Reading minds

Chapter 7

Impact

This dissertation contributes to our general understanding of individuals' strategic reasoning, as well as to the fields of behavioral economics, experimental economics, and neuroeconomics, in which this cognitive process is frequently researched. By *individuals*, I mean "normal people," who received little or no formal training in game theory and who are certainly not the perfectly rational, self-interested players that are assumed to exist in traditional game theory. Moreover, by *strategic reasoning*, I mean the way in which these individuals analyze the structure of different types of games by searching for information about their own and their opponents' payoffs, as this is − at the moment − probably the closest we can come to researching the cognitive process of strategic reasoning. Of course, it should not be forgotten that many more cognitive processes are employed between the time at which an individual is presented with a game and the time at which he or she makes a choice and that these other cognitive processes are likely to interact with the cognitive process of strategic reasoning.

The results of this dissertation indicate that two brain areas that have frequently been implicated in a cognitive process called theory of mind, i.e., the ability to attribute mental states such as beliefs, emotions, and intentions to oneself and others, are also involved in strategic reasoning, although not always in the way one might expect (**Chapter 2**). Moreover, the results of this dissertation indicate that individuals differ in their information search patterns in games, that the experimental method of mouse-tracing is well-suited to investigate these differences, but that an independent measure of social preferences does not predict them (**Chapter 3**). Finally, the results of this dissertation indicate that individuals' information search patterns in games are flexible and, more specifically, that they are adjusted when the context in which these games are played, such as the perceived kindness of the opponent, changes (**Chapter 4**).

In my opinion, this dissertation constitutes an example of fundamental research, although fundamental is merely a relative term. Even though there are no *direct* applications to, for example, social challenges, the results of this dissertation can be used to improve existing

models of strategic reasoning, as well as to build upon in future experimental research. The improved models of strategic reasoning can be used to make more accurate predictions about individuals' choices in games, to provide indications as to why individuals differ in their ability to reason strategically, and perhaps even to create a framework within which deficits in strategic reasoning, as, for example, in the case of autism spectrum disorders, can be conceptualized. As a result, in the short run, the results of this dissertation are most relevant to other scientists, such as theorists who can incorporate them into existing models and experimentalists who can build upon them in their search for behavioral regularities. In the medium to long run, the results of this dissertation can be used to address a variety of social challenges, many of which are strategic in nature. For example, the prisoner's dilemma game researched in **Chapter 4** is often used to describe climate change. To spread the results of this dissertation, the chapters will be submitted to scientific journals for peer review.