



Discoveries in the Human Brain: Neuroscience Prehistory, Brain Structure, and Function

By Louise H. Marshall, Horace W. Magoun

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Editorial Review

From The New England Journal of Medicine

As the decade of the brain draws to a close, it is worthwhile to review some of the progress made in advancing our knowledge of this fascinating and enigmatic structure. Louise Marshall (director of the Neuroscience History Archives at the Brain Research Institute) and Horace Magoun (a noted research neuroscientist who unfortunately died before the completion of this book) have taken on a huge subject, but they have succeeded in rendering it not only comprehensible, in spite of the convoluted twists and blind alleys that constitute the development of neuroscience, but also genuinely interesting. Their presentation allows the story to speak for itself as much as possible. The reader is able to appreciate how, as Thomas Kuhn noted, scientific progress is generated by cycles of concept and counter-concept that successively fit the experimental data better -- the energy generated by differences of opinion serving to drive researchers forward to find ways to support their own ideas and refute those of others.

An attractive feature of this book is due to its origin as a series of historical posters that Magoun exhibited at various international meetings. The book is highly visual, illustrated throughout with pictures that have been well chosen to help convey rapidly and accurately what the various investigators made of what they were seeing. It is also amply illustrated with pictures of the investigators themselves. These serve to break up and individualize the panoply of views presented. The book is peppered with quotations from the great figures in the history of neuroscience, and the authors have leaned heavily (as they freely admit) on the bible: Clarke and O'Malley's *History of the Brain and Spinal Cord* (Berkeley: University of California Press, 1968). The quotations have been well chosen to demonstrate just how carefully the investigators, perhaps mindful of the many controversies that dog their subject, interpreted their findings. One of the quotations, from Santiago Ramon y Cajal, is a warning to all current and budding neuroscientists: "The supreme dignity which surrounds the brain and the awesome complexity of its workings presuppose the existence of an extremely complicated warp, sure to ensnare those who imagine that nature unfolds multifarious exalted phenomena according to schematic formulae."

The topics covered represent a fair survey of our knowledge until the beginning of the 1970s, the stated end point of the authors. The book starts with some general issues, such as theories of phylogeny and ontogeny, and then addresses the interpretation of the cerebral structures, with the history of interpretations for each structure treated separately, culminating in syntheses of theories to explain three major integrative systems: the limbic system and memory, corticothalamic connections and cybernetics, and the brain-stem reticular formation and arousal. Although the book ends at a point where the field accelerates and diversifies rapidly, it provides a sound basis for surveying the newer developments. One stated aim of the authors is to demonstrate how collaborations between different disciplines (such as that between experimental psychology and neuroanatomy) have often led to breakthroughs in science. The strengths and weaknesses of such approaches (the former due to the extra insights gained, and the latter to the use of unjustifiable assumptions) are noted throughout, and they prove instructive.

This book is certainly sufficiently clear and well illustrated to be of interest to general clinicians as well as workers in neuroscience or the cognitive sciences. It is also refreshingly free of jargon. I highly recommend the book both as an introduction to the history of neuroscience and as a secondary source, since it includes comprehensive references. The book's quality and reasonable price (thanks to a charitable grant) should thus attract many and varied readers.

Reviewed by David Maudgil, M.R.C.P.

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Review

". . . a remarkable work of science, art, and history. . . The rich heritage of neuroscience comes alive here, even for the general reader. . . fascinating and valuable reading"-Choice: Current Reviews of Academic Books

"This excellent book. . . should be of interest to neurologists, neurosurgeons, neuroscientists, and others interested in the history of neuroscience."-Journal of the American Medical Association

". . . [a] very fine book. . . the reader will be impressed not only with the text, but also with the style and quality of presentation by Humana Press. The quality of the paper, the layout, and the reproductions of photographs are for the most part outstanding."-Einstein Quarterly

"...The book is filled with interesting pictures of contributing scientists and their laboratories, as well as figures and diagrams, and will be of interest to investigators actively involved in neuroscience research. The book is well written and easy to read. It is enjoyable from the historical standpoint and also valuable for the amount of neuroscientific data available in the text and the references...the book clearly accomplishes its objective to present the discoveries in the human brain and is highly recommended to all interested in this subject."-The Journal of Nervous and Mental Disease

From the Back Cover

In *Discoveries in the Human Brain* Louise Marshall and Horace Magoun capture the grand sweep of human brain history leading to the emergence of modern neuroscience as a multidisciplinary field incorporating anatomical, behavioral, cellular, and medical knowledge. The book chronicles—from the time of early humans to the 1980s—the many significant people and events that gradually produced today's understanding of brain anatomy and physiology. Enlightening and engrossing throughout, Dr. Marshall's survey traces this unfolding story from the first findings of gross neuroanatomy in the ancient world to today's functional analysis of the electrophysiology of nerve impulses; from early discoveries of the existence and operations of the central nervous system to, finally, the developments in brain chemistry and pharmacology that have now brought us to neural networks and brain modeling. Throughout there are numerous historic and rare plates, a rich tapestry of quotations from primary sources, and concise summaries of the pathbreaking research that shaped and determined modern neuroscience.

Discoveries in the Human Brain illuminates for neuroscientists, neurologists, historians of medicine and science, as well as the educated reader all the major landmarks in the development of neuroscience and its various subdisciplines, ranging from anatomy, chemistry, and physiology, to biomathematics, biophysics, psychobiology, and physiological psychology. It will prove indispensable reading for everyone wanting to understand the evolution of neuroscience and the broad interdisciplinary foundation on which our knowledge of mind-brain relations and human consciousness rests.

Users Review

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Susan Ford:

Have you spare time for the day? What do you do when you have a lot more or little spare time? Yeah, you

can choose the suitable activity to get spend your time. Any person spent all their spare time to take a go walking, shopping, or went to the particular Mall. How about open as well as read a book entitled Discoveries in the Human Brain: Neuroscience Prehistory, Brain Structure, and Function? Maybe it is being best activity for you. You recognize beside you can spend your time using your favorite's book, you can wiser than before. Do you agree with their opinion or you have some other opinion?

Elisa Dumont:

The reason why? Because this Discoveries in the Human Brain: Neuroscience Prehistory, Brain Structure, and Function is an unordinary book that the inside of the book waiting for you to snap that but latter it will distress you with the secret this inside. Reading this book alongside it was fantastic author who else write the book in such incredible way makes the content inside easier to understand, entertaining way but still convey the meaning entirely. So , it is good for you because of not hesitating having this anymore or you going to regret it. This unique book will give you a lot of rewards than the other book have got such as help improving your ability and your critical thinking way. So , still want to postpone having that book? If I ended up you I will go to the book store hurriedly.

Jillian Harrington:

Reading can called imagination hangout, why? Because when you find yourself reading a book specially book entitled Discoveries in the Human Brain: Neuroscience Prehistory, Brain Structure, and Function your head will drift away trough every dimension, wandering in every single aspect that maybe unfamiliar for but surely will end up your mind friends. Imaging every single word written in a publication then become one type conclusion and explanation that will maybe you never get ahead of. The Discoveries in the Human Brain: Neuroscience Prehistory, Brain Structure, and Function giving you one more experience more than blown away your mind but also giving you useful information for your better life with this era. So now let us present to you the relaxing pattern is your body and mind will be pleased when you are finished studying it, like winning a. Do you want to try this extraordinary spending spare time activity?

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