THE COGNITIVE SCIENCE OF BELIEF

Beliefs play a central role in our lives. They lie at the heart of what makes us human, they shape the organization and functioning of our minds, they define the boundaries of our culture, and they guide our motivation and behavior. Given their central importance, researchers across a number of disciplines have studied beliefs, leading to results and literatures that do not always interact. *The Cognitive Science of Belief* aims to integrate these disconnected lines of research to start a broader dialogue on the nature, role, and consequences of beliefs. It tackles timeless questions, as well as applications of beliefs that speak to current social issues. This multidisciplinary approach to beliefs will benefit graduate students and researchers in cognitive science, psychology, philosophy, political science, economics, and religious studies.

Julien Musolino holds a dual appointment in the psychology department at Rutgers University and at the Rutgers Center for Cognitive Science. He is a cognitive scientist, public speaker, award-winning teacher, and author. He has appeared on national television, participated in public debates, and is a frequent guest on radio and podcast programs.

Joseph Sommer is a postdoctoral associate at the Rutgers Center for Cognitive Science. His research takes an interdisciplinary approach to understanding the cognitive mechanisms underlying belief formation and belief revision.

Pernille Hemmer is Associate Professor at Rutgers University. She is affiliated with the Rutgers Center for Cognitive Science and the Institute for Health, Health Care Policy, and Aging Research. Her research has been funded by the National Science Foundation (NSF) since 2015, including the prestigious NSF CAREER award.

THE COGNITIVE SCIENCE OF BELIEF

A Multidisciplinary Approach

EDITED BY

JULIEN MUSOLINO

Rutgers University, New Jersey

JOSEPH SOMMER

Rutgers University, New Jersey

PERNILLE HEMMER

Rutgers University, New Jersey





Shaftesbury Road, Cambridge CB2 8EA, United Kingdom One Liberty Plaza, 20th Floor, New York, NY 10006, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi – 110025, India

103 Penang Road, #05–06/07, Visioncrest Commercial, Singapore 238467

Cambridge University Press is part of Cambridge University Press & Assessment, a department of the University of Cambridge.

We share the University's mission to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org Information on this title: www.cambridge.org/9781316518649

DOI: 10.1017/9781009001021

© Cambridge University Press & Assessment 2023

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press & Assessment.

First published 2023

A catalogue record for this publication is available from the British Library.

ISBN 978-1-316-51864-9 Hardback ISBN 978-1-009-00985-0 Paperback

Cambridge University Press & Assessment has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

Contents

List	of Figures and Tables	page viii
List	of Contributors	ix
I	Introduction: Toward A Cognitive Science of Belief Joseph Sommer, Julien Musolino, and Pernille Hemmer	I
PAR	T I: UNDERSTANDING BELIEF	29
PHI	LOSOPHICAL AND LINGUISTIC APPROACHES TO BELIEFS	31
2	The Cognitive Science of 'Belief' (The Word) <i>Ray Jackendoff</i>	33
3	The Science of Belief: A Progress Report Nicolas Porot and Eric Mandelbaum	55
4	The Role of Context in Belief Evaluation: Costs and Benefi of Irrational Beliefs <i>Elly Vintiadis and Lisa Bortolotti</i>	its 92
моі	DELS OF OPTIMAL BELIEFS	III
5	How and Why Does Schematic Knowledge Affect Memory <i>Qiong Zhang</i>	? 113
6	Probability, Belief, and the Richness of Cognition <i>Steve Piantadosi</i>	135
ІМР	LICIT VS EXPLICIT BELIEFS	151
7	Intuitive and Reflective Beliefs <i>Dan Sperber</i>	153
8	Intuitive and Reflective Beliefs in a Modern World <i>Bastien Trémolière and Florence Lespiau</i>	172

vi	Contents	
EVOLUTIONARY PSYCHOLOGY OF BELIEFS [9]		
9	Do Cultural Misbeliefs Cause Costly Behavior? <i>Hugo Mercier and Sacha Altay</i>	193
10	Cultural Evolutionary Psychology of Belief Theiss Bendixen and Benjamin Grant Purzycki	209
PAR	T II: DOMAINS OF BELIEFS	23I
REL	IGION AND MORALITY	233
II	Religious Beliefs Pascal Boyer	235
12	Essentialist Views of Criminal Behavior Predict Increased Punitiveness <i>Justin W. Martin, Sophie Charles, and Larisa Heiphetz</i>	254
ECO	NOMICS AND POLITICS	277
13	Political Belief Formation: Individual Differences and Situational Factors <i>Lala Muradova and Kevin Arceneaux</i>	279
14	Americans' Lack of Political Beliefs and the Consequences for Democracy <i>Yalidy Matos and Katherine McCabe</i>	298
15	Thoughts and Players: An Introduction to Old and New Economic Perspectives on Beliefs <i>Andras Molnar and George Loewenstein</i>	321
SCIENCE AND RACE		351
16	How Intuitive Beliefs Inoculate Us against Scientific Ones Andrew Shtulman	353
17	COVID-19: Conspiracies and Collateral Damage vs Constructive Critique Stephan Lewandowsky, Konstantinos Armaos, Hendrik Bruns, Philipp Schmid, Dawn Liu Holford, Ulrike Hahn, Ahmed Al-Rawi, Sunita Sah, John Cook, Marie Juanchich, and James Ladyman	374
18	Believing in Race vs Knowing Ourselves <i>Guy P. Harrison</i>	398

	Contents	vii
PART III: VARIATION IN BELIEFS 4		417
РАТ	THOLOGICAL BELIEFS	419
19	Delusions Philip R. Corlett	421
20	Delusions and Beliefs as a Symptom of Illness <i>Eisuke Sakakibara</i>	440
IND	DIVIDUAL DIFFERENCES IN BELIEFS	463
21	The Elusive Search for Individual Differences in Myside Thinking <i>Keith E. Stanovich and Maggie E. Toplak</i>	465
22	Modeling Individual Differences in Beliefs and Opinions Using Thurstonian Models <i>Michael D. Lee and Michelle Y. Ke</i>	488
ENV	VIRONMENTAL EFFECTS ON BELIEFS	513
23	Belief in Human Rights: An Opportunity for Cross-Cultural Cognitive Science <i>Jordan Kiper</i>	515
24	The Belief–Action Gap in Environmental Psychology: How Wide? How Irrational? <i>Aurore Grandin, Mélusine Boon-Falleur, and Coralie Chevallier</i>	536
TOWARD BETTER BELIEFS		555
25	Training Can Improve Decision Making <i>Irene Scopelliti</i>	557
26	Building Better Beliefs through Actively Open-Minded Thinking <i>Emlen Metz</i>	574
Index		592

Figures and Tables

Figures

3.1	Mentalistic titles only surpassed non-mentalistic titles in number in three leading comparative psychology journals starting in the early 2000s. Reproduced from Whissel	
	et al., 2013 p	age 65
6.1	Participant drawings of beliefs about the placement of	_
	internal organs heart, stomach, intestines, lungs, and kidneys	139
6.2	People's judgments (y-axis) of which other numbers are in	
	the set (x-axis) for each example set shown (facets).	
	For example, when told that 10, 80 are in the set, people	
	naturally generalize to other multiples of ten	141
9.1	Non-exhaustive map of the variety of anti-vaccine misbeliefs	
	throughout the world	200
12.1	Correlation between essentialism and punitiveness, Study 1	260
12.2	Mediation model tested in Study 2	263
17.1	Conceptual overview of the rhetorical landscape concerning	
	COVID-19	383
22.1	The classic Thurstonian model and its extensions to	
	subgroups and polarization	495
22.2	Results from the classic Thurstonian model, its extension to	
	allow subgroups, and its extension to include polarization	497
24.1	The belief-action gap in environmental psychology	545
•		

Tables

13.1	Sampling of the individual differences in reflective	
	political reasoning	page 283
20.1	Various themes of delusions	442

viii

Contributors

Julien Musolino	Department of Psychology and Rutgers University
	Center for Cognitive Science, Rutgers University,
	New Brunswick
Joseph Sommer	Department of Psychology, Rutgers University,
-	New Brunswick
Pernille Hemmer	Department of Psychology and Rutgers University
	Center for Cognitive Science Rutgers University,
	New Brunswick
Ahmed Al-Rawi	School of Communication, Simon Fraser University
Sacha Altay	Jean Nicod Institute, Department of Cognitive
	Studies, ENS, EHESS, PSL University, CNRS
Kevin Arceneaux	The Center for Political Research, SciencesPo, Paris
Konstantinos	Faculty of Business and Economics, University of
Armaos	Lausanne
Theiss Bendixen	Department of the Study of Religion, Aarhus
	University, DK
Mélusine	Jean Nicod Institute, Department of Cognitive
Boon-Falleur	Studies, ENS, PSL University, CNRS
Lisa Bortolotti	Philosophy Department and Institute for Mental
	Health, University of Birmingham
Pascal Boyer	Department of Anthropology, Washington
	University in St. Louis
Hendrik Bruns	European Commission Joint Research Centre (JRC)
Sophie Charles	Department of Psychology, Columbia University
Coralie Chevallier	Laboratory of Cognitive Neuroscience and
	Computational Studies, Department of Cognitive
	Studies, ENS, PSL University
John Cook	Communications & Media Studies, University
	Monash

ix

x	List of Contributors
Philip R. Corlett Aurore Grandin	Department of Psychiatry, Yale University Laboratory of Cognitive Neuroscience and Computational Studies, Department of Cognitive Studies, ENS, PSL University
Ulrike Hahn	Department of Psychological Sciences, Birkbeck College, University of London
Guy P. Harrison	Author
Larisa Heiphetz	Department of Psychology, Columbia University
Dawn Liu Holford	Department of Psychology, University of Essex
Ray Jackendoff	Center for Cognitive Studies, Tufts University
Ray Jackendon	and MIT
Marie Juanchich	Department of Psychology, University of Essex
Michelle Y. Ke	Department of Cognitive Sciences, University of
	California, Irvine
Jordan Kiper	Department of Anthropology, The University of
	Alabama at Birmingham
James Ladyman	Department of Philosophy, University of Bristol
Michael D. Lee	Department of Cognitive Sciences, University of
	California, Irvine
Florence Lespiau	APSY-V, University of Nîmes, Nîmes, France
Stephan	School of Psychological Science, University of
Lewandowsky	Bristol Social and Decision Sciences, Cornecia Mollon
George Loewenstein	Social and Decision Sciences, Carnegie Mellon University
Eric Mandelbaum	Philosophy, Baruch College and the Graduate
	Center, CUNY
Justin W. Martin	Department of Psychology and Neuroscience,
5	Boston College
Yalidy Matos	Political Science and Latino and Caribbean Studies,
•	Rutgers University, New Brunswick
Katherine	Political Science, Rutgers University, New
McCabe	Brunswick
Hugo Mercier	Jean Nicod Institute, Department of Cognitive
	Studies, ENS, EHESS, PSL University, CNRS
Emlen Metz	Department of Physics, University of California,
4 1 3 <i>5</i> 1	Berkeley
Andras Molnar	Center for Decision Research, University of Chicago Booth School of Business

List of Contributors

xi

Lala Muradova	Department of Political and Social Sciences, Univesitat Pompeu Fabra (Barcelona), Spain
Steve Piantadosi Nicolas Porot	Psychology, University of California, Berkeley Africa Institute for Research in Economics and Social Sciences
Benjamin Grant	Department of the Study of Religion, Aarhus
Purzycki	University, DK
Sunita Sah	SC Johnson Graduate School of Management,
	College of Business, Cornell University
Eisuke Sakakibara	Department of Neuropsychiatry, The University of Tokyo
Irene Scopelliti	Bayes Business School (formerly Cass), City
frene Scopeniti	University of London
Philipp Schmid	Media and Communication Science, University of
r mipp Semina	Erfurt
Andrew Shtulman	Department of Psychology, Occidental College
Dan Sperber	Institut Jean Nicod, Département d'études
Dan operber	cognitives, ENS, EHESS, Université PSL, CNRS
Keith E.	Department of Applied Psychology and Human
Stanovich	Development, University of Toronto
o tuno (i tun	
	1
20000000	The of v, oniversity of runnes, runnes, runnes,
	Department of History Philosophy and the Ancient
Lary Vintiadio	
Oiong Zhang	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
	New Brunswick
Maggie E. Toplak Bastien Trémolière Elly Vintiadis Qiong Zhang	Department of Psychology, York University APSY-V, University of Nîmes, Nîmes, France Department of History, Philosophy and the Ancient World, Deree – The American College of Greece Department of Psychology and Rutgers University Center for Cognitive Science, Rutgers University, New Brunswick