to compose this essay in two distinct parts: first, students were to write their own literacy narratives following a collective list generated by students; and, second, students were to aggregate their individual narratives together as an archival body of research that they could then use to work in teams of researchers to construct arguments regarding the literate practices of contemporary students. Working with collaborative auto-ethnography as a qualitative methodology allowed students to combine ethnography and autobiography into their collaborative compositions. For my purposes, the model of a collaborative auto-ethnography provided a balance between the individual and collective assemblages necessary for students to incorporate their own affective relations and, in turn, use those relations as objects for reflection and collaborative research. While I can never be sure it was the difference in assignment design or the specific dynamics of the individual classes, the wiki-texts students composed in this later attempt were largely more successful and demonstrated a higher level of engagement.

Thus far, much of this chapter has been concerned with collaboration, but the agential role of non-human actors and audiences has only been hinted at. The following section discusses the potentials for care with a larger consideration towards non-human actors and the automated systems we compose with.

**Machinic Potentials of Care**

lack of response from composition scholars in regards to automated assessment of student writing. Stating that,

> It is an understatement to say that the [analysis and scoring of student essays by computer] is rapidly growing in importance at all levels of the education enterprise, and that the perspective on it has been, up to this point, dominated almost exclusively by the commercial purveyors of the product. (1)

While this may have been true at the time of their collection’s publication, in 2006, we can no longer say this is the case. Recent appeals to software developers, machine learning specialists, and data scientists to create a more supple and efficient tool capable of scoring student essays—most notably the William and Flora Hewlett Foundation’s Automated Student Assessment Prize (ASAP), which awarded $100,000 to three teams in 2012 along with a portion of the $330 million dollars allotted to writing assessment as part of the United States Department of Education’s “Race to the Top” initiative—have spurred strong reactions from English professionals. Reactions that are more often than not deeply skeptical of the value of machine assessment to account for context, rhetorical nuance, meaningful content, well-reasoned argumentation, and novel expression—that is, what most of us would likely agree are the necessary elements of “good writing.”

Just in the last year, the NCTE’s “Position Statement on Machine Scoring” (2013) along with the Professionals Against Machine Scoring of Student Essays in High-Stakes Assessment Petition Initiative—an online petition with over four thousand signatures—has brought the question of machine scoring to the fore of our disciplinary conversation. Subtitled, “Machine Scoring Fails the Test,” the NCTE’s position statement defines
writing as a “highly complex ability developed over years of practice, across a wide range of tasks and contexts, and with copious, meaningful feedback.” As such, the official position of the NCTE is that automated assessment undermines the “nature of writing, the ways students develop writing ability, and the role of the teacher in fostering that development.” This sentiment is echoed in the *Conference on College Composition and Communication*’s own “Position Statement on Teaching, Learning, and Assessing Writing in Digital Environments” (2005) that identifies machine scoring as a threat to the social nature of writing. Stating, “Because all writing is social, all writing should have human readers, regardless of the purpose of the writing” and “Writing-to-a-machine violates the essentially social nature of writing: we write to others for social purposes.” In light of what many scholars have identified as a reappearance of the question of technology through a “non-human turn” in humanities and social sciences, the sentiments of the NCTE and CCCC could not only seem to foreclose inventive possibilities of composition, but also unnecessarily restrictive in its definition of writing as a social activity conducted by autonomous human actors.

In the 2006 anthology mentioned above, Carl Whithaus invited us to step away from this “discourse of rejection” in order to consider how technologies are always thoroughly and actively integrated into the composing process—as the evaluative agency of software is pre-built into contemporary word processors. According to Whithaus, software, in practice, is largely a medium of communication and a “tool for assessment and response” (167). However, composition studies has a long history of ignoring the inventive capacities of automated composing practices reaching at least as far back as Ken Macrorie’s critical review of Ellis Page’s *The Analysis of Essays by Computer*.
(1969). For Whithaus, the fact that our day-to-day composing practices rely on automated software as a collaborative partner, but our disciplinary culture either actively ignores or openly combats technology’s role in composition, demonstrates that composition studies is in need of a “conceptual shift” (167). The shift can be articulated as moving from the dominant model currently, software as a transparent medium to be ignored, towards the view of software as a compositional tool demanding attention. According to Whithaus, “What composition studies needs is not a blanket rejection of these systems but rather data-driven studies of how these different software agents are already being used in postsecondary writing courses” (176). Further, such studies could potentially define how software actually works in the context of a composition course and how to better construct our pedagogies to account for them. Whithaus’s argument is more relevant today, I would argue, due the advent and proliferation of word processors and cloud-based collaborative composing environments.

Largely because of upswing in the interest and culture surrounding the open source movement, the inevitability of open source writing assessment software and what this could enable, urge us look again at machine reading and automated assessment. Here I would like to make a just such a gesture, more speculative and tactical than technical, in order to focus on: first, how the official rhetoric surrounding machine scoring by English professionals elides the complexity of the relationship between human and technological actors in the act of composing; second, how questions of audience and reading might be reimagined by thinking through these relations; and third, how machine scoring, if removed from the proprietary context of high stakes and standardized tests, could have a place in what scholars have recently articulated as “assessment ecologies.” Such a move
would enhance our ability to consider the possibilities for care even at this level of automation.

Bob Broad’s “More Work for Teacher? Possible Futures of Teaching Writing in the Age of Computerized Assessment” (2006) draws heavily on the distinctions between the capabilities of humans and those of computers made by Andrew Feenberg. Broad’s discussion of Feenberg’s *Critical Theory of Technology* (1991) is particularly relevant as it is in Feenberg’s work that we can trace composition’s critical orientation towards technology that privileges critically reflective modes and, ultimately, produces a kind of soft skepticism towards technological potential. According to Broad, Feenberg gestures towards “how societies might shape uses of technology for the common good as discerned through democratic processes” (226).

Similarly, Feenberg cautions against both strong technophobic and technocratic urges in the democratic project of technology’s management. As Broad notes, “[Feenberg] suggests that we stay alert to technological developments and make, as a democratic society, well-reasoned decisions regarding how to handle those developments” (226). While we—as teachers, as users of technology—are eager to express our obligations to use technology in the democratic and local ways available to us, we are less likely to recognize the role of technology in the shaping of our continually shifting definitions and orientations towards democracy, best practices, or even successful writing. The humanist orientation towards technology in Feenberg’s work sets up a relationship between technology and the human that cannot help but assume hard distinctions between the two categories and, ultimately, give the human an interventionist role.
In “The Posthuman Challenge to Andrew Feenberg” (2006), Simon Cooper notes that Feenberg’s reliance on human intervention in the face of technology will not allow him to side with many posthumanist orientations towards technology that place technology and the human in active co-production. As Cooper notes, Feenberg’s objections to posthumanist are two-fold: first, Feenberg’s critique of technology relies on human acts of democratic interventions and argues that, decentering humans as simply elements of a cyborg ontology, or as part of a network involving human and non-human actors leads to a kind of performative, where it becomes difficult to determine the quality, identity, and status of any “act.” (25)

Second, according to Cooper, Feenberg has a political objections to posthumanist theorists that give primacy to the network rather than models that allow for human intervention and technological reform. By situating human actors in a position of critical distance and ultimately choice in relation to technology, Feenberg is foundational in the establishment of the conventional response to technology from those in composition studies. Such responses, I would argue, are apparent in both the NCTE’s “Position Statement on Machine Scoring” and other popular iterations of official mandates against the automated assessment.

In a recent interview published in Composition Forum (2010), Cindy Selfe notes the field’s indebtedness to Feenberg’s critical orientation. When asked why compositionists should pay attention to the use of technology in and outside of the academy, Selfe responds that while technologies do have tendencies that “reveal or hide certain ways of being in the world,” the agency of human beings in technological systems
can influence systems for democratic potentials. Further, Selfe notes, it is “our job in such systems as humanists and teachers is use technologies in ways that can foster humanist projects and educational projects in humane ways.” According to Selfe, directed use of technology can by the same the “powerful micro-political tactics” that Feenberg discusses as an intervention working to “shape technology democratically.” Selfe’s insight here is aligned with Feenberg’s critical approach to technology that both grants technology a kind of agency and positions human actors as stewards of that agency. Selfe and Feenberg are also here aligned with Stiegler’s own post-Marxist ethico-critical approach to technology to an extent, however, the difference between the two is largely in amount not kind: Stiegler’s work, I would argue, grants technics full co-productive credit with regards to the creation of the category human while Feenberg’s does not. For Stiegler, our relationship with technology is not so easily managed through reflective use, or bottom-up political movements, but is inherently pharmacological in that human actors can never be sure that their actions are producing beneficially democratic ends or arresting democratic potentials.

Bernard Stiegler’s notion of technics, which has been increasingly taken up by many scholars working in computers and writing, holds potential for reframing the question of machine scoring in productive ways for composition. Technics—which includes everything from the most primitive tools first used by humans, to writing, to contemporary digital technologies—is, for Stiegler, the condition of human culture and thought itself. According to Ben Roberts, Stiegler’s use of technics is meant to define a particular “prosthetic relationship between the human and its ‘exteriorisation’ in matter” (5). As such, Roberts continues, technics “does not have the instrumental sense of
technology as a tool that the human makes use of but rather defines the human as no longer simply a biological being” (5). The continuous co-modification of humans and technics is such that agency—the kind necessary for gaining a critical distance from technology in order to analyze and say something meaningful—becomes much more nuanced. I would argue, along with Marilyn Cooper, that agency does not simply go away, rather we are obligated to leave the idea of an autonomous and rational actor choosing to use technologies in particular ways in favor of a distributed agency as co-“use” and co-emergence. Similarly, in How We Think: Digital Media and Contemporary Technogenesis (2012), N. Katherine Hayles notes that:

The situation is akin to a relativistic scenario of a spaceship traveling at near light speed: the clocks on board by which one might measure time dilation are themselves subject to the very phenomenon in question, so accurate measurement of dilation effects by this means is impossible.

Needed are approaches broad enough to capture the scope of the changes underway, flexible enough to adapt to changes in criteria implied by technogenetic transformations, and subtle enough to distinguish between positive and negative outcomes when the very means by which such judgments are made may themselves be in question. (81-82)

Read from the context of composition studies, the above quote gives insight into why notoriously slippery and notions of transfer and assessment are so difficult to pin down. Just as the technics develop to interpret data and assess student writing, those technics change our relationship to writing in such a way as to encourage such slippage. As Kathleen Blake Yancey and Brian M. Morrison have recently and succinctly noted
“[w]riting is changing more quickly than we can record those changes” (277). Rather than attempting to “catch up” and control technics, we need more ecological models of assessment “broad enough” and “flexible enough” to situate itself within the complexity of composing. Such models could recognize the dynamic co-production of the human and technics and—as such—would not foreclose the inventive potentials of these relations.

One such potential, I would argue, is writing for machine audiences in ways similar to those recently articulated in Byron Hawk’s notion of “Stomp Box Logic” (2012). Largely inspired by Geoffrey Sirc’s articulation of box-logic which highlights the abilities to juxtapose and remix expressions in digital environments, Hawk’s Stomp Box Logic reorients those abilities to emphasize the rhetorical capacities of non-human actors. According to Hawk, Stomp Box Logic “extends Box Logic’s primary concern with human affect and the rhetorical method of juxtaposition to a primary concern with system feedback and a rhetorical method of looping and layering.” As such, human actors are not removed from the equation, but are situated as one assembled relation amongst many in distributed rhetorical networks. Drawing an affective correlation between the responsive feedback instructors and peers give to student writing and the feedback produced by the layering of audio signals through stomp-box pedals, Hawk observes that feedback in the context of composition studies, “typically means giving a paper to another human being so they can give more written (or sometimes oral) commentary on the writing so the author can use that information to revise the text,” but the kind of feedback produced by the use of a Boss’s RC-30 Dual Loop Station Guitar Pedal, or “Stomp Box,” shows that there are “human beings aren’t the primary source of feedback, making the primary audience something other than human.” Similarly, I would argue, student writing is
continually enmeshed in a Stomp Box Logic from its inception—using the research capabilities of the database and digital archive—to its production through word processing software which, as Whithaus pointed out, is often more involved in the composing process than composition scholars would like to admit. Given Hawk’s work above, I would ask: how might composition instructors rearticulate students writing to an automated software in order to “game it” and enable potentially inventive capacities? Further, how might those the gaming of automated assessment software work to redirect student attention towards the composing process and the rhetorical choices they make? Just as the Hawk’s Stomp Box reads and interprets signals in particular ways in order to generate affective expressions, machines are capable of reading texts in particular ways that may be generative as well.

In her work, N. Katherine Hayles argues that the value of machine reading lies in the recognizing and making patterns visible to human interpretation. While Hayles discusses machine reading largely from the context of Frank Moretti’s “distant reading” and its impact on the digital humanities, her work on machine reading can be productively coupled with discussions of automated assessment software. Hayles recognizes a “self-catalyzing dynamic of digital information” at operating as our use of computers intensifies so too does the need for the kinds of algorithmic analyses they provide. Just as enormous quantities of information require machines capable of reading and interpreting this data in useful ways, the data produced must work to become readable to the machines who have access (How We Think 30). Though, Hayles argues, machine reading does anything but obviate the necessity for human reading. Contrary to responses from many composition scholars, both machine-reading and human-writing-to-
machine can be viewed from the orientation necessitating particular kinds of responses and trajectories. As Hayles rightly observes that machine reading is often “construed as pointing toward a posthuman mode of scholarship in which human interpretation takes a backseat to algorithmic processes” (30). Further, such tensions make obvious the disciplinary orientations towards either algorithmic analysis or hermeneutic textual responses, but can be reimagined as a co-productive relationship between the two.

Towards these possibilities Edward M. White’s “Afterword,” in the recent Digital Writing Assessment and Evaluation collection (2013) noted that,

Students will write to machines just as surely as they now write their SAT or AP essays to the armies of dulled readers … This is the stuff of dystopias, where cyborgs take over the world and make humans their slaves—a common enough theme in the movies. The way to keep this from happening, as these fictions instruct us, is to get there first, if possible, and enforce power over them; we need to keep HAL from taking over the universe (as he—it?—almost does in 2001: A Space Odyssey) and replacing human needs with inhuman ones.

Rather than the rhetoric of supplanting and struggle, a more ecological response would attempt to draw its focus on human and non-human relations already present in the practice of composing. What are needed are useful rubrics of evaluating to account for and assess those practices. Two recent pieces focusing on the future of assessment have initiated this undertaking.

In the first, “Addressing the Complexity of Writing Development: Toward an Ecological Model of Assessment” (2012), Elizabeth Wardle and Kevin Roozen take up
Kathleen Blake Yancey’s (199) call for models of assessment flexible enough to account for the broad complexity and distribution of composition. Summarizing Yancey’s history of assessment models in composition, Wardle and Roozen note that there have been three “waves” of assessment modalities in the field: the first wave (1950 - 1970) emphasized objectivity and testing models; the second wave (1970 - 1986) centered on holistically scored essays; and, finally, the third wave (1986 - present) focuses on assessing student portfolios that span a number of drafts and length of the course (106-107). According to Wardle and Roozen, Yancey argues that contemporary writing practices necessitate a fourth wave of assessment that can account for “students’ writing development across an expansive ecology of literate activities rather than within any single setting” (107). Such a model, according to Wardle and Roozen, would offer a “fuller, richer account of the kinds of experiences with writing that are informing students' growth as writers throughout the undergraduate years” (107). Further, this model is large enough to fold in the insights of Syverson’s work on distributed composition as it “incorporates portfolio creation, revision, and assessment over time and at multiple locations” (107). The primary contention in Wardle and Roozen’s ecological model of assessment is that a student’s literate development in specific writing courses takes place across many different literate acts often not related to the course, or even to their formal education, at all. To demonstrate what an ecological model of assessment looks like, Wardle and Roozen discuss the building of such a model at the University of Central Florida. There, among other things designed to coordinate ecological assessment models, teams of researchers are beginning to conduct longitudinal ethnographic assessment of student’s transfer of literacy-related knowledge that have researchers teaching composition courses
that include common syllabi, assignments, and assessment models to create the opportunity for individual case studies of transfer who can be interviewed and observed in multiple rhetorical situations (115). From there, researchers can begin to envision the scope of what it means to discuss transfer in the context of freshman writing instruction. Tracking the literate acts of students in this way could potentially indicate how students use what they have learned in writing courses and how that literacy-related knowledge gets folded into their practices in other rhetorical contexts.

Similar to Wardle and Roozen’s ecological assessment models, Christopher Manion and Richard Selfe’s “Sharing an Assessment Ecology: Digital Media, Wikis, and the Social Work of Knowledge” (2012) argues for the need to go beyond hierarchical and product-oriented assessment models in light of the affordances of digital technology. Wikis, in particular, because they rely on “complex, emergent context and an intentional, adaptive community of practice” (26) do not lend themselves to being assessed by conventional models. Largely informed by Syverson’s work on distributed cognition, in their design and assessment of wiki-based assignments, Manion and Selfe adopt Syverson’s “careful examination of the interrelationships among actors, artifacts, and environments as they develop over time” (27). Towards this, Manion and Selfe researched three cases for the development of an ecological assessment of wiki-based assignments: the first, an upper-level anthropology course focused on foraging societies that asked students to collaborate on wiki-based literature reviews; the second, a psychology course that asked students to write articles and create rubrics of peer evaluation for an imagined wiki-based academic journal, *Future Directions in Psychological Science*; and, third, an advanced professional writing course that had
students contribute to a wiki focused on “Exploring 21st Century Professions” (27-28). In all three cases, assessment of each wiki would be premised on first developing and elaborating on what each discipline values—their habits of thought and practice—in order to give students a criteria for assessing their own work and the work of others. In this way, assessment could be distributed among a cohort of peers who were prepared to follow common criteria. According to Manion and Selfe:

Each of the courses we have presented here gave students some control as they took up habits of thought that their instructor wanted them to learn. Students were asked to take part in assessing their and their colleagues’ work and were shown how to apply assessment throughout the term as they produced mediated wikis. But students did not begin these projects cold, thrown into the deep end and expected to swim. Each of the three instructors very carefully scaffold their subassignments to prepare students to understand the central modes of knowledge making in their fields: the kinds of questions to be explored, the preferred objects of study, the analytical lenses to be applied—all the activities involved in inquiry. (43)

Manion and Selfe argue that the affordances of wikis hold the potential for meaningful collaborative compositions, but assessment models must reflect the kind of mutability and emergent potential wikis hold. Both the assignments and assessment models should be conducive to fostering local knowledge production and community.

While ecological models of assessment stress both the distributed and the local, I would argue, such models should not foreclose the importance of non-human actors in these relations. Particularly, the role of technics in both the production and evaluation of
compositions should be explored through ecological models of assessment. Much like Brooke’s experience keeping a weblog, discussed in *Lingua Fracta*, demonstrated that his daily practice of writing a blog reoriented his daily experience in order to find bloggable experiences. Thus, such digital practices call into question the limits of specific digital interface of the blogging software. Similarly, criteria for assessment should be broad enough to include how particular technologies reorient students’ composing practices. Further frameworks are needed in order to create dynamic assessment models that would not resist the potentials of machine scoring. Particularly with regards to machine scoring, models that recognize the role of technology in distributed ecologies could incorporate automated evaluation of student writing into course objectives. With this in mind, I would argue, the first step towards practical implementation of automated assessment in writing instruction is the forming of cooperative relationships between teachers and software developers.

One company attempting to forge such relationships is LightSIDE Labs. Started by Elijah Mayfield and David Adamson at Carnegie Mellon University, LightSIDE Labs aims to localize automated assessment by putting the software in the hands of teachers and students. While the company is now proprietary, LightSIDE’s core software remains open-source and freely available. Premised on the idea that automated assessment’s negative reputation stems largely from software companies unwilling to acknowledge what writing instructors actually need and propriety software packages that cannot be tailored to the situated needs of individual courses or communities. According to the promotional material available on LightSIDE’s homepage:

Too often, machine learning is a black box. Researchers choose a set of
features and a model to train, and they get an accuracy reported back to
them by their scripts. If they’re lucky, they have a pipeline set up that
allows them to tweak that behavior and evaluate performance changes.
Actually looking at the text that’s being misclassified and thinking deeply
about why an algorithm thinks it should be labeled a certain way almost
never happens. We’re changing that.

The rhetorical shift from automated assessment to machine learning—even while
discussing the same automated processes and outcomes—suggests a co-productive role
between human learners and machinic instruction that does not foreclose the possibilities
of invention in human-machine relations. Possibilities LightSIDE continues to make a
case for amongst composition scholars and teachers.

Recent discussions taking place over the Writing Program Administrators listserv
(WPA-l) between LightSIDE’s founders and those working within composition are
beginning to change the dialogue surrounding machine scoring. Similarly, one of the
company’s founders, Elijah Mayfield presented a panel at the Computers and Writing
conference (2014) discussing how automated assessment could be reinvented. That
panel, “Automated Essay Scoring Done Right: Using LightSIDE for Feedback in
Classroom Writing,” attempted to demonstrate how LightSIDE’s software presents new
approaches to automated assessment and as a machine learning engine that, according to
their panel description, “emphasizes justifiable, content-driven score prediction and
automated scaffolding of the revision process.” By making available free open-source
software that recognizes specific needs of localized communities, LightSIDE are working
within Bernard Stiegler’s definition of a “contributory economy.” For Stiegler, such
economies are the foundation of a therapeutic digital milieu that can balance the “self-destructive” impulses of late capital that promote drive over desire, or, said another way, capture over care.

Conclusion

In 2005 Stiegler initiated *Ars Industrialis*, a collective whose aim was to define what a therapeutic of care means in the contemporary digital world. Lacking such definitions, the *Ars Industrialis* manifesto argues, the “pharmakon necessarily becomes toxic.” According to Stiegler, the toxic of effects of digital technics result in a short-circuiting of the capacities for sustained attention and a severing of intergenerational retentions necessary for public life. Gesturing towards the neoconservative revolution in the 1980’s and its effects in the intensification of speculative capitalism, *Ars Industrialis* contends that governments have largely failed to adequately intervene in industrial or economic life and accordingly:

This means that it has totally failed to assume what is its role par excellence, namely: encouraging the development of what, in technics in general, and in mnemotechnics in particular, leads to the reinforcement of society—to make of technical becoming a social future intensifying processes of individuation by inventing forms of life, that is, of *savoir-vivre*—and thus to struggle against the destructive, atomising and uncivil effects which every pharmakon also and always brings with it.

While I would argue that Stiegler’s view is extreme, I do find in his work a useful frame for reimagining a digital composition pedagogy premised on attention as an ethical
comportment. Or, said differently, simply a pedagogy premised on care. In this context, attention is understood to be the suasive effect of relations taking place through distributed sites. Rather than simply the focused will of individual human actors, attention as an emergent and distributed effect accounts for cultural and technological forces generally viewed to be outside of, or in many cases, an impediment to attention. Rather than interrupt, such forces compose attention. In Stiegler’s work, attention is the composition that enables both education and its aim: enculturation. Education, as understood conventionally and in Stiegler’s view, is impossible without gaining the capacities of response formation that rhetoric and composition is meant to transfer.

According to Iveson, Stiegler’s “genealogical understanding of the pharmacological nature of schooling” makes it possible to articulate vision of “‘the school’ as an organization for the teaching of literacy as a formulator of rational, intergenerational relations and thus as a system of care.” In the preceding pages, I have attempted to sketch the possibility for such careful attentions within the larger context of composition studies as a discipline and in individual composition courses by using examples from the Open Utopia project, my own wiki-based composition course, and future iterations of machine scoring software.

As both a text and a community, Stephen Duncombe’s Open Utopia project presents compelling approaches for incorporating common texts for writing instruction. The Future of the Book’s SocialBook platform allows Open Utopia to be both a contained community of engaged readers—responding to particular moments in the text of More’s Utopia—and continually rhizomatic in its exporting and sharing capabilities—working to draw new connections as networks from other social media outlets are
potentially formed. Conversations on the text, while beginning on the SocialBook, would be progressively shifted to other sites creating a distributed marginalia across digital space.

Similarly, the Open Utopia project’s wiki-based book, Wikitopia, allows users to respond to More’s text in a much different way: to revise, remix, and rewrite it. On the wiki, various cohorts are formed responding to More’s text in multiple ways. One group works to revise More’s text for contemporary audiences—updating references, discussing contemporary political and cultural landscapes using More’s frame—while another cohort may be employed in rewriting the text to conform to their specific community. Still another cohort may remix the text juxtaposing seemingly unrelated images and texts for novel effects. In one cohort, for instance, the presence of spam text and spam links makes for an interesting unintended commentary on the invasive techniques of hypercapitalism. In one such case, the introduction to a cohort named “Promethealand,” asks that “every community welcomes different individuals/groups since what is different always challenges and stimulates creative thinking” just as a spam link appears for advertising “Jordan heels for women.” Unintended compositions like Promethealand’s introduction work to demonstrate how compositions are always co-compositions with machines and institutions. In this case, the algorithmic processes of spambots scouring the World Wide Web found a place to write a bit of code in Wikitopia’s MediaWiki software and co-composed with human actors. While most users would simply remove the spam, it would be would be a meaningful commentary on contemporary utopic ideals to create a cohort just for spambot compositions. How might spambots write utopia? Are their contributions to the Wikitopia project just as valid, though perhaps unintended by
the space’s creators? Questions that could only be answered by providing compositional spaces that allow for the interaction of non-human actors. While spambot activity was actively removed from my own wiki-based First Year English courses focused on deliberative democracy, I could see where it would have provided a novel teaching moment to discuss the role of non-human actors in deliberative relations.

My course asked students to read a common set of texts as the foundation of productive deliberation and conflict generation. On asynchronous discussion forums, students questioned the implications of texts on their own ideas of democracy and education. While ultimately unsuccessful for many reasons, students were asked to pose difficult—and ultimately unanswerable—questions concerning the texts that were, in turn, intended to highlight rhetoric as a lived practice. Just as the success of the Open Utopia project is largely based on the free engagement of its users, these wiki-based courses failed largely because discussions were obligatory and part of the grading scaffolding of the class. Students felt uneasy discussing difficult texts in particular ways, and, as a result, discussions were often stilted. As a result, the discussion forum rarely generated the kind of deliberation asked for, and the consensus-building practices necessary for the collaborative wiki-based texts were largely absent. Students discussed and a robust wiki-based text was eventually written, but students were largely unengaged in the project as something that concerned their own roles in civil life. Revised versions of this course would work to intensify engagement by allowing students to define their own relationships to democracy and education. Working from Gregory Ulmer’s notion of experience ontology a revised version of the wiki-assignment would ask students to explore their own affective relationships with the concepts and practices associated with
Lastly, I have tried to demonstrate how hybrid companies like LightSIDE Labs are working to incorporate systems of care in automated assessment technologies. And, further, how such technologies gesture towards systems of care in non-human publics. Because LightSIDE operates simultaneously on open-source and for-profit models, they are able to incorporate feedback and development from localized institutions and tailor software to community needs. LightSIDE’s “revision assistant” can be customized to individual course contexts and, from there, attempt to provide the “instant multidimensional feedback” that makes automated assessment technologies desirable. Similarly, student feedback can be constructed from localized criteria of individual courses and, according to LightSIDE’s website, using those rubrics, begin to “identify and visualize the strength of student’s individual sentences, scaffolding their ability to make their weakest contributions more like their strongest.” In this way, LightSIDE’s software enables students to direct attention to their writing in ways they would not otherwise. Automated assessment, if taken from its largely proprietary and high-stakes contexts could provide students the opportunity to attend to their compositions in novel ways.

To return to the essay that began this project, in “Hyper and Deep Attention: The Generational Divide in Cognitive Modes” N. Katherine Hayles argues that hypermedia and the attentional forms they promote, demand more meaningfully engaged responses from educators. Here, I have attempted one such response in calling for composition studies to reorient its disciplinary object towards attention. If, as I have argued, attention is a composed assemblage taking place across many material, cultural, and conceptual
spaces at once—how might composition studies benefit twenty-first century educational paradigms by attending to these assemblages as their primary disciplinary object? And, finally, what are the ethical stakes involved in redefining attention as composition? The preceding chapters gesture towards how these questions might be addressed.
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