

Embodied Mind, the Environment, and Culture: Reply to Chet Bowers

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In *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*, George Lakoff and I argued that converging evidence from cognitive science research garnered from several empirical disciplines supports a view of human meaning, conceptualization, and reasoning as grounded in aspects of sensory-motor experience and elaborated by various imaginative processes. Our central claim was that human thinking emerges from patterns of our ongoing engagement with environments that are at once physical, social, and cultural in character. For example, the fact that humans can stand erect and move about in a gravitational field in relation to various recurring contours of their physical environment has generated in human thought a certain primacy of structures of verticality, balance, and forward motion along a path. For example, to consider just verticality, while the notions of “up” and “down” (relative to a vertical orientation) have primary senses tied to our bodily experience, they can also be extended metaphorically in our understanding of abstract concepts, such as *being up psychologically* (as in “I’m really up today”), *being in control* (as in “she’s on top of things now”), *increasing in quantity* (as in “prices went up”), and *gaining social status* (as in “she’s way up there on the social ladder”).

Chet Bowers embraces the motive behind our embodied cognition project, which is to challenge the notion of disembodied mind and thought, in favour of a view of mind as embodied, embedded in its environments, and engaged with the world. However, Bowers seems to think that, in spite of this central organism-environment interaction

theme of *Philosophy in the Flesh*, Lakoff and I somehow ended up with the same old reductivist, individualistic view of the self that takes no notice of its intimate relations with its environment. As far as I can tell, Bowers' criticisms revolve around his perception that because Lakoff and I see meaning and thought as embodied, we necessarily overlook (1) the role of our environments in how we think and act, and (2) the massive cultural frameworks and modes of inquiry that are not explicable only in terms of individual human minds. On top of this, Bowers thinks that our alleged failure to understand cultural systems supposedly leads us to overlook the environmental crisis that is affecting everything we experience, think, and do. Among Bowers' more specific objections are the following:

1. He accuses Lakoff and me of having an individualistic theory of meaning and thought, one that either completely ignores, or else uncritically takes for granted, the cultural framework(s) we inhabit. He speaks of "the Western notion of the autonomous (that is, the supposedly culturally uninfluenced) individual they take for granted."
2. "This omission leads to their failure to acknowledge that today the ecological crises should frame any discussion of metaphorical thinking."
3. "Supposedly, the individual whose sensorimotor experiences and habituated neural connections become the basis for framing the meaning of words (metaphors), and thus for how relationships are understood, is unaffected by the global changes in the natural environment." In other words, he accuses us of abstracting the "individual" from her setting and overlooking the monumental shaping force of environment and culture.
4. Lastly, he claims that our "extreme reductionist understanding of the origins of knowledge leads to a radical difference between what individuals would learn from their embodied encounters with their local environments and what scientists are now reporting."

I am not sure that I can identify the appropriate connections between these four objections, but it seems to me that the first three criticisms are supposed to culminate in the fourth, which is that the individualistic, abstract conception of the human creature that Bowers attributes to us can have no room for the important scientific work on global climate change, and so is completely blind to the cultural frameworks shaping our sense of our world.

These four objections strike me as preposterous—the result of a dramatic misreading of *Philosophy in the Flesh*. Before now, I had not thought it possible for someone read that book as proposing a view of the human organism as individualistic, separated from its environments, and unshaped by cultural frameworks and artifacts. The reason I find this incredible is that every part of our account of the emergence of meaning, concepts, and inferential structures is predicated on the idea of the organism’s ongoing interaction with aspects of its environment. There can be no organism without its environment. My environment is implicated in everything I am, everything I experience, and everything I think, feel, and do. We are not brains in a vat. Nor are we merely brains locked up within bodies. Rather, the locus of human experience, understanding, and communication is an ongoing process of organism-environment interaction that involves both perception and active transformation of that environment. You could not have image schemas, or conceptual metaphors, or radial categories, or any of the aspects of human thought that we presented in our book without transaction with a world—a world that is physical (material), social, and cultural. I summarized this view on page one of *The Meaning of the Body: Aesthetics of Human Understanding* as follows:

The best biology, psychology, cognitive neuroscience, and phenomenology available today teach us that our human forms of experience, consciousness, thought, and communication would not exist without our brains, operating as an organic part of our functioning bodies, which, in turn, are actively engaged with the specific kinds of physical, social, and cultural environments that humans dwell in.

What I’m saying is that our view of embodied thought is thus nearly the opposite of the one attributed to us by Bowers, in at least the following respects:

1. What we colloquially call “the body” is never some autonomous, discrete lump of flesh that just happens to interact with some environment. The bodily organism exists only in and through its engagement with its environment. This is what Ulric Neisser has called the *ecological self*.
2. Hence the structures of sensorimotor experience that are the bodily basis of meaning, concepts, and thought exist only as analog patterns of organism-environment transaction. These patterns are therefore not just *in us* (i.e., not just in our brains or our bodies); rather, they are *in the world* (or, *in experience* taken as at once both subjective and objective).

3. However, body-based concrete concepts (of, for example, objects, properties, spatial relations, affect, mood, bodily orientation, body-parts, object manipulation, and spatial locomotion) constitute only part of human meaning and thought. The other part involves abstract concepts (such as those for mind, knowledge, freedom, love, democracy, reason, and so forth). According to the embodied cognition view, abstract concepts require imaginative processes for mapping aspects of sensorimotor experience onto our understanding of non-spatial or non-bodily concepts. The name for these conceptual mappings is Conceptual Metaphor. Scores of empirical studies of these metaphor systems show that the source domains of the metaphors are typically aspects of sensorimotor experience. In other words, we “map” objects, operations, and relations of spatial and bodily domains onto non-physical domains, such as when we conceive of human thought via the Understanding Is Seeing metaphor (as in, “I see what you mean,” “That was an illuminating account of string theory,” “Could you shed more light on the causes of global climate change”).
4. On the basis of such cross-domain mappings, the bodily or spatial logic of the source domain gets recruited for our reasoning about the target domain. In this way, conceptual metaphor is one of the chief devices for abstract thought. For example, just as vision requires an eye that sees, an object seen, and ambient light for seeing, so also, the Understanding Is Seeing metaphor requires some mental “eye” that “sees” (i.e., understands) some quasi idea-object, according to the “natural light of reason.”
5. Consequently, Bowers is mistaken to attribute to Lakoff and me the thesis that “all thought is based on metaphors.” On the contrary, metaphor defines our abstract concepts, but not our concrete concepts. Our perceptual, spatial, orientational concepts are typically understood directly in terms of patterns and qualities of our bodily interaction with our environment, and then our abstract concepts are defined by conceptual metaphors and other imaginative structures that are typically grounded in aspects of sensorimotor experience. One of the great glories of human thought is our imaginative ability to recruit sensorimotor meaning and structure for understanding of and reasoning with abstract concepts.
6. It follows from this that all of our systems of abstract concepts in our scientific, mathematical, and philosophical thinking

would involve vast systems of complex conceptual metaphors. Scientific understanding is inextricably tied to metaphorical frames, and it is the logic of the metaphors that determines how we think and reason. The technical term for this powerful effect on thinking is *metaphorical framing*. Activating a metaphorical frame, such as The Mind Is a Computer, or Nature Is an Organic Whole, prefigures how we circumscribe the phenomena of our inquiry and how we subsequently think about them. Therefore, completely contrary to what Bowers claims, it is precisely the embodied mind that makes scientific understanding possible, and so it is precisely the embodiment of thought that makes it possible for us to grasp the nature and significance of climate science. That is why I am baffled by his suggestion that, on our view, we could never explain the very climate science upon which our global ecological well-being rests.

For the most part, the entire second half of Bowers' essay is a mistaken attempt to claim that Lakoff and I do not grasp the power of metaphors to frame our understanding. He says, "The basic assumptions (listed below) of Lakoff and Johnson limit the individual's conceptual understanding of the environment to the inherently limited nature of embodied experience. The result would be that grasping the world-wide consequences of global warming would be beyond the individual's conceptualization." But this is just wrong. It simply *does not follow* that body-based understanding is incapable of making sense of, among other things, climate science. For, if it can be shown that climate science (or any science, for that matter) is based on founding (framing) metaphors, then it is precisely a theory of how embodied cognition works that will illuminate our understanding of climate science and the factors that have contributed to our climate crisis.

What I find even more frustrating is Bowers' contention that our view of embodied mind, thought, and language cannot appreciate the framing power of metaphors. Here is how he states that objection:

When they (Lakoff and Johnson) made the turn toward locating the source of metaphors in the embodied experience of the individual, which was motivated by their concern with the hegemony of abstract theory and language usage by mainstream Western philosophers, they lost sight of the more obvious and now ecologically important characteristic of language. That is, they ignored that words as metaphors have a history and that they carry forward the misconceptions and silences of earlier thinkers who succeeded in establishing the analogs that framed the meaning of words over time. In effect, they failed to recognize that the industrial-consumer

oriented culture that is now being globalized, and that is overshooting the sustaining capacity of the natural systems, is based on the metaphorical thinking of earlier thinkers who were unaware of environment limits.

This passage is infuriating, because it completely ignores the nearly thirty years of empirical study and analysis by Lakoff, myself, scores of other linguists, philosophers, and psychologists of the key metaphorical frames that have defined entire scientific, theological, philosophical, economic, and political perspectives. If anyone is known for frame analysis, it is George Lakoff, who acknowledges his debt to the earlier work of his colleague Charles Fillmore on semantic frames. In several books, including *Don't Think of an Elephant, Whose Freedom?*, and *The Political Mind*, Lakoff has done the most painstaking and detailed analyses of the conceptual frames that define virtually every aspect of our lives. Bowers speaks not of frames, but of "root metaphors," an idea he borrows from the work of Richard Brown in the 1970s, but which actually was introduced by Stephen Pepper in his 1942 book *World Hypotheses*. Whatever name you choose, the basic insight is the same, namely, that complex, large-scale metaphorical frames shape virtually every aspect of how we will understand phenomena as circumscribed and defined within the domain conceptualized by the frame.

How Bowers could claim that Conceptual Metaphor Theory, as tied to embodied cognition theory, cannot explain metaphorical frames and root metaphors is beyond my ken. The last nearly 500 pages of *Philosophy in the Flesh*, to cite just one example, are devoted to analyzing some of the key metaphorical systems that have defined our Western intellectual tradition. These last two of the three parts of the book involve to use of the tools of the cognitive science of the embodied mind to analyze, first, the key philosophical ideas (such as causation, time, mind, thought, the self, knowledge, morality), and, second, key philosophical traditions, such as those of the Presocratics, Plato, Aristotle, Descartes, Kant, and parts of contemporary analytic philosophy of mind and language. Our chief purpose in doing these extensive analyses is precisely that which Bowers claims we do not, and cannot, do, namely, to show how our understanding of our most central philosophical ideas and some of our most influential philosophical traditions are vastly complex metaphorical frames. Furthermore, our claim, again and again, is that the failure to understand how these metaphors structure our thinking, and what different metaphors highlight and hide, is a fundamental failure of personal and cultural understanding.

In short, Bowers' insistence that our account of embodied knowing and metaphorical framing cannot allow us to examine the fundamental

assumptions of our scientific, theological, philosophical, moral, and political traditions (or any traditions, for that matter) is ludicrous. Several of his remarks in the last few pages of his article are just versions of this same misrepresentation of Conceptual Metaphor Theory, and they reveal a lack of familiarity with the rather extensive literature on how our cultural understanding is tied to our embodiment and organized according to metaphorical frames. To cite just one final example of this line of reasoning, Bowers thinks that the embodied cognition theory is somehow tied to the

“embodied/sensorimotor/neurally connected experience of today’s individual,” and that we could never, on this basis, grasp key notions from earlier historical epochs or cultures substantially different from our own. I trust that the appropriate reply to this charge is fairly obvious. It is that, of course, we use the bodily resources for conceptualizing and thinking that we possess today (after all, what other basis could we possibly have?), and it is via those structures of bodily meaning and thought that we understand the conceptual systems, metaphorical frames, and value systems of historically distant and culturally different traditions.

To conclude, one way to sum up the guiding theme of my entire reply would be just to say that Bowers has not understood the version of embodied mind, embodied meaning, and embodied language that Lakoff and I have been developing over the past three decades. The miss is not just a question of minor corrections; rather, it is a systematic misinterpretation of the whole orientation—its assumptions, key ideas, and forms of analysis and explanation.

That said, it *is* true, as Bowers claims, that Lakoff and I do not give any account of global climate change in our book. I couldn’t agree with him more that climate change is one of the most pressing concerns for the future of life on earth. I admire his commitment to bringing our attention to some of the philosophical and scientific assumptions, often framed metaphorically, that have led and continue to affect the deterioration of our environments. However, I can see no reason why it should be thought to be a fault of a book on the bodily basis of meaning, concepts, thought, and language that it does not discuss global climate change. Instead, what a book of the sort Lakoff and I were trying to write *ought* to do is to give us the analytic tools (taken partly from the cognitive sciences) to make it possible for us to engage in any form of intellectual inquiry, from philosophy to religion to science. Climate science, including all of its mathematical components, will be one massive network of image schemas, body-based concepts, conceptual metaphors, metonymies, and conceptual blends. And so to really appreciate both the insights and possible limits of that climate

science, one must employ the tools of embodied cognition and metaphor analysis to the concepts and theories of that science. That, I submit, is one of the things that the cognitive science of the embodied mind contributes to our understanding of who we are, what our world is like, and how we ought to live.