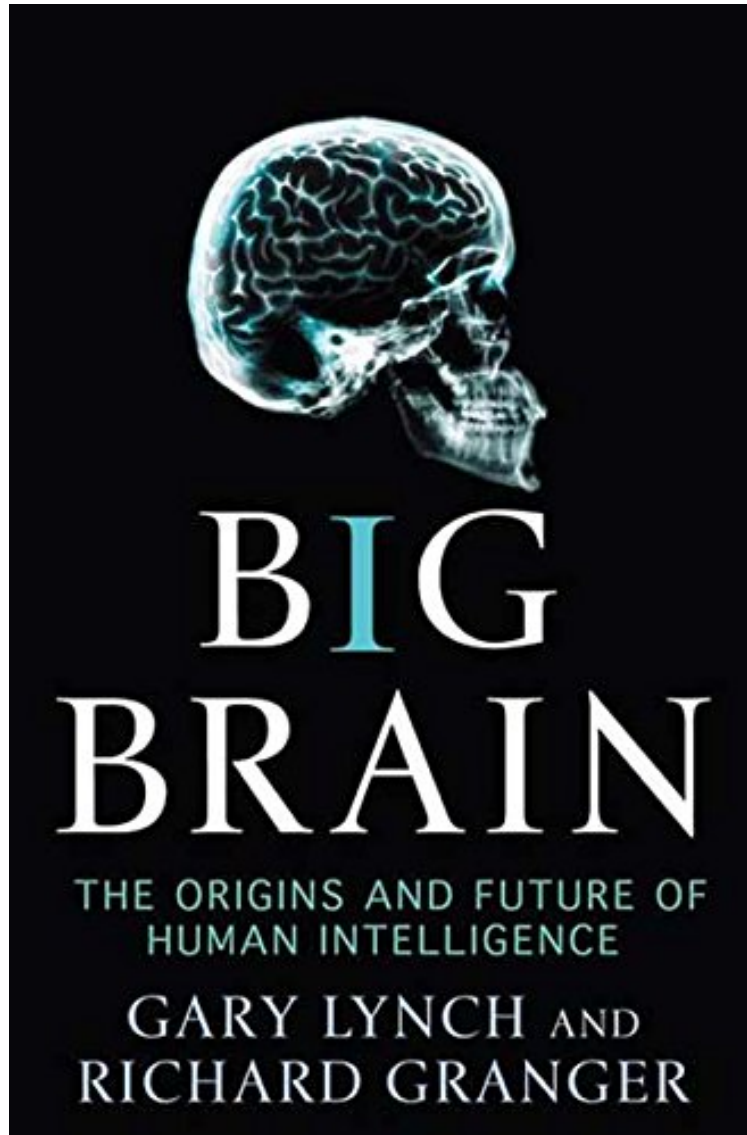


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Big Brain: The Origins and Future of Human Intelligence (MacSci)

Gary Lynch, Richard Granger

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#1220071 in Books Gary Lynch 2009-01-06 2009-01-06 Original language: English PDF # 1 228.60 x 15.37 x 6.001, .65 #File Name: 1403979790272 pages Big Brain The Origins and Future of Human Intelligence | File size: 39.Mb

Gary Lynch, Richard Granger : Big Brain: The Origins and Future of Human Intelligence (MacSci) before purchasing it in order to gauge whether or not it would be worth my time, and all praised Big Brain: The Origins and Future of Human Intelligence (MacSci):

0 of 0 people found the following review helpful. Fun book with some good insights on development of the human sensory system, the paleocortex and the neocortex. By Peter Rogers MD Gary Lynch is a brilliant, outspoken

neuroscientist. I enjoyed the biography about his work on memory called 101 theory drive. This book talked too much about the Boskops which was a distraction. The best part was the theoretical framework for understanding how the human brain evolved from prototype reptilian-dinosaur and primitive mammalian systems. He builds it up step by step. I also liked his discussion of paleocortex versus neocortex. Human neurons have more interconnections than those of other primates. Physical body health is all about keeping the arteries open. Brain health is all about making and maintaining neuronal connections. The mention of the Lionel Standing paper on 10,000 pictures and visual memory was also very interesting. 2 of 2 people found the following review helpful. neuroscience in a nutshell By arpard fazakas A fun romp through the fields of brain anatomy, biology, and evolution. The authors cover most of the key areas while touting their own hypotheses that the entire mammalian neocortex developed from the olfactory cortex and that in brain evolution, random mutations leading to increased brain size occur first followed by the elaboration of functions for the new territories. Particularly interesting is the use of a computational model to suggest how corticothalamic oscillations refine cognition from category to specific example. The writing style is occasionally incoherent, and the figures are sometimes less than illuminating, but by and large the concepts are presented in an understandable way to the layman. Unfortunately the authors have succumbed to the temptation to increase the book's sales by adding some pop-science speculation on the future of human intelligence, and by presenting as fact the rather far-fetched notion that a separate hominid species with super-sized brains (the Boskops) lived among us as recently as 10,000 years ago and then became mysteriously extinct. Entertaining, but definitely at odds with the more serious and well-grounded topics that make up the bulk of the book. All in all, a good read for anyone without a background in the field who would like to learn something about recent developments in the science of the brain. 5 of 6 people found the following review helpful. Strong on Neurocircuitry, Weak on Evolutionary Biology By Herbert Gintis This book is accessible to the lay reader, and is strong on brain architecture, neurocircuitry, and comparative brain anatomy across vertebrates. The most interesting set of facts is a graph on p. 143 showing that the relative size of three major brain regions, the diencephalon, the midbrain, and the neocortex, follow power laws with respect to total brain weight, with the neocortex having a quite steep positive slope. This means that humans, who are hugely outliers in the ratio of brain weight to total body weight, are right on the power law curve with respect to the relative size of the neocortex. This is a very interesting fact, but the authors use it to make questionable arguments concerning the adaptive significance of the large human brain. They show that there is a constant ratio of newborn size to adult relative brain size, and conclude that whatever led humans to have large, relatively infantile newborns is the cause of humanity's uniquely powerful intelligence. They then say that by walking upright, the human female was capable of producing a much larger newborn. Since walking upright has little to do with intelligence, they conclude that human intelligence is a byproduct of bipedalism. The problem with this argument is that bipedalism may have lowered the cost of producing large, big-brained newborns, but the cost was still very high, in the form of maternal mortality. Hence there must have been some fitness benefit to the large human brain. The writing and the reasoning in this book are not tight, and some of the arguments questionable. But it is lively, instructive, and has lots of nice drawings. There are many interesting asides that keep the reader's attention. Their discussion of race, an elaboration on Lewontin's argument, has been superseded in the literature, but the exposition is very creative.

In this groundbreaking look at the evolution of our brains, eminent neuroscientists Gary Lynch and Richard Granger uncover the mysteries of the outsize intelligence of our ancestors, who had bigger brains than humans living today. Weaving together history, science, and the latest theories of artificial intelligence, Lynch and Granger demystify the complexities of our brains, and show us how our memory, cognition, and intelligence actually function, as well as what mechanisms in the brain can potentially be enhanced, improving on the current design. Author of *The Emotional Brain*, Joseph LeDoux praised it as "provocative and fascinating," and, writing in the *New Scientist*, William Calvin called it "a popular account of how brains enlarge, in both evolutionary and developmental terms" and "a much needed book."

An excellent book...very well written and informative. CHOICE[A] fascinating and provocative account of the human brain's recent past. Joseph LeDoux, author of *The Emotional Brain* A much needed book on big brains Big Brain is a popular account of how brains enlarge, in both evolutionary and developmental terms. The strength of the book lies in the neuroscience, especially its treatment of neural plasticity and the "association areas" of the brain William H Calvin, *New Scientist* The Lynch and Granger combination is like mixing gas with fire. In this book there are big, explosive ideas by two ingenious brain scientists. Michael Gazzaniga, author of *The Ethical Brain* On a planet in which everything seems to be getting bigger (the internet), hotter (our climate), or more numerous (the world's population), Gary Lynch and Rick Granger reveal the intriguing possibility that people with larger brains than us may have been around a few thousand years ago. Their account of the mysteries of the brain and intelligence challenges conventional views in a scholarly yet wonderfully accessible manner. Richard Morris, Director of the Centre for Cognitive and Neural Systems, University of Edinburgh, and President, Federation of European Neuroscience Societies, and Former Chair, Brain Research Association of the United Kingdom Riveting the book tracks the evolutionary development of

the human brain Anthony Doerr, Boston Globe About the Author Gary Lynch is one of the most cited neuroscientists in the world and author of more than 550 scientific articles. He is Professor of Psychiatry at the University of California at Irvine. Richard Granger is the WH Neukom Distinguished Professor of Computational Sciences at Dartmouth. He is internationally recognized for his work in experimental neuroscience.