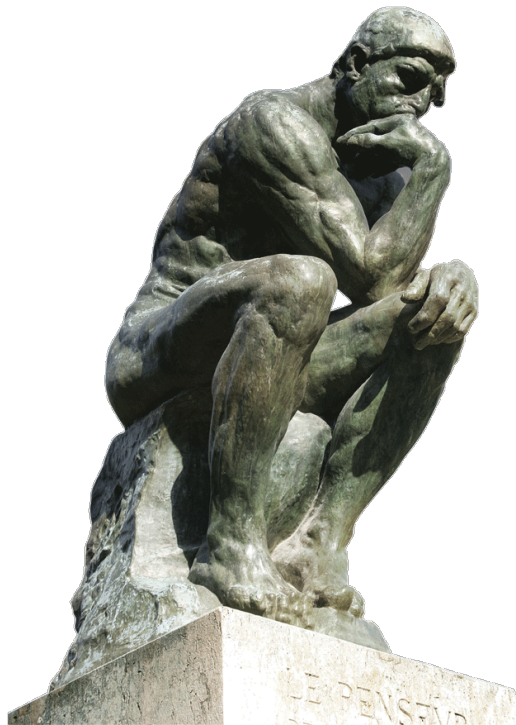


# AN EXPLORATION OF HUMAN RATIONALITY WITH EMPIRICAL EVIDENCE

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Philosophy and Economics 871

22 October 2021

Word Count: 2980

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## 1. Introduction

Are Humans Rational? • Yes – Anderson, Chater • No – Tversky, Kahneman, (Voltaire) • They do pretty well with limited resources – Simon, Gigerenzer

When describing what it means to be human, famous Greek philosopher Aristotle defined human beings as rational animals. In fact, Aristotle emphasised that it is *rationality* that makes humans unique and distinct from animals ([Kietzmann, 2019](#)). But exactly what it means for people to be rational has long been an interdisciplinary debate, drawing arguments from fields including philosophy, economics, psychology and mathematics. Nobel prizes

This essay<sup>1</sup> explores what it means to be rational and whether humans fit some definition of rationality. This essay is organised as follows. Section 2 presents different frameworks for defining rationality, including rational choice theory and bounded rationality. Section 3 briefly compares different views on human rationality in the literature. Section 4 presents three case studies that provide empirical evidence on rational decision-making. And the final section (5) concludes.

## 2. Defining Rationality

In order to understand if humans are rational, we first have to build a framework to define what we mean by rationality. Definitions of rationality relate to Max Weber’s principle of methodological individualism<sup>2</sup>, since theories of rational actions underlie theories of rationality. It follows then that theories of rationality are classically linked to the primacy of “the action frame of reference” ([Demeulenaere, 2014: 517](#); [Parsons, 1937: 43–51](#)). The social sciences have defined rationality in a number of different ways; the five most general notions of rationality.

All of them can be related, more or less clearly, to Popper’s “problem-solving” notion (Popper, 1967).

### 2.1. Rational Choice Theory

### 2.2. Bounded Rationality

Neoclassical economics assumes that people are perfectly rational, whereas behavioural economics uses psychology and economic theory to create more realistic models of human decision-making ([Rabin, 2002](#)). People are subject to certain biases and often make use of heuristics in their decision-making

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<sup>1</sup>This essay was written in R using the package *Texevier* by [Katzke \(2017\)](#) and the write up can be found on Github [here](#)

<sup>2</sup>The methodological precept that social phenomena should be explained as the result of individual actions([Weber, 1922](#))

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process, which can lead to predictable errors in judgment [Kahneman & Tversky \(1979\)](#). Behavioural economics literature investigates how these biases can be combated to improve welfare outcomes. [Thaler & Sunstein \(2008\)](#) introduced the idea of a nudge<sup>3</sup> as a way to guide people to make better choices. For example, changing the default option for organ donation to be opt-in as opposed to explicit consent could benefit potential donors (who were deterred by the registration process) and save more lives ([Thaler & Sunstein, 2008: 176](#)).

The concepts of loss aversion, reference dependence and regret avoidance can also be included in health interventions through a “regret lottery”. [Kahneman & Tversky \(1979\)](#) describe loss aversion as a cognitive bias whereby people experience losses as more painful than the pleasure they receive from an equivalent gain. Thus, people are more willing to take on risk to avoid a loss, and are less risk-seeking when pursuing gain ([Kahneman & Tversky, 1979: 268](#)). Reference dependence follows on from loss aversion and suggests that people define gains and losses relative to a reference point ([Tversky & Kahneman, 1991: 1039](#)). People are also subject to regret avoidance, where there is a significant emotional cost attached to regret and people make decisions to avoid regretting alternative decisions in the future ([Bailey & Kinerson, 2005](#)).

### **3. The Great Human Rationality Debate**

### **4. Case Studies**

### **5. Conclusion**

The behavioural literature and empirical studies show that lotteries can be an effective method to incentivise vaccine take-up, and South Africans appear to be well-primed for such a health intervention. This field experiment is designed to test this hypothesis.

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<sup>3</sup>Nudge: an intervention that alters behaviour towards a desired action. In order for an intervention to qualify as a nudge, it should be cheap and easy to avoid ([Thaler & Sunstein, 2008](#)).

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