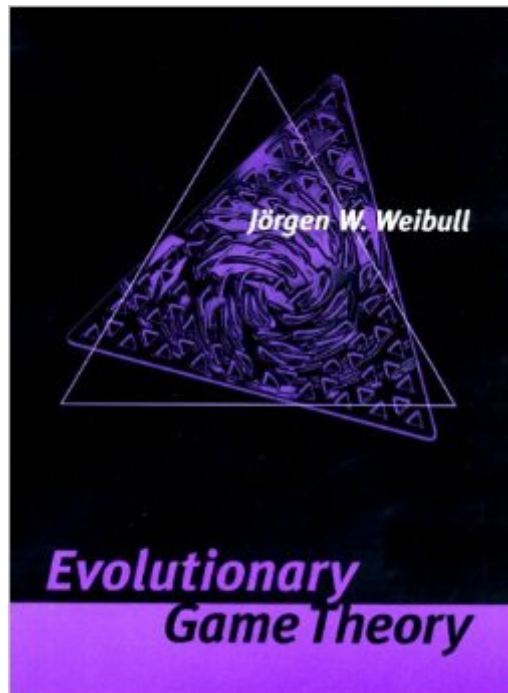# Evolutionary Game Theory (MIT Press)

Synopsis

This text introduces current evolutionary game theory -- where ideas from evolutionary biology and rationalistic economics meet -- emphasizing the links between static and dynamic approaches and noncooperative game theory. Much of the text is devoted to the key concepts of evolutionary stability and replicator dynamics. The former highlights the role of mutations and the latter the mechanisms of selection. Moreover, set-valued static and dynamic stability concepts, as well as processes of social evolution, are discussed. Separate background chapters are devoted to noncooperative game theory and the theory of ordinary differential equations. There are examples throughout as well as individual chapter summaries.Because evolutionary game theory is a fast-moving field that is itself branching out and rapidly evolving, JÃ¶rgen Weibull has judiciously focused on clarifying and explaining core elements of the theory in an up-to-date, comprehensive, and self-contained treatment. The result is a text for second-year graduate students in economic theory, other social sciences, and evolutionary biology. The book goes beyond filling the gap between texts by Maynard-Smith and Hofbauer and Sigmund that are currently being used in the field. Evolutionary Game Theory will also serve as an introduction for those embarking on research in this area as well as a reference for those already familiar with the field. Weibull provides an overview of the developments that have taken place in this branch of game theory, discusses the mathematical tools needed to understand the area, describes both the motivation and intuition for the concepts involved, and explains why and how it is relevant to economics.

Book Information

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Customer Reviews

Weibull's "Evolutionary Game Theory" has earned a distinguished place in many bookshelves for good reason: It is rigorous and never short of intuition. That said, however, this book is not the first item in the reading list of a beginner.If you are interested in learning evolutionary game theory and your previous exposure to non-cooperative game theory and ordinary differential equations has been limited, do not start with Weibull's Evolutionary Game Theory. Consider first visiting Herbert Gintis's "Game Theory Evolving" and Maynard Smith's classic "Evolution and the Theory of Games"For the 'technical' reader this book still is not a walk in the park becasue Weibull walks the reader not only in a math garden but also exposes the reader to several important evolutionary concepts including but not limited to 'evolutionary stability','evolutionarily stable strategy', 'replicator dynamics', 'population dynamics'. Grasping both the theoretical concepts and how they are modelled takes some thinking and patience.Overall this is a must reader for the seriously involved and can be the single item for many students of this subject that takes them to a higher plane of understanding.

After one makes it through umpteen refinements of Nash equilibria, the book becomes fascinating. Many ideas of Darwinism became much clearer -they got a quality of unavoidability so to speak- than when I read books on Darwinism before.I found the level of mathematical sophistication needed rather unchallenging, without being boring - and I am not a "deep core" mathematician, but an engineer.Highly recommendable

During the work on my master thesis ("Learning in strategic games") i bought several books about the topic. This one was the hardest to understand and to apply to anything practical. I guess this one is for "hard core" mathematicians.

I'm a computer sciences engineer working on my phd thesis that is related with game thoery. I found the book difficult to read. Forget about following an entire chapter if you are weak on differential equations.

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