



## A Life in Neuroscience

A review of

### **Tales from Both Sides of the Brain: A Life in Neuroscience**

by Michael S. Gazzaniga

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Reviewed by

Antonio E. Puente

Michael Gazzaniga describes a remarkable and distinguished “Life in Neuroscience.” Using four sections and nine chapters across 420 pages, along with an epilogue and a very interesting appendix as well as a comprehensive index, Gazzaniga shares his acumen and love for science and the brain.

Professor Gazzaniga has provided a personal history of discovery and its dissemination. Though there are many more accomplishments, here are but a few that one can glean from this autobiography: (1) Gazzaniga’s research on split brains, which started during the early 1960s, has spanned over 50 years. (2) He brought into the study of the cerebral hemispheres the interface among neuropsychological, neuroradiological, and neurophysiological measures for assessing cerebral function. (3) Along with this addition, the methodological advancements of partial splits, and testing before and during staged splits, add unique perspective heretofore not considered. (4) The increased understanding of both how emotion and laterality interface and the ways that the two hemisphere communicate, as well as the unique role of the right hemisphere, are pioneering and fundamental to brain science. (5) Finally, Gazzaniga leaves with a paradigm of how to be recruited, recruit the brightest minds, and develop major scientific centers as well as journals and associations.

His story begins with meeting Roger W. Sperry in his office at the California Institute of Technology (Caltech). Though Sperry had been working on neurodevelopmental circuits, it was the split-brain research that “hooked” Gazzaniga. He describes the electric atmosphere and the constant activities at Caltech with Nobel Prize winners, such as Richard Feynman, Sperry’s graduate students, post-docs like Chuck Hamilton and Colwyn Trevarthen, and visiting scientists like Brenda Milner.

In Section 1, Gazzaniga quickly engages the reader with his excitement while describing split-brain research at Caltech. The behind-the-scenes descriptions and explanations of the patients, methods, outcomes, and implications of the research are both intrinsically detailed and very interesting. In addition, he emphasizes the social and political side of science as well as the value that each person involved in his life brought as his horizons expanded. The description of his mentor, Roger W. Sperry (psychology’s first Nobel Prize winner in 1981), is accurate, insightful, and entertaining.

By the time Section 2 gets moving, the reader begins to appreciate Gazzaniga’s personal contribution to split-brain research. His collaboration with others (especially LeDoux) and his ingenuity in doing the research (e.g., the van purchased to bring the experiments to the patients) provide an initial perspective of the way that he expanded Sperry’s elegant research questions and methodology.

In both Sections 2 and 3, one begins to see Gazzaniga’s unique contribution to neuroscience. Beyond his critical work on the split brains, he founded important centers, journals, and societies. Like James McKeen Cattell, one of the founders of psychology, Gazzaniga clearly is neuroscience’s trailblazer in the establishment of ways to create,

disseminate, and emphasize its importance both to science and to society.

The unusual detail provided in describing split-brain experiments and patients is the highlight of this volume. However, Section 4 also provides unusual glimpses into such areas as (1) how science works, (2) the foundations of neuroscience, and (3) the concept of layering and modularity to develop a dynamic system. The questions he poses of how mental unity comes out of a modular brain and how, in turn, this is affected and directs evolution are fascinating.

Nevertheless, there are a few limitations and remaining questions. The smaller concerns involve the limited transition from one topic to another. For example, at the end of Chapter 2 he provides a short paragraph about Sperry's Nobel Prize with no clear transition into or out of the topic. This makes for somewhat choppy reading across a vastly engaging book. A second point is the focus on certain topics that are unclearly defined as to how they fit in. A major one is his focus on the homes that he and his family have lived in. Though they are all described in exquisite detail and come across as beautiful, their description appears disjointed with the rest of the book. As well, his foci on friends, especially ones who are well known such as James Crick, are also disconnected. Outside of a few relationships that have deep impact, such as those with Leon Festinger and David Premack, others (e.g., Steve Allen) do not seem to bring further insight into the book's central theme.

After reading 361 pages of intrinsic details and behind-the-scenes views of how this journey has evolved, one is left hanging as to what all this means. Gazzaniga provides some interesting ideas in the last section, and certainly in the last chapter. But his discussion of modularity, adaptation, and evolution piqued my interest in the next step and left me wondering, is there still another book left in Professor Gazzaniga's repertoire? Whereas this book was a scientific autobiography and his ninth book, the foundations for what is to come have been provided in passing. Along with wondering why he moved so many times, especially considering what excellent positions he always had, and wondering why there was so little about his personal life, especially before Caltech, one thinks that surely there will be a tenth volume that will answer these questions and provide a more comprehensive blueprint for the next generation of neuroscientists and neuropsychologists.

The major disappointment in *Tales from Both Sides of the Brain* is the paradoxical perspective provided by Gazzaniga about his major professor. Sperry is described as "the man" and one of the greatest scientists of his time. Gazzaniga's comment in *Science* in response to Sperry getting the Nobel Prize in 1981 is beyond kind, as well as comprehensive and enlightening. Yet there are inexplicable negative comments about Sperry. On page 75, for example, Gazzaniga suggests despite his continued admiration of Sperry, Sperry wrote "rather ghoulish and misleading letters" to him. There is probably another side to the disagreement between the two, and that story will presumably be told in the future.

Regardless of the small flaws and the few questions left unanswered, this is a must-have book for neuroscientists, neuropsychologists, and individuals interested in understanding how one searches for a more comprehensive understanding of the workings of mind and brain.

