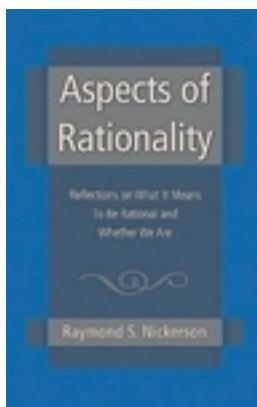


## What Does It Mean To Be Rational?

A review of



**Aspects of Rationality: Reflections on What It Means To Be  
Rational and Whether We Are**

by Raymond S. Nickerson

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Reviewed by

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In the study of human behavior few questions have been as evocative of controversy as “Are we rational?” Sometimes the arguments sound like a parody: Investigator A asserts, “Humans are irrational.” Investigator B responds, “I’m a human being. Are you calling me irrational?” Investigator C adds, “A is a human being. How can what he says be considered rational?” While not intended seriously, the dialog is not unlike some that can be found in the great rationality debate.

Nickerson has reviewed the extensive literature on a controversial topic from a very personal perspective, as he did earlier with the concept of probability (Nickerson, 2004). He addresses two fundamental questions: “What is rationality?” and “Is human reasoning rational?” Obviously one cannot pass judgment on the second question until the first has

been answered. Much of the argument over the second question may turn out to reflect different answers to the first.

*Aspects of Rationality: Reflections on What It Means To Be Rational and Whether We Are* contains a wide-ranging discussion, presenting a wealth of information and a carefully reasoned assessment of the many answers to both questions that have been offered by others. In the first two chapters, Nickerson shows how difficult it can be to achieve consensus. To assess rationality, one must define standards, or norms, against which behavior can be compared. Nickerson points out how circular any such attempt becomes and how it seems impossible, therefore, to argue for one set of norms rather than another:

If in order to evaluate a conception of rationality, one must, at least implicitly, appeal to a view of rationality the validity of which one has presupposed, are we not determined, all of us, to retain indefinitely whatever view of rationality we already happen to hold? (pp. 66–67)

The implication is that “one must decide for oneself what one will consider to be rational and why” (p. 68). Nickerson proceeds to lay out the options, providing the reader with a journey through the writings of psychologists, philosophers, and others. He then offers his own conclusions.

Discussions deal with two rather separate topics: epistemic rationality (how one's beliefs are influenced by experience) and instrumental rationality (the consistency of choices with one's goals and preferences). Epistemic rationality has typically been assessed by comparing human reasoning with the dictates of formal logic and probability theory. The most common yardsticks for assessing instrumental rationality have been formal models of rational choice such as expected utility (EU) theory. Nickerson reviews findings from these areas of research but makes it clear that there are broader issues that need to be addressed as well.

Nickerson reviews the literature on other topics that might bear on rationality—intelligence, knowledge, explanations, understanding, and wisdom. He touches on relevant affective states such as mood, aesthetics, and wonderment. While none of these topics provides clear answers to the central question and each raises its own problems of definition, they illustrate the range of issues that might be considered. Nickerson's coverage is comprehensive, and one must admire the broad scope of his discussion.

Unfortunately, although he displays extensive scholarship, Nickerson does little to develop common themes beyond insisting on the need for readers to reach their own conclusions. Sometimes it is unclear which topics are central and which are peripheral. There are some key points that I wish had received greater emphasis. While there can be no single correct way to define rationality, there are some central threads that I think need to be recognized.

## Central Threads in the Rationality Debate

One common criterion of rationality is internal consistency of beliefs and consistency of actions with beliefs. Nickerson correctly notes that consistency alone is not sufficient. Some authors quote Emerson (1841/1991, p. 75), "Foolish consistency is the hobgoblin of little minds," sometimes forgetting the critical first word. Nevertheless, it is hard to imagine a useful view of rationality that does not consider some form of consistency to be essential.

Dawes (2001) made the case that inconsistency is the essence of irrational behavior. A common example of irrationality is the finding that supposedly irrelevant changes in the wording of a problem produce large changes in a person's judgments and decisions. Such framing effects betray a serious inconsistency in behavior. It is unfortunate that Nickerson mentions examples of framing effects only in passing and does not cite this particular book by Dawes.

Consistency is also a key to understanding the role of axiomatic approaches to rationality, such as EU theory. That a person should attempt to maximize EU can be shown to follow from a simple set of axioms. If one grants the validity of the axioms, one must grant the validity of the theory. Nickerson points out that the axioms themselves have no justification beyond the sense that they seem reasonable. But this misses the point, I think, that it is the consistency of behavior that is of concern.

Consider one common axiom in these systems, the transitivity of preferences: If I prefer A to B and B to C, I should prefer A to C. It has often been shown that people violate this axiom and make intransitive choices. The argument made by those who offer EU theory as a standard of rationality is a conditional one: *If* you would like to obey transitivity (and the other axioms), *then* your choices must follow the prescriptions of the theory. You are not impelled to accept the axiom, but very few if any would reject it, and findings of intransitivity therefore suggest a serious inconsistency among preferences.

Another key property of rationality is its goal-oriented character. For many authors, behavior that is rational must advance one toward one's goals. In this connection Nickerson asks whether one can evaluate the rationality of behavior independently of a person's goals or must also consider the goals themselves. Nickerson opts for the latter but in the process may imply an unwarranted assumption that there must be a "correct" definition. The point is, of course, that they represent quite different aspects of rational thinking. Studies of both can offer important insights into behavior, and perhaps the best approach is to avoid arguments over definitions and employ different terminologies.

Nickerson points out that a problem with goal-oriented definitions of rationality is that goals often conflict. What is rational in the service of one goal is not necessarily rational in the service of another. Unfortunately, he does not discuss the most systematic approach for dealing rationally with such conflicts, multiattribute utility theory (e.g., Brown, 2005).

Multiattribute theories of preference are discussed, but not as a rational model for integrating multiple goals.

## **Are We Rational?**

In the final chapter Nickerson provides his own answers to the two central questions. To define rationality he provides a list of principles that he believes are characteristic of good reasoning. Unfortunately, trapped by his own insistence that the choice of criteria is a matter of personal preference, he offers little in the way of justification for his choices. Many of these criteria would surely be on everyone's list: internal consistency of beliefs, openness to evidence, trial by exposure to tests, and the obligation to exert mental effort. Note, though, that these criteria speak mostly to epistemic rationality, not to instrumental rationality.

Some of his proposed criteria are open to debate. He suggests a “principle of balance,” a “balance between freedom and constraint, imagination and criticism, conjecture and refutation” (p. 411). I found this particular criterion to be unhelpful. Obviously we can err by seeking too little information or by seeking too much, but does it help to say so without offering guidance on how to identify just the right amount?

By Nickerson's standards, then, are we rational? “As a species, we get, in my view, a passing grade but not much more than that” (p. 419). That is surely a noncontroversial statement, but therein lies perhaps the major weakness in this otherwise admirable review of a complex topic. Is there really nothing more that we, or he, can say about the strengths and weaknesses of human reasoning?

Consider the title of one section in the concluding chapter: “Do People Reason Logically? Yes, No, and Yes and No” (p. 390). My concern is not that the title is trite but that the question itself is misleading. Most investigators have moved beyond binary questions of this sort to ask under what conditions reasoning is logical or rational. I fear that Nickerson's view of the issue is still bound by the binary questions that generate so much controversy and so little in the way of theoretical insights.

Recent research has led to theoretical advances that provide greater understanding of human reasoning. The most important of these advances has been the introduction of dual process theories. The two processes go by various names, but there is general agreement on their characteristics. One is rapid, driven by automatic associations with the stimulus context, and requires little cognitive effort. The other is slow, deliberate, based on more abstract rules, and demands cognitive resources. While there are advantages and disadvantages to both, it is clear that what most people consider rational thinking requires the second of the two processes.

Nickerson includes a short section on dual process theories, but he does not appear to recognize how important they have become in explaining failures to reason in a rational

way. For example, in a study of logical reasoning, De Neys (2006) has provided an elegant demonstration of the interactions among task demands, individual differences in cognitive capacity, and external demands on cognitive resources. Studies like this can provide a more nuanced answer to the question “Are we rational?”

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