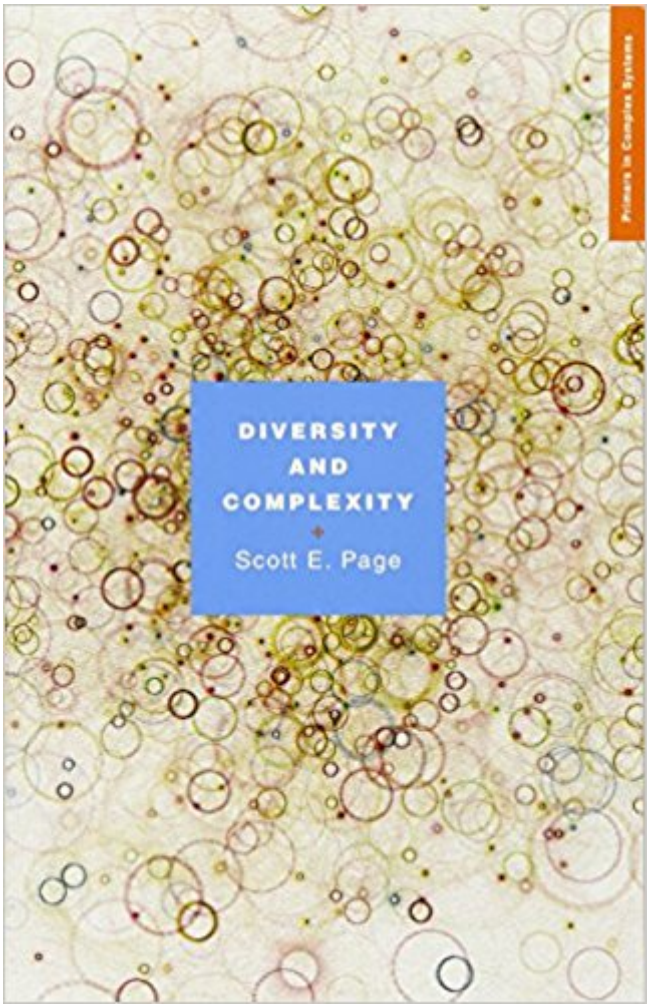
Diversity And Complexity (Primers In Complex Systems)



Synopsis

This book provides an introduction to the role of diversity in complex adaptive systems. A complex system--such as an economy or a tropical ecosystem--consists of interacting adaptive entities that produce dynamic patterns and structures. Diversity plays a different role in a complex system than it does in an equilibrium system, where it often merely produces variation around the mean for performance measures. In complex adaptive systems, diversity makes fundamental contributions to system performance. Scott Page gives a concise primer on how diversity happens, how it is maintained, and how it affects complex systems. He explains how diversity underpins system level robustness, allowing for multiple responses to external shocks and internal adaptations; how it provides the seeds for large events by creating outliers that fuel tipping points; and how it drives novelty and innovation. Page looks at the different kinds of diversity--variations within and across types, and distinct community compositions and interaction structures--and covers the evolution of diversity within complex systems and the factors that determine the amount of maintained diversity within a system. Provides a concise and accessible introduction Shows how diversity underpins robustness and fuels tipping points Covers all types of diversity The essential primer on diversity in complex adaptive systems

Book Information

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Customer Reviews

"Scott Page effectively illustrates the multiplicity of results from diverse aspects of complex systems. While all too many social scientists have tried to focus on making analysis simple, Page points out

that this overlooks the great variety of relevant material in our social worlds. I am looking forward to having my students read it in my graduate seminar and encourage others to do so as well."--Elinor Ostrom, winner of the Nobel Prize in economics"At once clear and precise, Page not only makes a persuasive case for the advantages of diversity in biological, ecological, and social systems alike, but also provides the reader with the analytical tools necessary to engage real-world debates in a rational, even quantitative manner. The result is a valuable primer on a difficult and important subject."--Duncan J. Watts, author of Small Worlds: The Dynamics of Networks between Order and Randomness"Scott Page has performed a remarkable work of synthesis. The concepts of diversity and its implications for performance and growth are common to many fields, especially biology and economics. Page has drawn these illustrations together and shown the common elements and how each field illuminates others."--Kenneth J. Arrow, winner of the Nobel Prize in economics"Page engagingly seduces readers into rather deep ideas in complex systems, including sophisticated mathematical formulas, by using a relaxed style with lots of examples. Yet the treatment is rigorous."--Simon A. Levin, Princeton University"One of the book’s many strengths is that it draws upon insights from seemingly disconnected areas of research and shows how they can be viewed within a common framework. Page’s style is lively and conversational, making challenging subject matter quite readable, but without any sacrifice of rigor. He manages to convey both the excitement and difficulty of analyzing complex systems and the role of diversity within them."--Rajiv Sethi, Barnard College, Columbia University

Scott E. Page is the Leonid Hurwicz Collegiate Professor of Complex Systems, Political Science, and Economics at the University of Michigan and an external faculty member at the Santa Fe Institute. He is the author of The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools, and Societies (Princeton).

I was disinclined to like this book even though I am a product of one of Page’s academic departments at Michigan.Too many books based on formal modeling are based on assumptions that have little bearing on what actually happens in the world I work in where, models or not, our job is to foster cooperation in conditions of diversity and complexity.Much too my surprise, I really like his use of formal modeling techniques and his ability to bring them down (near) the level of mere mortals who lack his economic and mathematical sophistication. I agreed with his conclusion at least in part because I wanted to.But seriously, the logic in his arguments contains germs of ideas we who work in the applied field should pay attention and even more than critics of cooperative

problem solving ignore at their empirical and normative peril.

i love this book!!!! was fantastic to read and so understood what he meant when he said the ambiguity of definitions can get one stuck in the mud and trying to understand this topic. Then he does show, definitions are, relevant to context of discussion. the definitions have to be tweaked evovle with the topic in general as applied to different scenarios.My opinion only, this book is a classic,, and just one of many on this topic that is good to read. But I like the style of writing, insights, not to difficult to understand, but you will have to stop and think about some of his thoughts, but i like books that make you do that, feels like conversation. He does try to get away from pure mathematics but at same time he includes it, but you can still get much from reading this book even if the math is not your favorite topic, the way you process understanding ideas. I suggest, try the sample first, then buy the book if you like the sample. You feel a wisdom in the writing. that admits what is known, and not known. many today write not willing to admit limitations in knowledge, and that gets annoying because good research always admits limitations. Again, my opinion only, and no i'm not new to this topic, so i did have prior knowledge on this topic before I started reading this book.

If you are looking for research to introduce you to the role of diversity in complex adaptive systems, then you must start with Page's book. It explains the layered foundations of "how diversity happens, how it is maintained, and how it affects complex systems." This book examines the multi-level aspects of diversity (i.e., types, community compositions and interaction structures).

This book presents an expansive discussion of complexity and diversity as factors in systems. Page's work has broad implications for a variety of fields.

Cool book taking a different approach to diversity (not in the demographic sense, but in a biological sense)--give some good foundational ideas.

Scott Page is one of the better teachers around, writes clearly, and is a solid mathematician. On the other hand, the book is accessible to anyone who managed to get through 8th grade algebra.

As expected. Thanks.

Excellent book!

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