



## Book Review

**Book review of “Rationality: What it is, why it seems scarce, why it matters”, S. Pinker. Penguin (2022). 432**

The problem of rationality has been of interest in economics for many centuries. Since a significant shift in the middle of the previous century towards strict formalisation and prevalence of the normative modelling over the descriptive approach, the concept of rationality has experienced several reconsiderations: from bounded rationality (Simon, 1959) to a concept of ecological rationality (Gigerenzer, 2000; Smith, 2003) with the still ongoing discussions.

Being mostly professional before the dawn of the third millennium these debates are no longer of academic interest only. With the rise of popular books — e.g. Predictably Irrational by Dan Ariely (2008) or Thinking, fast and slow by Daniel Kahneman (2011) — and the increase of readers' engagement, these disputes have left the ivory tower of academia and have begun to concern a large audience.

One of the great and recent examples of such books is *Rationality: What it is, why it seems scarce, why it matters* by Steven Pinker, the Johnstone Family Professor in the Department of Psychology at Harvard University. A well-known author of many bestsellers, Pinker aims to look at the concepts of rationality from a rather multidisciplinary perspective embracing philosophy, psychology, economics, and mathematics.

Comprising eleven chapters, the book presents the revised material initially designed for the course at Harvard University. Though there are no formal parts of the book, several chapters can be gathered in logical clusters: firstly, three initial chapters provide a broad introduction to the matter of rationality, then, six further chapters are dealing with concepts that originate from mathematics, and, finally, two last chapters provide a reconsideration of rationality in terms of causal decisions and its global importance as an evolutionary concept.

In the first two chapters, Pinker starts with a demonstration of how urgent the concept of rational decision-making is, on both philosophically abstract and daily-live levels. With the help of a number of origin-diverse and attention-capturing examples he gives a broad introduction to rationality in the domains of mathematics, logic, and psychology as well as the motivation to study it: what is the correspondence between rationality and morality? what does rationality say about goals conflicts and time conflicts? Providing a reader with state-of-the-art insights from behavioural economics, Pinker argues as the proponent of rationality and in the meanwhile does not narrow the question down to just a binary answer. In the next, the third, chapter the author introduces the basics of formal logic and discusses the existing discrepancy between its rigorous and routine usage. Taking one dialogue from a movie as an example, Pinker illustrates the difficulties of the one-to-one application of formal logic to daily life. However, notwithstanding this imperfect match, the author provides a reader with several cases when departing too far from the formal-logic benchmark becomes not just funny and absurd but dangerous.

Turning to the mathematically driven part Pinker starts with the probability theory. He firstly (in the fourth chapter) enables an inexperienced reader to get very first and very intuitive steps in this field and then, building on that, he advances the audience's knowledge and introduces (in the fifth chapter) the concept of Bayesian updating. In chapter six, the author gives the first insights on decision-making theories: starting from arguing the concept of utility he moves towards the discussion of several axioms (commensurability, transitivity, and independence from irrelative alternatives) and, finally, demonstrates the evolution from expected utility theory to prospect theory (though an intuitive rather than rigorous one). Chapter seven gives an interesting perspective of how an initial acquaintance with statistical decision theory can be accomplished in a friendly non-mathematically-sophisticated reader way. Using an intuitive explanation in the beginning Pinker eventually reaches the grounded discussion of such crucial concepts as two types of errors and statistical hypotheses testing. Moving to game theory in the eighth chapter the author provides the audience with the preliminaries in the field, although only in normal-form games. Finishing with the phenomena emanating from mathematics in the ninth chapter, Pinker demonstrates a crucial difference between correlation and causation, carefully explaining both concepts and their interaction in terms of both real-world relations and fallacies' traps.

The last part consisting of two chapters, the tenth and the eleventh, deals with explicit examples of human (sometimes peculiarly extreme) cases of irrationality and argues why reason has been constituting human progress for centuries. Tackling the latter, Pinker focuses on two domains: material advancement and moral progress. While the causality of rationality on material progress is intuitive and will unlikely result in controversy, its effect on moral development is more questionable. Nevertheless, Pinker shows how rationality has served this over the years. Although rational arguments serve not only virtues (as they can be — were and are — used to justify the greatest crimes against humanity), nothing in terms of moral development progress is that powerful and convincing as coherent logical reasoning. Overall, rationality is like words: both saints and scoundrels can use, the major question is for the sake of what.

The book has many indisputable advantages. Firstly, it is one of few popular books that present a broad audience with such fields as game theory, statistical decision theory, and causality. Secondly, *Rationality* by Pinker does touch upon some technical aspects of the topics, though without delving into deep (and even more technical) details. Thirdly, the book comprises many examples of both academic and real-life origin from a rather multidisciplinary field which facilitates the discussed topics perception. Finally, all chapters are generously flavoured with a large number of cognitive biases, fallacies and heuristics which makes the text especially capturing for the inexperienced reader.

The major trade-off of the stated books' dignities is the limited coverage of topics in game theory and causal inference, however, a natural one: each new chapter in the book already counting more than

four hundred pages (even without the suggested elaborations) may averse potential readers which is arguably not a tolerable compromise.

In conclusion, this book in essence (though ideally of larger topics and applications) presents a solid background for a special course that should be taught at high schools or undergraduate level at universities to promote the spread of rationality: to avoid the easiness of falling into false conclusions (often driven by shortcuts and emotions), to prevent the seductive temptations of the following misinformation, and to encourage less myopic, more strategic and reasonable decision-making.

## References

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