

## Beyond Individual Choice

by Michael Bacharach with Natalie Gold and Robert Sugden

The Oxford economist and gametheorist Michael Bacharach devoted a substantial portion of his life to studying how people behave in games. Sadly he died before his magnum opus *Beyond Individual Choice* could be completed. Fortunately Natalie Gold and Robert Sugden picked up where Bacharach left off and “edited” his incomplete work to the level where it has been released as a full length book.

As might be expected in a book that was finished by different authors posthumously, the style of the book is a little mixed. Bacharach is from an older less formal school of analysis than most modern economists – including Sugden. The introduction and conclusion which were added by the editors to tie the book together are stylistically quite different than the core of the book written by Bacharach. Although they have kept the arguments informal, the editors write in the terse style of a modern journal rather than following the more relaxed literary style of Bacharach himself. Given the constraints they faced, this was a good choice by the editors – although it is a bit jarring to move from the introduction to the first chapter.

The introduction does a good job of laying out the basic theme of the book. There are three puzzles in game theory: why do people succeed so well in pure coordination games; what is a coherent theory of why they pick the efficient equilibrium in a pure coordination game with Pareto ranked equilibria (the hi-lo game of the book); and why do they cooperate so much in the prisoners dilemma game? Bacharach's central thesis is that there is a common explanation for these puzzles and it lies in the way in which people reason. While his critique of other theories is at best hard to follow, his own insight is clear and useful. The editors provide a simple and instructive example in their introduction: imagine that there are four strategies: three labeled red and one labeled blue. Suppose as well that strategies are indistinguishable except for their labels. This means that the effective choices are to pick a strategy at random (“pick a thing”); pick a red strategy at random (“pick a red”) and “pick the blue.” If the goal is to coordinate, “pick the blue” leads to 100% chance of coordination. This is a useful observation, and one that has been developed in some detail with full evolutionary dynamics in Binmore and Samuelson's marvelous paper “The Evolution of Focal Points.”

If Bacharach's insight has led to a useful and workable theory about coordination games, his insight into the Prisoner's Dilemma game is less well developed. Here he argues that the relevant reasoning is about what group you belong to. He argues that evolutionary pressure leads to altruism within groups. This relies on the standard positive assortative matching argument explaining why altruism emerges from evolutionary forces. The argument is not fully developed, however, and in particular the application to group identification that he sees as key is not developed. So we have the observation that positive assortative matching can lead to altruistic behavior and that this explains cooperation. This is coupled with the notion that altruism depends on some measure of group identification – here is where the reasoning argument comes in: how do you figure out who is in your group? However, while this is plausible enough as a fact, there is no real theory of what it might mean in practice, nor is there an underlying evolutionary theory of why it should be true. The discussion is clever never-the-less and there are clues here that may lead to more developed models in the future.

As we move to the final chapter of the book, Bacharach takes on reasoning within teams. Here he chooses the unfortunate example of how players coordinate in a soccer match – focusing on the off-side trap in particular. The most significant conclusion I can draw from this section is that Bacharach has never played or coached soccer (or any other sport apparently). Players in my experience do not succeed in coordinating spontaneously. Plays are designed by a central planner (the coach, in my case with the help of textbooks on soccer) who then forces the players to practice the contingencies repeatedly until they can coordinate without reasoning. While the book is an interesting read and contains much insight, I am afraid that in the end Bacharach overreaches by suggesting that teamwork – in reality planned and practiced in advance – can be understood by reference to frames of reasoning.