# Music of the Hemispheres

#### THE SOCIAL BRAIN

Discovering the Networks of the Mind. By Michael S. Gazzaniga. Illustrated. 219 pp. New York: Basic Books. \$17.95.

#### By Daniel C. Dennett

URING the last 25 years several dozen people with severe and otherwise untreatable forms of epilepsy have been subjected to a bold operation that - roughly speaking - splits the brain in two. The effects of this operation have in a few cases been so strange and perplexing that they now serve as irresistible showcase phenomena for those speculating on the mind and consciousness. Does the operation turn a single person into two people inhabiting one body? Is the "person" of the usually silent (right) hemisphere conscious? The facts, in their most unvarnished form, are complex and extraordinarily hard to interpret with any confidence, but few if any who have studied such "split-brain" patients would deny that one mind-boggling thing or another must be going on in them.

Michael S. Gazzaniga, the director of the Division of Cognitive Neuroscience and a professor of neuropsychology at the Cornell University Medical Center in New York City, has studied the cases most closely over the years, becoming in effect the Corrator of these living museum pieces, a difficult and controversial role he has played with responsibility. He has written several books, among them "The Bisected Brain" (1970) and, with Joseph Le-Doux, "The Integrated Mind" (1978), and the prospect of a new work by him is mouthwatering - an eloquent authority writing informally about a fascinating subject. But alas, he has tried to compress three books into one in "The Social Brain," and ends up doing justice to none of his projects.

He attempts to intermingle his straightforward description of split-brain phenomena with an anecdotal account of his career, and then uses this twin booster to launch his own speculative theory of how the mind's activities emerge from the brain's processes, that is, how the events we know at first hand, from our own introspection, relate to the events observed by scientists studying our brains. We learn from the autobiographical material that his career has been a succession of thrilling moments among brilliant and charming people, but we have to take his word for it, since he does not take the space to develop the cast of characters, and the same proves true of his treatment of his pet theory.

The brain, in Mr. Gazzaniga's view, is a loosely organized and incompletely intercommunicating bundle of "modules" - partially independent and occasionally even competitive systems specializing in particular cognitive tasks such as recognizing faces or locating objects in space. The mind, then, is not the monolithic pilot of the body it has seemed to many - from Descartes in the 17th century to casual writers on the mind today. It is not perfectly transparent to itself, has no "transcendental unity" and is often (self-)deceived about the springs of its own activities. One of the modules, resident normally in the left cerebral hemisphere, is a relent-

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Michael S. Gazzaniga.

less interpreter of the body's actions, a sort of tireless press agent always doing its best to rationalize and make presentable the chaotic effects that occur when teamwork among the other modules breaks down. Thanks to its ingenuity, the illusion of unified, rational, free-willed selfhood is preserved (for instance, when memory fails in patients suffering from Korsakoff's syndrome, they blithely and effortlessly confabulate, covering up for the internal deficit with fictitious events).

The implications of this vision are not trifling, for science or for society. Dispelling traditional notions of the mind and the individual might well change our political and moral beliefs, and Mr. Gazzaniga is not shy about drawing our attention to the implications he finds compelling, ranging from an analysis of the source and staying power of religious belief to a challenge to the concept of welfare rights.

But he is too good a scientist to think he can prove anything so momentous in a book like this. Many enthusiastic but dubious claims have been made in recent years about hemisphere specialization. Mr. Gazzaniga, having devoted a chapter to debunking the most ardent of these manias, is careful to speak of what his researches (and others') "suggest" to him. The truly exciting split-brain cases are rareties among rareties — approximately one in a billion - and whatever one spies through this narrow window, no matter how vivid, must be treated as a hint only. We have come a long way in the last few decades - indeed, to the point where grand psychoneurological hypotheses tempt and tantalize many of the soberest citizens of science but such speculative theorizing must still be considered scarcely more than hopeful guessing.

O this book is an advertisement for a way of thinking about the brain and mind, not science for scientists. The ideas it introduces are currently much discussed in certain scientific quarters. "Modularity" is the buzzword of the moment, and the notion of the mind as a social organization of subsystems or homunculi has more than a handful of devotees in addition to Mr. Gazzaniga. Speaking as one of them, I think there are better arguments to be made for this view than Mr. Gazzaniga musters. But these arguments, because they involve rather intricate reasoning about the implications of a broad range of empirical findings, are not yet accessible to the general reader. In the meantime, this book can serve as a provocative introduction to some new and unsettling ways of thinking about the human mind.

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