

# Preface

This book is based on my Japanese book *Hikyouryoku Game Riron* (Non-Cooperative Game Theory), published in 2011 by Chisen-Shokan, with some modifications for international readers. Both books grew out of my lecture notes used for teaching at Keio University, Waseda University, and the Norwegian Business School (BI) over more than a decade. Like my lectures, this book covers topics from basics to graduate-level ones. I also included many exercises that my students did in the class.

I constructed the chapters according to solution concepts, which are ways to predict outcomes, or, in other words, are theories on their own. Game theory is a collection of such theories, and users of game theory should choose an appropriate solution concept for each situation to make a good prediction. However, there is no complete agreement of what solution concept **should** be used for particular games, even among game theorists. For example, I advocate using *sequential equilibrium* for extensive form games with imperfect information, but some people might use *perfect Bayesian equilibrium*. Therefore, in this book, I do not make a correspondence between a class of games and a solution concept. Rather, I line up solution concepts and let the readers decide which one to apply when they face a game to analyze.

Although I made every effort to avoid incorrect or misleading expressions, no book is free of errors. Even my own opinion may change over time. Therefore, I set up a website for corrections and clarifications at <http://web.econ.keio.ac.jp/staff/takakofg/gamebook.html>.

(Please note that, in the long run, the URL may change. The life of a book is usually longer than the life of a web page.) I also regret that I could not cover some important topics in non-cooperative game theory, such as epistemic game theory and learning models.

For beginners, I recommend reading chapters and sections without a star and doing some exercises. Juniors and seniors at universities can read chapters and sections with a single star. For those who want to study game theory at a graduate level, chapters and sections with two stars are useful, and after that, readers should go on to the research papers in the references.

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