

Whose Norm?¹

Common Sense, Reasoning, & Rationality

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Common Sense, Reasoning, & Rationality is a collection of 11 papers based on some of the invited talks at the Eleventh Vancouver Studies in Cognitive Science conference, held in 1998. A more accurate title would be *Commonsense Reasoning and Rationality*, and, indeed, that is the phrase used in the title of the editor's introductory chapter.

The nineteen authors, mostly philosophers, along with several psychologists, and a couple of computer scientists, are engaged in a debate about the nature of human commonsense reasoning and the applicability of a normative notion of rationality to the study of human commonsense reasoning. The prime contenders, in this book, for a normative notion of rationality are deductive logic and Bayesian probability.

We might first wonder what a normative notion of rationality is. The answer provided is a standard of reasoning against which a person's reasoning might be judged right or wrong, whereas commonsense reasoning is however people actually reason. For example, consider, as several of these authors do, the well-known findings of Kahneman and Tversky (*e.g.*, see the papers in [1]), where people consider the likelihood of a conjunction to be higher than that of either conjunct. If you think these subjects are making mistakes in their reasoning, you must be comparing their performance to some

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normative notion of reasoning, such as Bayesian probability theory. If, however, your goal is to understand or model however the subjects actually do reason, normative notions of reasoning are simply irrelevant.

Although deductive logic and Bayesian probability are the prime contenders for a model of normative rationality, Henry E. Kyburg, Jr. argues for nonmonotonic acceptance theory as the normative theory. Mike Oaksford and Nick Chater argue that deductive logic is not relevant for understanding commonsense reasoning, but that probability theory is the most promising candidate for a normative theory.

Stuart Russell argues for bounded optimality as a model of commonsense reasoning, while Gerd Gigerenzer, Jean Czerlinski, and Laura Martignon argue for a version of bounded rationality called fast and frugal heuristics, John L. Pollock argues for defeasible means-ends planning, and Paul Thagard, Chris Eliasmith, Paul Rusnock, and Cameron Shelley argue for epistemic coherence. With quite different approaches, Denise Dellarosa Cummins argues that commonsense reasoning is mainly reasoning about social norms, and Gilbert Harman argues that commonsense reasoning derives from the logic of ordinary language. (For more on that theme, see [2].)

There are two attempts at making peace. In his chapter on “Reasoning Imperialism”, Lance J. Rips argues that people can evaluate both deductive correctness as well as inductive plausibility, and so both are needed for a complete model of commonsense reasoning. In their chapter on “Ending the Rationality Wars”, Richard Samuels, Stephen Stich, and Michael Bishop argue that the proponents of the heuristics and biases tradition and the proponents of evolutionary psychology mostly differ in their “rhetorical

flourishes,” but that when those are set aside, they largely agree on the extent of human rationality.

This book is a good introduction to the “rationality wars” (and the commonsense wars), and since I doubt they will end soon, it is a good entrée to the various sides.

References

- 1 Kahneman, D. *et al.* (1982) *Judgment under Uncertainty: Heuristics and Biases*, Cambridge University Press
- 2 Iwańska, Ł. and Shapiro, S. C., eds (2000) *Natural Language Processing and Knowledge Representation: Language for Knowledge and Knowledge for Language*, AAAI Press/The MIT Press

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