

Discredited Metaphors of Mind Limit Our Vision

Marilyn Middendorf

Of all teachers, teachers of writing probably have the surest insight, the closest look into the minds of their students. Most of us appreciate and try to nurture the tangled process of developing meaning out of private universes. We glimpse the unruly, outwardly chaotic jumble of our students' thoughts. We deploy diverse strategies to help our students create order, acceptable logic, appropriate voices. More than most teachers, writing teachers see the shifting, chaotic process that eventually results in "the final paper." But what happens in students' minds as they battle to "take charge" of their communications? Do we have a clue? We are certainly proud of our training, yet lately I've recognized a basic element missing in that training.

When we successfully initiate students into our current model of communication—"sender-receiver, information transfer"—we reinforce our culture's central metaphor of mind. In this essay, I want to explore the possibility that our dominant model of communication is unrealistic primarily because it is derived from a misleading metaphor of mind. Our image of our mind limits us as we approach our students and attempt to shape their communication.

Without doubt, our mental imagery controls much of what we do. When we are dealing with students' thinking, what metaphor of consciousness are we harboring? What are our cultural assumptions about consciousness? Do we, as teachers, have different assumptions from our surrounding culture? Do we have a clearer image of consciousness? After all, our business is shaping and sharpening our students' minds. What do we suppose happens in consciousness when a thought is "translated" into writing, into meaning? The cartoon image shows a light bulb shining brightly. Another common image is wheels turning. Is our understanding of consciousness no more sophisticated than this? Our central metaphor of mind is so seldom discussed in our culture or our profession that it is nearly invisible. Yet this ghostly image dictates much of what we do.

I asked several of my colleagues and students to describe their images of their own consciousness. They did better than light bulbs and wheels. After casual, open discussion, they suggested abstracted beings, like the Ghost in the Machine; the Grand Interpreter; the Central Meaner; the Homunculus (the little man who sits inside reviewing everything); I, the Decision Maker; and I, the Dictator. One suggested a disembodied Seat of Consciousness. A number (mainly students) pictured their individual consciousness as a computer, only a really big one, "like we'll have in the future." All of these images of consciousness share a

Marilyn Middendorf is Associate Professor at Embry Riddle Aeronautical University, where she teaches composition, humanities, and film; her essay on Bakhtin, first published in the Journal of Basic Writing, has been anthologized in the Landmark series.

common thread: a mysterious Someone or Something is assumed to be “in control.” In the Western world, the debate over the centuries among philosophers has been about what is IN THERE producing thoughts? Thus far, the debate has always assumed a “top down” approach. Some ill-defined “central controller” is in charge of the mental process.

Nearly all our “top down” metaphors for consciousness are similar because of our Western tradition and the historical importance of Cartesian dualism. The pressure of history makes it difficult for us to *even imagine* any reality other than dualism. Dualism is taken for granted. We embrace the mind/body split, in part, because our culture reinforces this image at nearly every turn: the spirit soars and the flesh plods along, the spirit is created by God while the flesh is made from clay, mind over matter, from dust to dust while the spirit lives on. In step with our culture, we educators harbor this metaphor of human consciousness which, it turns out, might be misleading. Our collective metaphors, mostly unexamined, may be limiting the richness of our inner lives and inhibiting our understanding of the mystery of consciousness. Recent discoveries in the “brain sciences” posit a new metaphor for consciousness, one quite contrary to our standard assumptions. Moreover, these recent discoveries in the “brain sciences” erode the mind/body hierarchy of dualism. Even worse, they ask us to accept materialism as a scientific certainty. Our wonderful minds are composed solely of physical matter.

Although we reap the vast benefits of all that science has wrought, our culture seems to coexist grudgingly and reluctantly with the “truths” posited by science. We benefit from and appreciate (not uncritically) the intellectual leadership of the scientific establishment. Scientists function almost as “priests” only before the age of science; they reveal secrets of the physical universe which only they can “see.” Typically, these scientists do not ask the general public to understand “too much” about their discoveries. Our culture and these “priests” dwell in different belief systems, almost parallel universes. One of the bedrock assumptions of the “scientific world view” discredits dualism. The hierarchical mind/body split of dualism is regarded as quaint, hopelessly naive. Although fundamentally anti-dualist, John Searle is kinder than many of his colleagues exploring matters of the brain:

The separation between mind and matter was a useful heuristic tool in the seventeenth century, a tool that facilitated a great deal of progress that took place in the sciences. However, the separation is philosophically confused, and by the twentieth century it had become a massive obstacle to a scientific understanding of the place of consciousness within the natural world. (85)

Searle claims that our culture is “historically conditioned to think” (14) in the vocabulary of dualism and that prevents even “good thinkers” from comprehending their “inner reality.” He further asserts that dualism is totally discredited by anyone with “even a modicum of ‘scientific’ education” (91). What percentage of citizens have at least this much understanding of scientific basics? I would hope that the number is large, but I fear it is not. An editorialist in *The New Yorker*, pondering the immense power of sheer belief which led to the mass

suicide of the Heaven's Gate cult, concludes that "[T]hrough science is stronger today than when Galileo knelt before the Inquisition, it remains a minority habit of mind, and its future is very much in doubt" (Ferris 31). Our culture seems mired in ancient belief systems which the scientific world has abandoned. Dualism is the unrealistic yet dominant belief system of our 21st century culture where the scientific world view remains a "minority habit of mind."

Questioning dualism is difficult. Our Western culture has created a masterful image of human glory and our special relationship to the material world. Michelangelo's image of God, the Father, touching life into Adam infuses our lives with meaning and purpose. Our mental imagery is stuck in a pre-industrial, pre-Darwinian world. For most, this world of images goes unexamined. One who does explore this usually uncharted territory is David Denby. In retracing Darwin's journey, Denby expresses our general reluctance to look into the face of scientific "reality" because it affects us personally: "That human beings had descended from the apes was no longer difficult to accept. But the notion that human existence is a mere accident—that the glittering jewel, consciousness, is just another adaptive mechanism—was a vile blow to one's self-esteem" (59). Many of us deny the "scientific reality" of materialism for so many powerful historical, religious, and personal reasons that the subject is nearly taboo. But it is a given in scientific circles.

If we educators approach the new theories of consciousness with "eyes" that can see, we need to first distance ourselves from the usual dualistic assumptions we make about ourselves and our students. We must be skeptical of our unexamined metaphors and explore how they might distort the way we picture our "inner workings." These new theories of consciousness offer "new ways of thinking," new metaphors of consciousness to replace the old.

The "brain sciences" themselves have only begun to tackle the mystery of consciousness. For the first 90 years of the 20th century, these scientists did not delve into the subject of consciousness. Now, the many scientific disciplines honing in on the question of consciousness have collectively agreed on a few fundamentals. They agree that the problem of consciousness—although the most mysterious of all mysteries tackled by the scientific method—will be solved. This conviction itself is a radical departure from the conventional wisdom of a decade ago. One of the leading theorists, Daniel Dennett ponders the difficulty of imagining how the mind can emanate from the material brain, and concludes that "you really have to know quite a lot of what science has discovered about how brains work, but much more important, you have to learn new ways of thinking" (*Consciousness* 16). After only two decades of laboratory experimentation on how the brain works, the advances coming from neuroscience in particular will help us "connect what we know about our minds to what we know (scientifically) about our brains" (Edelman 4). These scientists hope that this new information will help our culture cast off the historical blinders that keep us from understanding our inner workings. This new information about our brains (which I sketchily review here) may facilitate "new ways of thinking."

Dennett claims that dualism leaves us with "bad grammar" that compels us to buy into the Cartesian world view even if we know it is discredited. We see ourselves as "witnessing" our inner workings; however, Dennet claims that "events

that happen in your brain, just like events that happen in your stomach or your liver, are not normally witnessed by anyone” (*Consciousness* 29). We tend to imagine a “self” sitting inside our head, processing the proceedings. This picture distorts the reality that science has now documented. No “I” is in charge. Only our material gray matter creates all our mind stuff. Our mental life is a purely physical process, and this process is out of our hands.

So what metaphors for mind are consistent with the new data? Dennett proposes new vocabulary for a new model: Multiple Drafts from the Pandemonium Theater. This metaphor pushes our understanding of mind closer to the chaotic stream of life being lived. If there is no center, if no “I” is in charge of consciousness, what goes on during thought? Dennett’s Multiple Drafts model posits that perceptions and all mental activities are subjected to “continuous ‘editorial revision’” (*Consciousness* 111). He describes thinking as follows:

These editorial processes occur over large fractions of a second, during which time various additions, incorporations [. . .] and overwritings of content can occur, in various orders. We don’t directly experience what happens on our retinas, in our ears, on the surface of our skin. What we actually experience is a product of many processes of interpretation—editorial processes, in effect. They take in relatively raw and one-sided representations, and they take place in the streams of activity in various parts of the brain. This much is recognized by virtually all theories of perception, but now we are poised for the novel feature of the Multiple Drafts model: Feature detections or discriminations *only have to be made once*. That is, once a particular “observation” of some feature has been made, by a specialized, localized portion of the brain, the information content thus fixed does not have to be sent somewhere else to be rediscriminated by some “master” discriminator. (112–13)

Our brain’s physical processing “editorializes” our existence for us. The brain as a biological organ simply “stores” the interpretations it makes, incorporating the new input with all the other bits of previously interpreted information (*Consciousness* 127). The information stream is turbulent and wild, bursting its banks, creating new channels, meandering at random. However, when one of these drafts is “published” through utterance, when a thought finds language, our common sense (and dualism) tells us that some One was in control of that utterance. We assume a Central Meaner from the Cartesian Theater issued a statement, proving “I” was in charge of my mental processes. Dennett argues that the complex physical processes of our brain *can only* render drafts upon drafts from the Pandemonium Theater. The Central Meaner—the “I”—changes any time and every time the stream is dipped into. This “flow” is how we think! The stream of consciousness—electrical and chemical impulses—flows out of our control. He describes our mental process as highly chaotic, totally unique to the moment and not duplicative. If this picture is our mental reality (as these scientists posit), no wonder we grasp for any sense of order.

We assume a Self—an “I”—is in charge, but Dennett exposes this sense of Self as a fiction. He argues that our material brain cells create “us” and take “us”

along on a magnificent ride. According to this Multiple Drafts metaphor, our consciousness is a flowing, evolving collection of narratives. The words straining to “translate” our inner thoughts are highly revised narratives “from deep inside the system” (*Consciousness* 238). Thus, we negotiate with our external environments through these narratives. According to Dennett, words are as integral to humans as webs are to spiders and dams are to beavers: “Our fundamental tactic of self-protection, self-control, and self-definition is not spinning webs or building dams, but telling stories, and more particularly concocting and controlling the story we tell others—and ourselves—about who we are” (418). These sustaining narratives come forth naturally, effortlessly and seem *as if* from a single source. The illusion is natural, but Dennett warns us that “our tales are spun, but for the most part we don’t spin them; they spin us. Our human consciousness, and our narrative selfhood, is their product, not their source” (*Consciousness* 418). No One controls the mental processes, and no Self concocts the narratives told; the physical process produces the One, the Self, the delusion of a Central Meaner. Dennett admits that his Multiple Drafts model is his beginning attempt to forge “new ways of thinking” about our inner reality.

Once we understand the massive complexity of our consciousness, as explained by the “brain sciences,” materialism becomes easier to accept. To be only made of matter loses its demeaning connotation, its deflating aspect, when we begin to understand the degree of complexity that matter is capable of achieving. That is what the recent discoveries of the “brain sciences” are forcing our culture to confront. I, for one, thank them. Reading these theorists has given me new insight—new mental imagery and understanding—about my own inner world. I feel released from false expectations and more deeply appreciative of my turbulence and density, of both my dreaming and wakeful consciousness. Dennett confesses to the usual human foible: “We would like to think of ourselves as godlike creators of ideas, manipulating and controlling them as our whim dictates, and judging them from an independent, Olympian standpoint. But even if this is our ideal, we know that it is seldom if ever our reality” (*Darwin* 346). For Dennett, Pandemonium prevails in our brains, and “we” are created—“spun”—by its elaborate physical processes.

Another leading theorist pictures an even more contrarian model of mind. Working from the same scientific discoveries about the brain’s structure, composition, organization, and evolution, Gerald Edelman claims that neuroscience is “on the threshold of knowing how we know” (xiii). His biologically-based theory of consciousness accomplishes two goals: to explain our consciousness as we “know” it to be (both personally and scientifically) and to explore our place as a species of life created through natural selection. His model of mind exalts the “how” and demotes the “what.” Nothing is magic about “what” composes the nervous system. Our three pounds of gray matter is made of ordinary cells, called neurons. For Edelman, the magic is “how” these simple cells are able to connect to one another. Our neuronal networks are capable of “massive connectivity” which makes the human brain not only “the most complicated material object in the known universe” but also “something unique in the universe” (17). Even though this hyperdense connectivity is difficult for most of us to imagine, Edelman argues that we experience it within our own consciousness all the time. Edelman

helps us visualize the “massiveness” of our brain material by explaining that it would take 32 million years to count the synapses (connections) if we counted them one per second (17). Furthermore, none of these massive connections is “hardwired.” These individual connections *organize themselves* into neuronal groups, which in turn form “maps” or networks of “maps” for sensations and thoughts to travel. These “maps” form connections to other “maps” and networks of “maps.” These, in turn, collide, merge, diverge, fragment, overlap, strike out to new “maps.” Neuronal “maps,” working together, create brain activity on their own. One word, say “sailboat,” lights up “maps” everywhere throughout the brain; with the second mention, the “mapping” is similar but not identical, as new connections to other networks are made, hence strengthening some while neglecting others. The path the “map” creates is never the same. Common sense tells us that our brains are primarily concerned with registering sensory data from the outside, but neuroscience has proven the opposite to be true. The brain is “more in touch with itself than with anything else” (19). The brain’s connectivity is ceaseless. We experience this faintly during dreaming, the brain coursing through its circuits without conscious “control.” This startling fact suggests that our biology makes us self-absorbed, almost “locked in” by our own circuitry. Our uniquely complex brains generate our minds. The connective texture spins so richly, so immensely, so turbulently that a consciousness arises from the material circuitry. No thing or no one is in control. The material process of “mapping” creates the individual.

Edelman pictures consciousness arising from a massive material system of such complexity that it is difficult to comprehend. This material system is elaborately and complexly “mapped” and “running on its own” energy and under its own innate guidance. Each brain organizes itself by itself. While the anatomy of the brain makes human brains seem alike, no two brains—not even those of identical twins with hypothetical identical life experiences—can be alike. The neuronal groups of each brain and the “mapping choices” are totally unique to an individual organism—during embryonic development as well as during life. Thus, the brain’s organization is interactive, self-monitoring, recursive, continual, and original to that individual brain, in all phases of life. Through electrical/chemical mechanisms, neuronal groups create sprawling, overlapping “maps” which are so dense, shifting, and variable that the “paths” are not actually laid down or hard-wired. These “paths” are not identifiable, reversible, or even repeatable (for each “path” taken alters the path itself). Edelman claims that we do not “store” the idea of “sailboat” anywhere, as most of us imagine. Instead, the word lights certain networks of “maps” but not always the same ones; the word fires differently at different times and always will. This idea is similar to Dennett’s concept of the mental stream being dipped into at random. The physical process drives the activity. The “mapping” operates beyond an individual’s control. In a sense, the “mapping choices” generate the individual.

I have greatly compressed his elaborate arguments and illustrations to give a taste of the enormous complexity that neuroscience has uncovered about our great mystery, our consciousness. While the individual disciplines of the “brain sciences” argue ferociously, there are core agreements about a scientific way to understand ourselves. Is this picture of our material minds being out of our con-

trol distressing? I think not. Dennett creates a charming metaphor of mind to alleviate any hint of distress. Edelman admits no distress whatsoever. Indeed, he seems to be in awe of (and inspires awe about) our magnificent, uniquely complex, material nervous system that produces human consciousness.

Edelman explores how such a complex system as consciousness arose—a product of the process of natural selection. For Dennett, we are totally adrift, floating on a deep well of “editorializations” with no control. For Edelman, the “mapping choices” our immensely connected brain makes are out of *our* control, but—here’s the kicker—these choices are based on value for the individual organism and the species. Thus, the process of consciousness is not haphazard (as in Dennett’s metaphor) but based on value, and hence, advancement and progress. Edelman takes a “bottom-up” look at our human consciousness and our place in the natural realm. He urges us to discard all our normal metaphors for ourselves because they distort the richness (and reality) of our mental lives. With his theory of consciousness, he intends to reunite the spiritual and corporeal, the mind and the body, and put the human mind back into nature—from which it emerged during the process of natural selection. His central metaphor for mind is jungle: “the chemical and electrical dynamics of the brain resemble [nothing so much as] the sound and light patterns and the movement and growth patterns of a jungle” (29). For Edelman, the most apt and realistic metaphor for our brains, the individual consciousness that arises from them, is that they were as intricate, delicate and adaptive as a thriving jungle. The ecological efficiency of an evolving jungle is densely interconnective and creative. It grows as it lives. The jungle has no hierarchy, but it has dense, shifting patterns. These patterns are created—perhaps even controlled—by the process of natural selection. (Natural selection as a process producing diverse “products” is more sophisticated than our culture’s grasp of it as only survival of the fittest; rather, the process “selects” based on value for the individual organism, the species, and the cooperating environment.) As natural selection keeps the jungle healthy through a selection process based on value, so do the “mapping choices” of our functioning brains. The brain has evolved as a product of natural selection, and it mimics the selection system which gave it birth. The brain spins forth a consciousness so powerful that it can contemplate the laws of nature of which it is a part. We can ask “why” and answer “why not.” We can construct myths to explain the mysteries of our observed universe. We can spiritualize our vast material systems. But we cannot leave the system that spawned us, for we are that system, product and process. Both Edelman and Dennett conclude their books by reiterating that their individual theories are only the beginning in the search for this particular truth about the material world, truth about consciousness. They openly invite challenges from other disciplines probing the brain. Nothing is set in stone except certain foundational assumptions. Consciousness is a material process, vastly and densely complex, operating beyond our control but creating “us” as on-going works in progress, as individuals and as a species.

All educators, especially composition teachers, should be aware of these recent findings of the “brain sciences.” They certainly challenge the foundational image of consciousness dominant in our culture. Based on scientific data, these new findings claim that consciousness is not a miracle product, located some-

where magical, but a chaotically complex material process, totally de-centered, indeterminate, self-organizing, and creative. I am, you are, and they are. We are; therefore, we think. And it's a jungle in there.

What can composition teachers learn from these changed metaphors of how consciousness works? I have already altered my perceptions, my pictures, of my mind at work and of my students' minds at work. I have gained more respect for the complexity of the writing and communication tasks we require of our students. So far, this appreciation is too abstract to turn into lesson plans, but it has altered my pedagogy in profound ways. My foundational metaphors have changed, and these changes percolate up. It's "a bottom-up" process, like consciousness.

Another "bottom up" process is taking place in the field of composition studies, I hope. This new information about consciousness—the changed metaphors of mind—will enhance this effort. A number of composition theorists have challenged our discipline's foundational images, the communication model. Typically, disciplines are slow to reach their foundational issues. It took the "brain sciences" ninety years to even consider their fundamental issue—consciousness. Our discipline has benefited from heated debates on many important issues, but about our foundational thinking (the communication model) there has been mostly silence. Until recently, that is. At least four composition theorists are questioning our current theory of language. Each describes the limitations imposed by the "information transfer" model of language and calls for a better, more realistic model. All four attack our assumptions about the dominant communication model. James Thomas Zebroski is direct in his assault:

I want to argue that this "communication model" of language is simplistic and inadequate, and that it is, nonetheless, pervasive in the composition discipline and the research issuing forth. Until the pervasiveness and inadequacy of this theory of language is recognized and transcended, much of the new research in writing, as interesting as it may otherwise be, will tell us what in some sense we already know. To see writing activity in a truly new way, to find more successful ways of teaching composition, we need to reconceptualize our entire theory of language. (179)

He goes on to dissect the unreality of the "sender-receiver, encoding-decoding model" (181) and the communication triangle upon which Western theories of language are based. He argues forcefully that our discipline ought to adopt a dialogic theory of language.

In a similar vein, Ann M. Penrose and Cheryl Geisler explore the limitations which the "traditional information-transfer model" (507) imposes on our students. They find that the model with which "students enter college classrooms" has a "direct influence on reading and writing processes" (515). They argue that our students are so limited by the model most prevalent in our institutions that "an alternative to the information-transfer model [should] insist on more interactive models of education in which a genuine rhetorical perspective is not only taught but enacted" (517). They promise that the classroom and all within its walls will change for the better when we adopt a more realistic model of communication.

Another assault on our dominant model of communication comes from Irene

Ward: “many compositionists are abandoning the notion that written communication is a one-way process in which a reader decodes a message sent by a writer via the conduit of language” (2). She traces the history of these “departures” from the standard model (by some of our best known theorists) in great detail. She examines the twists and turns that our discipline took as it matured into a discipline. Although the dominant model of communication has been questioned along the way, it remains firmly implanted and largely unchallenged. She then calls for a new model to replace our current “process model,” which is flawed because it is based on an unrealistic picture of communication. She wants to replace it with the theory of communication called Functional Dialogism. She argues “that dialogism is fundamental to the modern composition pedagogy” (203) but that we generally do not acknowledge it.

That these teachers are calling for a thorough examination of our foundational assumptions about language is roughly parallel to the movement in the “brain sciences.” Both disciplines require a model which is consistent with the base reality. When the controlling image—the foundational metaphor—is out of synch with the reality it attempts to illustrate, progress within that field is severely limited. We continue to train our students in a questionable model of communication—“information transfer”—for a number of reasons (reluctance to change probably being the most significant). Perhaps we are also limited by our current “top-down” image of how minds work. Although we’ve glimpsed into the unruly, chaotic stream of our students’ largely untrained minds, we do not understand what we see. We try to fix the mess. If our profession had “new ways of thinking” about that tumult—a new metaphor of consciousness—we might do a better job of “milking” that reality.

In this essay, I have outlined the scientific argument against the old model of mind—the dualistic, hierarchical Self. Perhaps, if we in the field of writing learn more about how minds work, we can use this knowledge to replace our current model of communication with a model more reflective of real communication. I am partial to the dialogic models of communication suggested by Zebroski, Penrose and Geisler, and Ward. After reading Bakhtin over a decade ago, I started using dialogic methods in my writing pedagogy and became a convert. I see deep correspondences between a dialogic model of communication and the new model of mind. These correspondences are abstract but crucial. Both foundational models displace the centeredness of the self. The unitariness or wholeness or completedness of the usual idea of Self is replaced by a sense of self which is (in reality) incomplete, still-forming, still-responsive, always interactive; the flow of the dialogic self is—in communication and in biology—a process of discovery, uncertainty, and creativity. False certainty is dissipated by uncertainty. As I suggested in the beginning, teachers of writing sense the accuracy of the new metaphors of mind. We see our students living in “the jungle” or attending the Pandemonium Theater. Many of us help them out of confusion by assigning the five-paragraph essay, the Process Analysis, or Classification essay, all with an outline. A dialogic model of communication would benefit our students immensely: students would not learn to fear confusion but would learn to use it. They could shed their certainty and explore uncertainty. They might think better if they were released from the requirement of linear thinking. But most

important, they might grow more reflective under a dialogic model of communication. The old but dominant metaphor of mind sanctions the old, but dominant models for communication. If you change one, you can change the other.

I see profound correspondences between these calls for a more realistic communication model and for new foundational images of consciousness. The old models are regarded not only as misleading but also as limiting. Admittedly, I have greatly oversimplified these new theories of consciousness and reduced the science to what a humanist understands; I hope to intrigue my colleagues into reading within these other disciplines. Clearly, the mind is our business, too. We should be aware of the scientific changes eventually, ultimately coming our way. While the debates among these “brain scientists” are heated, a consensus—a new image of consciousness—has emerged. Once we have “new ways of thinking” about our inner lives and understand the immense complexity of our material system, we might reconnect to the spiritual. Material systems as complex as our brains can produce amazing “spiritual” stuff. At the very least, “new ways of thinking” will encourage a non-hierarchical approach to our material stuff, our brains. We can appreciate and learn from the shifting pictures being floated out of the scientific disciplines. New and better metaphors for mind are out there. Perhaps more realistic pictures will help us unleash the depths and density we fear many of our students do not have.

Don't fear going into the jungle. ☺

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