



The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change)

By Gary F. Marcus

[Download now](#)

[Read Online ➔](#)

The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) By Gary F. Marcus

In *The Algebraic Mind*, Gary Marcus attempts to integrate two theories about how the mind works, one that says that the mind is a computer-like manipulator of symbols, and another that says that the mind is a large network of neurons working together in parallel. Resisting the conventional wisdom that says that if the mind is a large neural network it cannot simultaneously be a manipulator of symbols, Marcus outlines a variety of ways in which neural systems could be organized so as to manipulate symbols, and he shows why such systems are more likely to provide an adequate substrate for language and cognition than neural systems that are inconsistent with the manipulation of symbols. Concluding with a discussion of how a neurally realized system of symbol-manipulation could have evolved and how such a system could unfold developmentally within the womb, Marcus helps to set the future agenda of cognitive neuroscience.

 [Download The Algebraic Mind: Integrating Connectionism and ...pdf](#)

 [Read Online The Algebraic Mind: Integrating Connectionism an ...pdf](#)

The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change)

By Gary F. Marcus

The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) By Gary F. Marcus

In *The Algebraic Mind*, Gary Marcus attempts to integrate two theories about how the mind works, one that says that the mind is a computer-like manipulator of symbols, and another that says that the mind is a large network of neurons working together in parallel. Resisting the conventional wisdom that says that if the mind is a large neural network it cannot simultaneously be a manipulator of symbols, Marcus outlines a variety of ways in which neural systems could be organized so as to manipulate symbols, and he shows why such systems are more likely to provide an adequate substrate for language and cognition than neural systems that are inconsistent with the manipulation of symbols. Concluding with a discussion of how a neurally realized system of symbol-manipulation could have evolved and how such a system could unfold developmentally within the womb, Marcus helps to set the future agenda of cognitive neuroscience.

The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) By Gary F. Marcus Bibliography

- Sales Rank: #369890 in Books
- Brand: Brand: A Bradford Book
- Published on: 2003-01-24
- Original language: English
- Number of items: 1
- Dimensions: 9.00" h x .44" w x 6.00" l, .79 pounds
- Binding: Paperback
- 240 pages



[Download The Algebraic Mind: Integrating Connectionism and ...pdf](#)



[Read Online The Algebraic Mind: Integrating Connectionism an ...pdf](#)

Download and Read Free Online The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) By Gary F. Marcus

Editorial Review

Review

In *The Algebraic Mind*, Marcus dives into the difficult waters of the connectionist-symbolic debate.

(Kenneth J. Kurtz *Cognitive Sciences Society Newsletter*)

In this strikingly original and penetrating book, Gary Marcus examines the core of our understanding of mind and brain: the nature of cognitive architecture. In constructive and incisive analyses, he pinpoints the computational strengths and weaknesses of connectionist and symbol-processing models of the mind, combining attention to minute particulars with an eye to what it all means. *The Algebraic Mind* is a rare and invaluable achievement, which should be required reading for cognitive scientists, cognitive neuroscientists, and researchers in artificial intelligence.

(Steven Pinker, Peter de Florez Professor, MIT, and author of *How the Mind Works* and *Words and Rules*)

Anyone who wants to understand the nature of thought has to come to grips with the controversy between symbolic and connectionist architectures. Marcus's book gives the most sophisticated treatment of this debate to date, showing clearly what is at stake and making a compelling case for an at least partly symbolic architecture.

(Ned Block, Professor of Philosophy and Psychology, New York University)

Marcus provides an insightful analysis of the underlying representations and processes in connectionist models along with a vigorous defense of the role of variables and binding in cognitive processing. This thought-provoking work is certain to inspire debate over the proper way to model the cognitive architecture.

(Arthur B. Markman, Department of Psychology, University of Texas, and author of *Knowledge Representation*)

This book will surprise you. Instead of attacking connectionism, Gary Marcus defends a detailed theory of the proper role of connectionist theory within the cognitive sciences. This is a beautifully clear, fiercely argued book, and it will have a huge influence on how researchers from a range of different perspectives think about the nature of cognition and development.

(Paul Bloom, Professor, Department of Psychology, Yale University)

In this book, Gary Marcus moves the twenty-year-old discussion of connectionism versus symbol manipulation to a higher plane. He carefully delineates three essential features of all symbolic systems, including the grammars of human languages. He then gives principled reasons why the most popular breed of connectionist architectures cannot implement these features, demonstrating that such models cannot be

scaled up from their current modest successes to a full-blown account of language learning. I hope this book encourages a search for new connectionist architectures that can stimulate more fruitful dialogue between linguists and network modelers.

(Ray Jackendoff, Professor of Linguistics, Brandeis University)

Anyone interested in the computational theory of mind and in how the machinery required for the requisite neural structures develops should read this book. It is a masterpiece of clear exposition from someone who has thought long and deeply about these questions.

(C. R. Gallistel, Professor, Rutgers Center for Cognitive Science, Rutgers University)

From the Back Cover

"The Algebraic Mind is a rare and invaluable achievement, which should be required reading for cognitive scientists, cognitive neuroscientists, and researchers in artificial intelligence."

--Steven Pinker, Peter de Florez Professor at MIT, and author of *How the Mind Works* and *Words and Rules*.

"This is a beautifully clear, fiercely argued book, and it will have a huge influence on how researchers from a range of different perspectives think about the nature of cognition and development."

-- Paul Bloom, Professor, Department of Psychology, Yale University

"a masterpiece of clear exposition from someone who has thought long and deeply about these questions."

-- C. R. Gallistel, Professor of Psychology, Rutgers University

About the Author

Gary F. Marcus is Associate Professor of Psychology at New York University.

Users Review

From reader reviews:

Lois Reyna:

Now a day people that Living in the era everywhere everything reachable by connect with the internet and the resources included can be true or not require people to be aware of each details they get. How a lot more to be smart in getting any information nowadays? Of course the reply is reading a book. Reading through a book can help men and women out of this uncertainty Information especially this The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) book because this book offers you rich data and knowledge. Of course the details in this book hundred pct guarantees there is no doubt in it you probably know this.

Jeffrey Messina:

Information is provisions for folks to get better life, information nowadays can get by anyone with everywhere. The information can be a information or any news even a problem. What people must be consider while those information which is inside former life are hard to be find than now's taking seriously

which one is acceptable to believe or which one often the resource are convinced. If you obtain the unstable resource then you understand it as your main information we will see huge disadvantage for you. All those possibilities will not happen throughout you if you take The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) as your daily resource information.

Lorenza Jones:

Reading a book for being new life style in this year; every people loves to examine a book. When you examine a book you can get a great deal of benefit. When you read guides, you can improve your knowledge, since book has a lot of information in it. The information that you will get depend on what sorts of book that you have read. If you would like get information about your research, you can read education books, but if you want to entertain yourself you are able to a fiction books, this sort of us novel, comics, and soon. The The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) provide you with a new experience in examining a book.

Ronald Sadowski:

As a student exactly feel bored in order to reading. If their teacher inquired them to go to the library in order to make summary for some book, they are complained. Just little students that has reading's heart or real their leisure activity. They just do what the educator want, like asked to go to the library. They go to there but nothing reading critically. Any students feel that looking at is not important, boring in addition to can't see colorful photos on there. Yeah, it is to get complicated. Book is very important to suit your needs. As we know that on this period, many ways to get whatever we wish. Likewise word says, many ways to reach Chinese's country. Therefore , this The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) can make you feel more interested to read.

Download and Read Online The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) By Gary F. Marcus #JZ6KVA54WIL

Read The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) By Gary F. Marcus for online ebook

The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) By Gary F. Marcus Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) By Gary F. Marcus books to read online.

Online The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) By Gary F. Marcus ebook PDF download

The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) By Gary F. Marcus Doc

The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) By Gary F. Marcus MobiPocket

The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) By Gary F. Marcus EPub

JZ6KVA54WIL: The Algebraic Mind: Integrating Connectionism and Cognitive Science (Learning, Development, and Conceptual Change) By Gary F. Marcus