



# Commentary: Metaphors We Live By

Alex Gomez-Marin\*

Instituto de Neurociencias (CSIC-UMH), Alicante, Spain

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## A Commentary on

### Metaphors We Live By

Lakoff, G. and Johnson, G. (2003). Chicago, IL: The University of Chicago Press, p. 276.

Four decades ago, linguists and philosophers George Lakoff and Mark Johnson published an influential book on the nature of metaphors. In *Metaphors We Live By* they argued that abstract thought is mostly metaphorical (having a literal core extended by mutually inconsistent metaphors and therefore incomplete without them), that metaphors are fundamentally conceptual (while metaphorical language is secondary), and that metaphorical thought is ubiquitous, unavoidable, largely unconscious, and grounded in everyday life. Despite the popular acclaim of the book and its impact across academic disciplines, their claims met resistance as they challenged objectivist views of meaning and language.

Two decades ago, in the afterword of the updated edition of their classic book, the authors insisted on some persistent fallacies that contribute to a false view of what metaphors are and do. Especially relevant to scientists is the mistaken idea that metaphors are just “a matter of words,” namely, a way of speaking that can be shielded from rational thinking, and ultimately innocuous to it. Such a fallacy is related to the belief that metaphors are mainly “a matter of definition;” “it is just semantics” is stupid as a conversation stopper. After all, meaning is all that matters. Furthermore, Lakoff and Johnson remarked that metaphors are natural phenomena, not mere arbitrary historical contingencies or cultural constructions; they are grounded in the very bodily nature of our daily cognitive pursuits.

Today, neuroscientists remain ensnared in disputes about whether brains are computers or not. The debate about the appropriateness and obsolescence of the brain-computer analogy and its pervading metaphorical use is alive and ticking. Of course, some will deem the exchange as useless, while others will insist that, until we figure out what we mean by what we say, a proper scientific discussion is defective or cannot even start.

Here, rather than poking the brain-as-computer blister again, I would like to walk through the very brief history of the metaphorical brain, and then mention an alternative class of metaphors that could offer fresh, offbeat, and even rebellious perspectives on our conception of that mushy little thing called “the brain.”

Brains have been many things indeed. Four centuries ago, Descartes suggested that cerebral hydraulic automata produced behavior by powering “animal spirits” thought the nerves. Nicolas Steno cast the brain as a machine. Fountain metaphors gave way to clocks. Leibniz objected: entering a brain as one enters a mill would reveal mechanical parts but nothing mind-like whatsoever. In the time of Shelley’s *Frankenstein*, Galvani, and Volta explored the role of electricity in animal bodies. Nerves turned into wires and brains into telegraphs. Neural plasticity soon hindered the analogy. Cajal preferred natural images: trees, gardens, forests. For Darwin, thought was a “secretion” of the brain. It was soon postulated that all animals, including humans, were “conscious machines.” But machines would become animal-like too: electric dogs, clockwork

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Pedro Martinez,  
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Daniel J. Graham,  
Hobart and William Smith Colleges,  
United States

### \*Correspondence:

Alex Gomez-Marin  
agomezmarin@gmail.com

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beetles, three-wheeled moths. With the theoretical articulation and empirical implementation of feedback loops, the line between biology and technology thinned. Pitts and McCulloch's "neural network" further blurred the distinction between the natural and the artificial. The metaphor was turned inside-out: computers were like brains, then brains became computers. With information theory in place, code-breaking percolated from the war to the lab. Physicalists stopped worshiping matter and revered information instead, a notion as pervasive as confounded. The brain has, thenceforth, been deemed as the preeminent computational organ. Despite considerable progress and obvious updates of the metaphor *du jour* (networks, the internet, and so on), we have hardly gone much further.

The less told story of the idea of the brain involves other images. A remarkably forgotten one, inspired by a fascinating physical technique, is the hologram. The brain would be a holographic information device. Modulating waves within a field, a part could contain the whole, allowing for non-local memory storage (the still elusive engram would be lost and found). Simple metaphors can also be conceptually juicy. Consider a prism, whereby light is reflected (perception as virtual action) and refracted (embodiment and affect). Blue would not be created in the prism but selected from the incoming beam. As Henri Bergson put it, the brain would be the organ of attention to life, whose main role is to receive, delay, and conduit movement, carving out external images rather than producing them. From this perspective, brains are more like radios than VR headsets. This whole class of metaphors leads us back to William James' foundational (and forgotten) distinction between brain function as "productive" vs. "permissive." The brain as a "reducing valve," in Aldous Huxley's words, is an intriguing hypothesis that could be investigated within the current renaissance of psychedelic research. Brains would not create thoughts but receive and filter them. These are other metaphors neuroscientists could live by.

It is also helpful to note that English is not the only language spoken by human beings. The word *computer* is not universally translated as such. A computer is still a "computer" in Italian, Portuguese, or German. But in Catalan we say *ordinador*, which we took from the French *ordinateur*. The same happens in Spanish with *ordenador* (except outside of Spain, where people say *computadora*). The story behind the choice of words is peculiar. In 1955, the IBM marketing team in France decided against branding their new product too similarly to existing "calculators." As a better (and shorter) name for "the new electronic (programmable) machine intended for information processing," they decided on *ordinatrice électronique*. Finally, *ordinateur* settled as a trademark, percolating to current language. Depending on the country, brains are pictured in the image of a person who organizes or who computes. We can remain lost in translation.

Like fish in the sea, we often fail to notice the entrenched metaphors we swim in. Brains are not really *any* of those, and yet treating brains *as such* can provide valuable insights *unless* one does not erect one's favorite image into an idol. As Lewontin's quote of Wiener and Rosenblueth puts it, "the price of metaphor is eternal vigilance." A metaphorical monoculture is a burden rather than a blessing. Glossing George Box's aphorism, all metaphors are wrong (when literally taken), but all are useful (when kept in their local domain of application). Screwdrivers are handy, but not to eat soup. Entertaining other ways to conceive what brains are, and what they do, is not only valuable but necessary.

Moreover, in the light of Lakoff and Johnson's thesis, honoring the metaphorical nature of much of our scientific thinking frees our imagination and allows us to deliberately explore the many-sided nature of the brain. In the bigger picture, *Metaphors We Live By* was a reaction to the tendency within the analytical tradition to demote metaphors as either meaningless or simply pragmatic vectors to literal meanings. The thesis of the book was discordant with those provinces of the Western canon that ascribe an immaculate purity to concepts, but also with the skeptic relativism of postmodernist doctrines. The metaphors we use shape what we can and cannot *see*, both under our microscopes but also in the real world. When it comes to understanding human mental life, the study of metaphors is complementary to the study of brains themselves. As we think, we live.

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