The Cognitive Basis of Science

*The Cognitive Basis of Science* concerns the question ‘What makes science possible?’ Specifically, what features of the human mind and of human culture and cognitive development permit and facilitate the conduct of science? The essays in this volume address these questions, which are inherently interdisciplinary, requiring co-operation between philosophers, psychologists, and others in the social and cognitive sciences. They concern the cognitive, social, and motivational underpinnings of scientific reasoning in children and lay persons as well as in professional scientists. The editors’ introduction lays out the background to the debates, and the volume includes a consolidated bibliography that will be a valuable reference resource for all those interested in this area. The volume will be of great importance to all researchers and students interested in the philosophy or psychology of scientific reasoning, as well as those, more generally, who are interested in the nature of the human mind.
The cognitive basis of science

edited by

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for
Sir Q.W. Lee
with thanks again
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This volume is the culmination of the fourth project undertaken by Sheffield University’s Hang Seng Centre for Cognitive Studies. (The first project resulted in *Theories of Theories of Mind* (1996), edited by Peter Carruthers and Peter K. Smith; the second resulted in *Language and Thought* (1998), edited by Peter Carruthers and Jill Boucher; and the third produced *Evolution and the Human Mind* (2000), edited by Peter Carruthers and Andrew Chamberlain; all three volumes were published by Cambridge University Press.) For the first time, however, the present project also involved co-operation with the Evolution and Higher Cognition Research Group at Rutgers University, led by Stephen Stich. Four inter-disciplinary workshops were held in Sheffield over the period 1998–2000, and two conferences took place – one at Rutgers in November 1999, and one at Sheffield in June 2000. This collaboration has enabled us to assemble a wider and more international field of contributors than would otherwise have been possible.

The intention behind the project was to bring together a select group of philosophers, psychologists and others in the cognitive sciences to address such questions as the following: What is it about human cognition which either enables us, or fits us, to do science? Do scientific abilities have some sort of distinctive innate basis? Or are scientific abilities socially constructed out of general-learning mechanisms? How do different elements of our cognition fit together to underpin scientific reasoning? To what extent are there continuities between the cognitive processes involved in child development, those engaged in by hunter–gatherer communities, and those which are distinctive of scientific enquiry? To what extent do the well-known biases in human reasoning impact upon science, and what place do the emotions have in an adequate account of scientific activity? How important is the social dimension of science for our understanding of science and scientific cognition?

We have selected seventeen of the best, most focused, contributions from among those delivered at the two conferences. These have been re-written in the light of editorial comment and advice from the referees. In addition, drafts of these papers were made available to the other participants via a
restricted-access web-site. The result, we believe, is a highly integrated volume
of original inter-disciplinary essays which will make a significant contribution
to our understanding of science, and thereby to our understanding of the human
mind.

We would very much like to thank all those who participated in the workshop
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