



Diversity and Complexity

Scott E. Page

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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

Diversity and Complexity Details

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From Reader Review Diversity and Complexity for online ebook

Cary Neeper says

A helpful review of the various types of diversity and how they impact complex systems of all kinds.

Robert says

Very sophisticated ideas, written for a general audience. Packed with examples and stimulating ideas.

Amin says

"????? ?? ?????"

The most important question this book does NOT answer is that when diversity "does not matter" in complex systems. Obviously, not all of diverse types are beneficial or harmful (in case of too much diversity) for complex systems, and based on functionalities, we can talk about lots of cases diversity is not relevant for analyzing complexity.

Apart from this, when I compare this book to "Complex Adaptive Systems" written by the same author and John Miller, it becomes obvious Scott Page is such a brilliant author and teacher. So, in the first chapters I enjoyed a lot reading this book, and even used some ideas in my research. The general idea of considering diversity in complex systems is multifaceted and needs reflections and in-depth analysis, and Page is successful in explaining that.

Later, it seems the primary focus turns toward the application of the concepts in the biological systems. Although the concepts look very relevant in more "creative" systems, and as the author says "community diversity" is very common in social and economic systems, but these interesting ideas are not really discussed. As a result, compared to the first chapters the middle ones are less inspiring.

Unfortunately, the ending chapters are boring and less convincing. When talking about diversity in complex "adaptive" systems, especially social systems, it seems our knowledge is still very limited, and the author wants to cover many applications and the relevance of his own ideas, but the result is a confusing text full of self-serving bias to interpret all the complex patterns and emergent properties based on some simple ideas or classifications. It leads to interpreting quite different cases with the same logic and it seems this way of looking and classifying emergent properties is not really refutable, and it is hardly convincing to consider it as a scientific approach, in a Popperian sense. Another caveat is related to ideas and concepts that are reduced to simple and mathematical examples not very convincing or generalizable, but used to explain the most important parts of the book, in my opinion.

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[illegible]

Philip Williams says

Building an understanding of diversity from a complex systems perspective. Bewildering in it's depth and power.

Jaron Roux says

I am very fond of Scott Page's writing style. Great book that looks at diversity as a complex system and distills how diversity can help understand complexity.

Dogsandbooks says

Intro.

Patrick says

Scott Page addresses a topic that is fundamental in understanding the world of today - diversity.

Sally says

<http://ideas.ted.com/2014/09/18/busin...>

Jake says

"Whence all this passion towards conformity anyway? Diversity is the word. Let man keep his many parts and you will have no tyrant states. Why, if they follow this conformity business, they'll end up by forcing me, an invisible man, to become white, which is not a color but the lack of one. Must I strive towards colorlessness? But seriously and without snobbery, think of what the world would lose if that should happen. America is woven of many strands. I would recognize them and let it so remain."

~ Ralph Ellison

Page shows that diversity, like any adaptive system, requires a fluid way of talking about it. When we mire ourselves in formalism we restrict our ability to model dynamic problems. Dynamic problems requires definitions that are equally dynamic. Page does sacrifice some rigor, for instance when covering the social sciences. Those systems showed less connections to most of the other systems covered and honestly it felt like he could have left them out. Or maybe the fact that he's attempting to talk about it at all is what the social sciences need. Whichever is the case, it was a good read nonetheless. Very approachable to anyone honestly. There is math but it's not bad.
