

# Reading minds

Citation for published version (APA):

Vandewal, E. J. M. (2023). *Reading minds: Behavioral and neuroeconomic experiments on strategic reasoning*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20230922ev>

## Document status and date:

Published: 01/01/2023

## DOI:

[10.26481/dis.20230922ev](https://doi.org/10.26481/dis.20230922ev)

## Document Version:

Publisher's PDF, also known as Version of record

## Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

## General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

[www.umlib.nl/taverne-license](http://www.umlib.nl/taverne-license)

## Take down policy

If you believe that this document breaches copyright please contact us at:

[repository@maastrichtuniversity.nl](mailto:repository@maastrichtuniversity.nl)

providing details and we will investigate your claim.

# 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.