4-25-2017


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Reviewed by Marek J. Celinski

This book is recommended to scholars interested in the opportunities and limits which the human brain and mind reveal to us about who we are and how we are able to make sense of our experiences which shape our relationships to each other and to the world at large.

The book has two parts: *The Divided Brain* and *How The Brain Shaped Our World.*

*The Divided Brain* describes how our divided brain (and mind) appreciates reality, an appreciation which is then projected back on the psychosocial and physical environment. The primary reference is to the anatomical structure of the brain, which consists of two hemispheres that create two fundamentally opposed visions of the world; these world images and representations need to be integrated, but there is a tendency of one hemisphere to dominate over another one which is reflected in cultures and civilizations.

The differences between the hemispheres are not attributed to language, which is a specifically human ability, but, more deeply, to the phylogenetic development of vertebrates. The differences are noted in attention, perception and an attitude to reality and others. Some differences in divided attention are observed even in the lower animals and birds. On one hand, there is a need to focus attention narrowly and with precision, for example, to focus on the grain of corn that must be eaten; on the other hand, and at the same time, there is a need for paying attention as much as possible to guard against a possible predator.

The point is that hemisphere functional specialization brings evolutionary advantages particularly in carrying out dual attention tasks. The right hemisphere enables breadth and flexibility of attention, whereas the left hemisphere provides a capacity for focused attention. This has the related consequence that the right hemisphere sees things as a whole and in their context, whereas the left hemisphere sees things abstracted from the context and broken into parts from which it then reconstructs a whole which becomes different from the original object. In general, the right hemisphere seeks to identify individuals, whereas the left hemisphere’s tendency is to classify them; but both hemispheres are involved in recognition.

Each hemisphere helps us to make sense of reality by creating a recognizable image which otherwise would be an amorphous mass of impressions. The right hemisphere’s version is a more global and holistic recognition of similarity, giving an idea of how a particular object is positioned in the relations to other objects, whereas the left hemisphere identifies single features that would place the object in a certain abstract category.
The right hemisphere has an affinity with whatever is living; the left hemisphere has an equal affinity with what is mechanical. The left hemisphere’s principal concern is utility. It is interested in what is made and in the world as a resource to be used. It is, therefore, natural that it has a particular affinity for words and concepts for tools, man-made things, mechanisms and whatever is not alive.

It turns out that the capacities that help us, as humans, form bonds with others (empathy, emotional understanding and so on) involve the broadly spread awareness of the world which is largely a function of the right hemisphere. Self-awareness, empathy, identification with others, and, more generally, intersubjective processes are largely dependent on right-hemisphere resources. When we put ourselves in another’s shoes we are using the right inferior parietal lobe and the right lateral prefrontal cortex which is involved in inhibition of the automatic tendency to impose on others one’s own point of view. The right hemisphere plays an important role in what is known as “theory of mind,” a capacity to put oneself in another’s position and to see what is going on in that person’s mind. This capacity emerges in primates along with self-recognition and self-awareness, and is closely linked to it.

It is the right hemisphere that understands the emotional or the humorous aspects of a narrative and recognizes emotions through facial expression.

There is some evidence that whereas control of body functions through the sympathetic nervous system is more influenced by the right hemisphere, the parasympathetic nervous system is more under left hemisphere control. Whereas the parasympathetic nervous system produces relaxation of autonomic functions appropriate as responses to the familiar, the known and the emotionally more neutral environment, responding to new, uncertain and emotionally demanding situations is the special domain of the vigilant right hemisphere. The right hemisphere is more intimately connected with the unconscious and automatic systems for regulating the body and its level of arousal through the sympathetic nervous system that modulates heart rate, blood pressure and neural endocrine functions in connection to emotions.

In the perception of time, the right hemisphere is required for sustained monitoring of temporal information, whereas the left hemisphere is more efficient for detection of brief temporal flow interruptions where there is needed focus on the moment.

Moral judgment involves a complex right hemisphere network (particularly the right ventral, medial and orbitofrontal cortex as well as the amygdala in both hemispheres). Damage to the right prefrontal cortex may lead to frank psychopathic behaviour. Our sense of justice is underwritten by the right hemisphere, particularly by the right dorsolateral prefrontal cortex. With inactivation of this area, we act more selfishly. This is probably related to the right frontal lobe’s capacity to see the other’s point of view and to exhibit empathy in general.
The self is a complex concept but the self is intrinsically, empathically inseparable from the world in which it stands in relation to others and the continuous sense of self is more dependent on the right hemisphere, whereas the self as an expression of will is generally more dependent on the left hemisphere. The personal sense of the self with a history and emotional memory as well as what is sometimes called the self-concept, appears to be dependent to a very large extent on the right hemisphere. The self-concept is impaired by a right hemisphere injury, wherever in the right hemisphere it may occur, but the right frontal region is of a critical importance here. It is also the right hemisphere which is responsible for maintaining a coherent, continuous and unified sense of self. Right frontal damage impairs the sense of self over time, which relies on the self narrative and gives us a sense of a continuous flow-like existence.

The right hemisphere (usually involving the right frontal lobe) plays the principal role in activities that involve creative imagination, the capacity for spiritual (religious) inspirations and morals, music, dance, love of nature, a sense of humor and laughing, and the ability to change one’s mind. Whereas the left hemisphere's relationship with the world manifests as reaching out to grasp, use and control, the right hemisphere’s activity appears to be one of reaching out without purpose. The main difference between the hemispheres is that the left hemisphere always has in view the purpose or use, and is more the instrument of our conscious will than the right hemisphere. The fundamentally opposite tendencies are for the left hemisphere to evaluate the objective reality for its personal utility, whereas the right hemisphere tendency is towards the sense of connectedness and a relationship with whatever lies outside the self. One tendency drives people to acquire power and control in the service of unitary survival; the essentially opposite drive is toward cooperation, synergy and mutual benefits based on collaboration in the service of the survival of the group.

The two hemispheres give us an opportunity to understand reality from their two opposite perspectives. The left hemisphere makes sense of reality by amalgamating the parts from the bottom up to create a cohesive structure, while according to the right hemisphere, our understanding of reality is derived from the whole since it is only in the light of the whole one can truly understand the nature of the parts. The right hemisphere gives a global intuitive impression of the world that was a whole before the left hemisphere’s separation and analysis transformed it into something else, a “representation” of reality which eventually needs to be reintegrated in the light of the whole.

By representing the world in a more abstract way, the left hemisphere provides us with the more detached representation of reality, whereas the right hemisphere gives an opportunity for experience of reality in a more direct manner and to take us beyond to something new, something other than ourselves. The right hemisphere is always open to nature, to whatever is new that comes from experience from the world at large. The left hemisphere’s dependence on language and abstraction yields the clarity and power to manipulate things that are static and isolated but ultimately lifeless; by contrast, the right hemisphere yields a wealth of individual experiences with the nature of things that are never fully graspable and can potentially cause harm because of their uncertainty. This is an inspiration for
philosophy which begins with wonder and sense of incompleteness and ambiguity. The process of acquiring knowledge typically proceeds from the right hemisphere to the left hemisphere and back to the right hemisphere.

Western philosophical thought, especially Heidegger's or Nietzsche's, represents a combination of the right hemispheres desire for understanding something beyond immediate reach and the left hemisphere efforts to achieve that ends. McGilchrist connects his ideas with Heidegger's concept of truth. Heidegger regards truth as “unconcealing,” a process moving towards something which is hidden but never fully seen. This is by contrast to understanding truth as correctness, which assumes that in principle complete knowledge can be achieved.

However, the story of the Western world is one of increasing the left hemisphere domination. This is specifically addressed in the second part of the book, “How The Brain Has Shaped Our World,” which documents how in the Western civilization the balance between the hemispheres has switched towards the left hemisphere, which makes us believe that we can do anything, and achieve everything through our own efforts. By comparison the hemispheric balance in the Far Eastern cultures is based on more equal representation of the two hemispheres. The left hemisphere dominates our understanding of reality as viewed through the selection of words and through an organization resembling a mechanistic system. Heidegger noted a gradual encroachment of rationality on the natural territory of intuition or instinct. We transmit this attitude through culture when we select the behavioral models to imitate, and we become what we imitate. The contemporary hemispheric imbalance represents not a structural shift in the brain but a functional shift which was initiated by imitation of beliefs and practices of how reality was seen and by ways of being in the world which favor one or the other hemisphere. In the next generation such habits of mind and brain may be replicated by epigenetic mechanisms that encourage the trends. As we rely on choosing our own values and ideas, this process is guided by the left hemisphere.

It is McGilchrist’s thesis that in recent Western history our contemporary world skills have been downgraded and converted into algorithms so that we are busy imitating machines. Initially there was more symmetry and balance in manifestations of the hemispheric functions in our behavior; however advancement in the functioning of the frontal lobes (whose major purpose is to allow for appreciation of distance in space and delay in time) caused our detachment from our world and from ourselves.

There are positive implications of such an attitude, reflected especially in the Western culture and civilization. This attitude enables us to rise above the world in which we live, to plan, to think flexibly and inventively, and, in brief, to take control of the world around us rather than simply responding to it passively. This development at its best offers far greater capacity to speculated, to consider the lessons of the past, to project a vision of the possible into the future. It requires recording to externalize and establish more permanent traces of the mind’s working. This results in a huge expansion of written words in
documenting observations of nature and keeping records of historical events, as well as a development of diagrams, formulas and maps. But it also stops the flow of life and necessitates more reliance on the left hemisphere.

Ancient Greeks began the process of standing back by theorizing about the political state, developing maps, and observing the stars and the objective natural world, all activities that may be mediated by the left hemisphere, even though the urge to perform them comes from the right. The story of Prometheus portrays human nature as facing a dilemma of the two hemispheres which ends in tragedy; there is a desire to help people and a downfall through hubris. This represents the paradox of self consciousness and the beginning of the mind coming to know and understand its own nature.

From the perspective of bicameral brain diversity McGilchrist offers an insightful analysis of the Ancient World, Renaissance, Reformation and Enlightenment, Romanticism and Industrial Revolution along with Modern and Post Modern Worlds. These sections may be particularly interesting for students of civilizations. Those readers who do not wish to go through the anatomical and functional details that underlie evolutionary societal changes may go directly to these chapters based on the summary of the previous chapters that I provided in this review.

I consider this to be an important book for understanding who we are because of our brain structure and what our brain compels us to discover about ourselves in the course of our individual lives and historic development. Knowledge of brain-related inclinations and predispositions also forces us to ask the question how predetermined we are by our brain structure (and the corresponding functions) and whether there is room for it to be transcended.