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A Mind Divided Against Itself: Thinking Holistically with a Split Brain

I am an environmental historian by training, and a good slice of my research involves examining the intellectual and cultural history of environmentalism. As part of this story, I have tried to situate environmentalism in the broader context of Max Weber's notion of the disenchantment of modernity. Holistic thought of various types, I argue, has been one of the chief agents of re-enchantment in the twentieth century, and ecological thought and environmental activism have drawn deeply from the well of holism. This is not to say that Weber was necessarily correct and that modernity was inherently disenchanted; nor am I advocating holistic thought as a superior way of attending to the world. Rather, I am describing a sensibility that had considerable impact on twentieth-century Western thought, regardless of its "truth."[1]

Ecology, at least in its more self-consciously holistic manifestations, has functioned as a discourse of scientific re-enchantment. The disenchantment narrative claims that an increasingly reductionist and instrumentalist brand of science has given us a false picture of nature, stripping it of wonder and meaning and justifying our never-ending exploitation and despoliation. It is not difficult to see the cultural mechanism at work here: people like to feel they are living in a world that has some kind of inherent unity and meaning rather than one that is chaotic, fragmented, and essentially meaningless. A holistic science, buttressed by a holistic view of nature, is therefore understandably attractive to people who worry that the modern world is becoming increasingly disenchanted.

Historians who tackle somewhat amorphous topics such as disenchantment and holistic thought tend to employ theories from the social and behavioral sciences: various versions of Marxism or theories derived from Freudian psychology, for example. Rarely, if ever, are they likely to call upon neuroscience or other branches of biology. However, there is strong evidence to suggest that the tension between holistic and reductive thought is not merely an intellectual and psychological characteristic of modernity; it is also closely tied to neurobiology, specifically to the way the two hemispheres of our brains interact with each other and attend to the world.

1 For useful introductions to the topic, see Landy and Saler 2009; Lawrence and Weisz 1998; Ash 1995; Harrington 1996; and Wood 2010.

It is early days yet, but it seems likely that the recent revolution in our understanding of the brain will one day provide historians with deeper insight into the history of human consciousness; that it will elucidate modes of thought and attention to the world that are meaningfully *historical* rather than merely offering frequently tendentious theories about how our hunter-gatherer past shaped our present neurophysiology and behavior. In his dauntingly erudite book, *The Master and His Emissary: The Divided Brain and the Making of the Western World* (2009), Iain McGilchrist, a British psychiatrist and polymath, offers historians some thought-provoking ideas about how to incorporate the findings of neuroscience into their work.

According to McGilchrist, there are two ways of being in the world, both of which are essential aspects of our species' cognitive makeup. He offers the following cogent summary of this complex and conceptually difficult idea:

> [One way of being is] to allow things to be *present* to us in all their embodied particularity, with all their changeability and impermanence, and their interconnectedness, as part of a whole which is forever in flux. In this world we, too, feel connected to what we experience, part of that whole, not confined in subjective isolation from a world that is viewed as objective. The other [is] to step outside the flow of experience and "experience" our experience in a special way: to *re-present* the world in a form that is less truthful, but apparently clearer, and therefore cast in a form which is more useful for manipulation of the world and one another. This world is explicit, abstracted, compartmentalized, fragmented, static . . . essentially lifeless. From this world we feel detached, but in relation to it we are powerful.
>
> I believe that the essential difference between the right hemisphere and the left hemisphere is that the right hemisphere pays attention to the Other, whatever it is that exists apart from ourselves, with which it sees itself in profound relation. It is deeply attracted to, and given life by, the relationship, the betweenness, that exists with this. By contrast, the left hemisphere pays attention to the virtual world that it has created, which is self-consistent, but self-contained, ultimately disconnected from the Other, making it powerful, but ultimately only able to operate on, and know, itself. (93)

If McGilchrist is correct, the bicameral nature of the brain is not merely an anatomical curiosity; it plays a major role in how our species acts in and on the world.

Theories about the way the different hemispheres of our bicameral brain interact with the world have existed since the mid-nineteenth century, when scientists determined that there was a clear asymmetry of function between the two halves. This led to numerous efforts to locate various functions in one hemisphere or the other. Subsequent research, however, indicated that the hemispheres operate in tandem and that virtually all activity is served to some degree by *both* hemispheres working together. Thus interest in the subject waned, and it is only recently that a few scientists and scholars have begun to revisit it. McGilchrist has trawled through an astonishing amount of neuroscience literature in order to further explore this idea. Much of his evidence could be described as "incidental," in that the studies were not specifically exploring the divided brain issue. Nevertheless, hundreds of studies of split-brain patients and patients with schizophrenia and other conditions provide McGilchrist with enough evidence to suggest that the bicameral nature of our brain is important and that it has shaped history, not just on a millennial scale, but over the short term as well, in the course of recent centuries or decades.

Unlike earlier explorations of the divided brain, McGilchrist is not so much interested in what each hemisphere does—which skills it possesses—as he is with how it uses these skills and to what end. The right hemisphere is integrative and holistic, using a gestalt perception rather than merely processing visual data as a sum of the parts. The left hemisphere (which controls the right arm) is more skillful at manipulation and has an affinity for the mechanical and the geometric; its principle "concern" is utility. It sees everything, including the body it occupies, as an assemblage of parts. Patients who have suffered from right hemisphere strokes will often "disown" various body parts, claiming, for example, that they do not recognize their own arm, a process that can be reversed by inhibiting the left hemisphere through vestibular stimulation. The right hemisphere, to use McGilchrist's formulation, is the "master" and the left is its "emissary."

McGilchrist argues that instrumentalism and reductionism are not merely cultural manifestations of a particular scientific worldview. They are also products of our divided brain, the result of a kind of long-term wrestling match between the narrowly focused and instrumentalist left hemisphere and the more empathic and creative right

hemisphere. There is thus a kind of positive feedback between the cultural conditions of modernity, with its need for ever greater precision, calculation, bureaucratization, and reductionism, and the left hemisphere of the brain, which excels at such tasks. In modern Western culture—and quite likely at various other points throughout history—the emissary has usurped the master. Does this involve any actual change in the structure or biochemistry of the brain? Possibly. McGilchrist believes that epigenetic mechanisms—those that do not depend on alterations in the actual sequence of nucleotides in the DNA within the gene, but on factors that influence what is expressed by the same DNA—can account for the transmission of brain capacities and cognitive abilities acquired during a single human lifetime.

Modern Western culture, McGilchrist argues, has become a predominantly left hemisphere culture, one concerned primarily with manipulation, acquisition, and rationalization. In fact, he sees it as quite literally schizophrenic, in that it exhibits the qualities one would expect to see in people with damaged or dysfunctional right hemispheres, characteristics also typical of schizophrenia patients. From this perspective, the re-enchanting holism characteristic of ecological worldviews is not merely an oppositional subculture attempting to counter the sweeping tide of modernity; it is also the right hemisphere's way of fighting back against the dominant left hemisphere. Or to be more concrete, it is an effort on the part of certain people to return to a more holistic, empathic, and intuitive way of attending to the world.[2]

McGilchrist is not a historian, but his work has a clear historical argument, albeit one that grows increasingly shrill as his analysis takes him from the ancient Greeks through to the Renaissance, the Enlightenment, and postmodernism, all the while charting the struggle between the two hemispheres and the rise to dominance of left hemisphere thinking. Many historians will find that his relentlessly declensionist narrative lacks nuance and occasionally even degenerates into an anti-modernist rant. Nevertheless, the crux of his argument—that our brains experience subtle biochemical and structural changes over time and that these shape, and are shaped by, culture—strikes me as offering a potentially useful approach for historians interested in integrating neuroscience into their

2 McGilchrist is here heavily indebted to the phenomenology of Husserl, Merleau-Ponty, and Heidegger. He does not mention the work of David Abram, but it seems to me that that is the type of right brain worldview he is describing, at least in regard to our perceptions of non-human nature (See Abram 1997 and 2010).

work. The idea that the relative importance of the brain's hemispheres can change over time is one that lends itself to comparative history, particularly as neuroscience becomes increasingly global, providing us with data from multiple cultures.

Neuroscientists can already demonstrate that our brains undergo significant biochemical changes in response to various sociocultural pressures and that those pressures bring about predictable behavioral responses. As imaging technologies become more sophisticated and widespread, neuroscience will generate theories about the kinds of biochemical and behavioral responses that generally occur during times of great economic stress or among populations living under authoritarian political regimes (for this reason, I imagine that many neuroscientists would probably give their left hemisphere in order to be able to conduct a comparative neurological study of North and South Koreans). Such theories and insights will enable us to add some neurobiological depth to our studies of the past. After all, our historical explanations already employ numerous modern sociological and psychological theories largely derived from studies of twentieth-century populations. If neuroscience were able to demonstrate, for example, that the stress of Israeli occupation is triggering certain neurological responses among the Palestinian population, then we could assume that similar neurological processes generally occur under conditions of colonization. This may help us better explain historical behavior that otherwise appears puzzling or aberrant.

In addition to giving us much to think about in terms of understanding some key developments in the history of Western thought, including the predilection for reductive thinking at the expense of holism, McGilchrist's brilliant interdisciplinary synthesis also offers a model for how humanities scholars can begin to integrate the findings of neuroscience into their work. This is not to suggest that historians should immediately and uncritically embrace neuroscience. After all, the revolution, for all its intriguing discoveries, is probably still in its infancy. Nevertheless, its insights into the nature of human cognition are too important for historians to ignore.

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