

Preface

This book has been written so as to be intelligible to philosophers and cognitive scientists at all levels of expertise. In it you will find defended a range of provocative theses. Many of them will be immediately intelligible to professors and advanced graduate students in the aforementioned fields, but it is—for reasons on which I elaborate below—my intention to make all these theses, and the arguments for them, intelligible not only to professors and graduate students, but also to advanced undergraduates in philosophy and cognitive science.

Here are some of the claims I defend:

- Folk psychology provides only limited predictive and explanatory leverage with regard to everyday human behavior, but cognitive science has amply vindicated folk psychology.
- Cognitive science is succeeding brilliantly, but it is, despite frequent lip service to the contrary, not in the least committed to the computational theory of mind or to the discovery of intentional generalizations.
- For purposes of (at least much of) cognitive-scientific research, folk semantics can, and must, be replaced with an ahistorical theory of content. This means that contents can be naturalized without any appeal to natural selection.
- Although the appeal to mental contents that are fixed ahistorically plays an essential and legitimate role in the explanation for one of the most important facts about human behavior, contents are devoid of relevant causal powers.
- The capacity to engage in the truth-preserving manipulation of representations may be what most clearly differentiates humans from other creatures. The Intrinsic Cognitive Models (ICM) hypothesis—which, crudely put, amounts to the proposal that humans harbor and manipulate the cognitive counterparts to scale models—supplies the only viable explanation for this capacity.

- The ICM hypothesis can be distinguished from sentence-based accounts of truth preservation in a way that is fully consistent with what is known about the brain.
- Some computational systems (e.g., appropriately programmed personal computers) also harbor non-sentential models, and these representations are immune to the frame problem for the same reasons that scale models are. There is, in other words, an extant computational solution to the frame problem.
- A model of explanation grounded in the ICM hypothesis, termed the *Model model*, can resolve, in a way that no other model can, the many problems that beset the Deductive-Nomological model of explanation.
- The frame problem of artificial intelligence is intimately related to the ceteris paribus problem and the surplus-meaning problem in the philosophy of science. The upshot is that the aforementioned solution to the frame problem explains both how it is that scientists can always find a way to hang onto their pet theories in the face of otherwise countervailing evidence and how it is that scientists are able to use their theories to formulate countless new predictions.
- In what is perhaps the most important respect of all (i.e., the capacity to supply genuine, enlightening explanations), the special sciences are (at present) far superior to fundamental physics.
- If the ICM hypothesis is correct, then Kant was also basically correct in claiming that there is synthetic *a priori* knowledge (at least in geometry).
- In the near future, humans or non-humans may come to understand the nature of reality in its full, hyper-dimensional glory.

For a quick discussion of how many of these claims fit together, see the final paragraph of chapter 2 and the first few paragraphs of chapter 9.

It would be foolhardy for me to expect that, after reading the arguments of this book, flocks of previously unsympathetic graduate students and professors will suddenly come around to my way of thinking. I do think it reasonable to expect, however, that those of you who are interested in these topics will recognize the strength of the arguments advanced here and the elegance of my overarching position. It is in this spirit that I direct this book to the attention of even my least sympathetic peers.

There will also be those among you who already think that folk psychology has good scientific credentials, that folk semantics doesn't work for science but another semantics might, that we harbor and manipulate non-sentential mental models, or that having an explanation for an event

or a regularity is having a mental model of what might have produced it. Those of you who fall into one or more of these categories are likely to find in this book a good deal more grist for your particular mill.

Finally, and most importantly, I direct this book to the attention of those of you who are just starting out in philosophy or cognitive science, for it is you newcomers who are the ultimate arbiters of the disputes addressed herein. (See section 2.6.) It is my hope—because my central theses are, after all, basically correct!—that the next generation of philosophers and cognitive scientists will include many who champion the position advanced in this book. It is largely for this reason that I have tried to write in a way that presupposes very little prior knowledge of these fields. Be advised, however, that this is no mere textbook, and you will sometimes need to put in a good deal of time and effort in order to understand the positions described and the arguments for them. It may help to know that there are many good resources that, if kept at the ready, will help you along the way. On the philosophy end of things, there are the Stanford and Routledge Encyclopedias of Philosophy. The former is a free (but incomplete) online resource; the latter is an online resource to which most university students ought to have electronic access. On the cognitive science end, you might try *A Companion to Cognitive Science* (edited by William Bechtel and George Graham) and *The MIT Encyclopedia of the Cognitive Sciences* (edited by Robert Wilson and Frank Keil). In the end, if you do put in the time and effort, you will—even if you disagree with the claims advanced here—surely learn a great deal about philosophy and cognitive science.

