

Narrative Science

Narrative Science examines the use of narrative in scientific research over the last two centuries. It brings together an international group of scholars who have engaged in intense collaboration to find and develop crucial cases of narrative in science. Motivated and coordinated by the Narrative Science Project, funded by the European Research Council, this volume offers integrated and insightful essays examining cases that run the gamut from geology to psychology, chemistry, physics, botany, mathematics, epidemiology and biological engineering. Taking in shipwrecks, human evolution, military intelligence and mass extinctions, this landmark study revises our understanding of what science is, and the roles of narrative in scientists' work. This title is also available as Open Access.

MARY S. MORGAN is the Albert O. Hirschman Professor of History and Philosophy of Economics at the London School of Economics.

KIM M. HAJEK is a postdoctoral researcher associated with the Narrative Science Project, who currently works on the 'Scholarly Vices Project' at the University of Leiden.

DOMINIC J. BERRY is Research Fellow on the Narrative Science Project, and the 'Everyday Cyborgs 2.0' project at the University of Birmingham.

Narrative Science

*Reasoning, Representing and
Knowing since 1800*

Edited by

Mary S. Morgan

London School of Economics and Political Science

Kim M. Hajek

London School of Economics and Political Science

Dominic J. Berry

London School of Economics and Political Science



CAMBRIDGE
UNIVERSITY PRESS

Cambridge University Press & Assessment
978-1-316-51900-4 — Narrative Science
Edited by Mary S. Morgan, Kim M. Hajek, Dominic J. Berry
Frontmatter
[More Information](#)

CAMBRIDGE UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, 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 the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning, and research at the highest international levels of excellence.

www.cambridge.org
Information on this title: www.cambridge.org/9781316519004
DOI: 10.1017/9781009004329

© Mary S. Morgan, Kim M. Hajek and Dominic J. Berry 2022

This work is in copyright. It is subject to statutory exceptions and to the provisions of relevant licensing agreements; with the exception of the Creative Commons version the link for which is provided below, no reproduction of any part of this work may take place without the written permission of Cambridge University Press.

This project has received funding from the European Research Council under the European Union's Horizon 2020 research and innovation programme (grant agreement No. 694732): www.narrative-science.org/

An online version of this work is published at doi.org/10.1017/9781009004329 under a Creative Commons Open Access license CC-BY-NC-ND 4.0 which permits re-use, distribution and reproduction in any medium for non-commercial purposes providing appropriate credit to the original work is given. You may not distribute derivative works without permission. To view a copy of this license, visit <https://creativecommons.org/licenses/by-nc-nd/4.0>

All versions of this work may contain content reproduced under license from third parties.

Permission to reproduce this third-party content must be obtained from these third-parties directly.

When citing this work, please include a reference to the DOI 10.1017/9781009004329

First published 2022

Printed in the United Kingdom by TJ Books Limited, Padstow Cornwall

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

Library of Congress Cataloging-in-Publication Data

Names: Morgan, Mary S., editor.

Title: Narrative science : reasoning, representing and knowing since 1800 / edited by Mary S. Morgan, London School of Economics and Political Science, Kim M. Hajek, London School of Economics and Political Science, Dominic J. Berry, London School of Economics and Political Science.

Description: Cambridge, United Kingdom ; New York, NY, USA : Cambridge University Press, 2022. | Includes bibliographical references and index.

Identifiers: LCCN 2022022798 (print) | LCCN 2022022799 (ebook) | ISBN 9781316519004 (hardback) | ISBN 9781009001991 (paperback) | ISBN 9781009004329 (ebook)

Subjects: LCSH: Communication in science. | Research – Methodology. | BISAC: TECHNOLOGY & ENGINEERING / History

Classification: LCC Q223 .N319 2022 (print) | LCC Q223 (ebook) | DDC 501/.4–dc23/eng/20220718

LC record available at <https://lccn.loc.gov/2022022798>

LC ebook record available at <https://lccn.loc.gov/2022022799>

ISBN 978-1-316-51900-4 Hardback
ISBN 978-1-009-00199-1 Paperback

Cambridge University Press 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

| | |
|-------------------------------------|-----------|
| <i>List of Figures</i> | page viii |
| <i>List of Tables</i> | x |
| <i>List of Contributors</i> | xi |
| <i>Preface and Acknowledgements</i> | xvi |

I Prologues

- | | |
|---|----|
| 1 Narrative: A General-Purpose Technology for Science MARY S. MORGAN | 3 |
| 2 What Is Narrative in Narrative Science? The Narrative Science Approach KIM M. HAJEK | 31 |

II Matters of Time

*When time matters in the sciences, it matters in their narratives,
 but those narratives rarely use a simple account of time*

- | | |
|---|-----|
| 3 Mass Extinctions and Narratives of Recurrence JOHN E. HUSS | 61 |
| 4 The Narrative Nature of Geology and the Rewriting of the Stac Fada Story ANDREW HOPKINS | 82 |
| 5 Reasoning from Narratives and Models: Reconstructing the Tohoku Earthquake TERU MIYAKE | 104 |
| 6 Stored and Storied Time in Archaeology ANNE TEATHER | 122 |

| | | |
|------------|---|-----|
| vi | Contents | |
| III | Accessing Nature's Narratives | |
| | <i>When nature is seen as narrating itself, narrative becomes a constituent feature of scientific accounts</i> | |
| 7 | Great Exaptations: On Reading Darwin's Plant Narratives DEVIN GRIFFITHS | 143 |
| 8 | From Memories to Forecasting: Narrating Imperial Storm Science DEBJANI BHATTACHARYYA | 164 |
| 9 | Visual Evidence and Narrative in Botany and War: Two Domains, One Practice ELIZABETH HAINES | 185 |
| 10 | The Trees' Tale: Filigreed Phylogenetic Trees and Integrated Narratives NINA KRANKE | 206 |
| IV | Interlude | 227 |
| 11 | Process Tracing and Narrative Science SHARON L. CRASNOW | 229 |
| V | Research Narratives | |
| | <i>When scientists write about their research, their narratives centre on their practices but reveal their beliefs about phenomena</i> | |
| 12 | Research Narratives and Narratives of Nature in Scientific Articles: How Scientists Familiarize Their Communities with New Approaches and Epistemic Objects ROBERT MEUNIER | 247 |
| 13 | Thick and Thin Chemical Narratives MAT PASKINS | 267 |
| 14 | Reporting on Plagues: Epidemiological Reasoning in the Early Twentieth Century LUKAS ENGELMANN | 287 |
| 15 | The Politics of Representation: Narratives of Automation in Twentieth-Century American Mathematics STEPHANIE DICK | 309 |

| | |
|---|-----|
| Contents | vii |
| 16 Chronicle, Genealogy and Narrative: Understanding Synthetic Biology in the Image of Historiography DOMINIC J. BERRY | 328 |
| VI Narrative Sensibility and Argument <i>When narrative acts as a site for reasoning</i> | |
| 17 Anecdotes: Epistemic Switching in Medical Narratives BRIAN HURWITZ | 351 |
| 18 Narrative Performance and the ‘Taboo on Causal Inference’: A Case Study of Conceptual Remodelling and Implicit Causation ELSPETH JAJDELSKA | 371 |
| 19 Reading Mathematical Proofs as Narratives LINE EDSLEV ANDERSEN | 391 |
| 20 Narrative Solutions to a Common Evolutionary Problem JOHN BEATTY | 405 |
| 21 Just-so What? PAULA OLMOS | 424 |
| VII Finale | |
| 22 Narrative and Natural Language M. NORTON WISE | 447 |
| <i>Index</i> | 465 |

Figures

| | | |
|------|--|---------|
| 3.1 | The ‘big five’ mass extinctions | page 63 |
| 3.2 | Graph of percentage extinction of fossil marine families for each geologic stage of the past 250 million years | 64 |
| 3.3 | Stratigraphic ranges of 21 lineages (i.e., species genus <i>Linnaeus</i>) of ammonites found at Zumaya, Spain | 72 |
| 3.4 | Thought experiment on causes of extinction | 75 |
| 4.1 | Location map of the Stac Fada outcrop | 87 |
| 4.2 | Ball-shaped accretionary lapilli on the surface of a Stac Fada Member outcrop | 88 |
| 4.3 | Photomicrograph of a shocked quartz grain from the Stac Fada Member | 90 |
| 4.4 | The impactoclastic emplacement of the Stac Fada ejecta blanket | 93 |
| 5.1 | Cutaway view of Tohoku fault | 108 |
| 5.2 | Representation of the time progression of the rupture for the 2011 Tohoku earthquake | 110 |
| 5.3 | Comparison of slip according to 45 different source models of the Tohoku earthquake | 113 |
| 6.1 | Iron pyrites (left) and chalk charms (right) from the burial of a female, dated to 3600 BCE | 126 |
| 6.2 | Schematic representation of narrative reasoning in archaeological chronologies for British prehistory | 127 |
| 7.1 | <i>Phaseolus multiflorus</i> | 145 |
| 7.2a | Auxanometer | 150 |
| 7.2b | Horace Darwin’s self-recording auxanometer | 150 |
| 7.2c | Experimental design for Charles Darwin and Francis Darwin’s plant nutation observations | 150 |
| 7.3a | <i>Vicia faba</i> | 154 |
| 7.3b | <i>Brassica oleracea</i> | 154 |
| 7.3c | <i>Brassica oleracea</i> | 154 |
| 8.1 | Piddington’s storm card, 1848 | 177 |

| List of Figures | ix |
|--|-----|
| 8.2 S. B. Luce's recreation of the storm card, from <i>The Textbook of Seamanship</i> (1891) | 179 |
| 9.1 The Town of Kulawund, partly ruined, near Kifri | 187 |
| 9.2 Photograph of a fossil collected by Thomas in Yorkshire | 188 |
| 10.1 Plain marsupial tree | 211 |
| 10.2 Filigreed marsupial tree | 213 |
| 10.3 Vertebrate tree at the University of Kansas Natural History Museum | 219 |
| 10.4 Great ape tree | 222 |
| 13.1 Modern representation of Robinson's 'landmark' synthesis of tropinone | 271 |
| 13.2 Robinson's original representation of 'A Synthesis of Tropinone' | 275 |
| 14.1 Section of a chart provided by the Bombay Plague Committee for 1896–97 | 300 |
| 14.2 A 'progress map' of the plague in Bombay in 1897 and 1898 | 302 |
| 14.3 Map used by Ernest Hill to demonstrate the correlation of rat plague and human cases, Durban 1903 | 303 |
| 16.1 Patterns of expression of different promoters transferred to three plants | 337 |
| 20.1 Flatfish (flounder) topside | 406 |
| 20.2 Still life by Jan van Kessel the Elder | 407 |
| 20.3 A depiction of eye migration in starry flounder larvae, that also illustrates Darwin's suggested evolutionary account of the flatfish eye | 411 |
| 20.4 Branching-tree representation of narrative-worthy stories | 419 |
| 20.5 Branching time representation of flatfish evolution | 420 |
| 21.1 Conjunction of reasons justifying an evolutionary hypothesis | 431 |
| 21.2 A fortiori rationale behind the charge of unwarranted reductionism | 432 |
| 21.3 A fortiori rationale behind the charge of prescriptive insufficiency | 433 |
| 22.1 A representation of lines of force surrounding a bar magnet with north and south poles | 456 |
| 22.2 (a) and (b) Current-carrying coil and Faraday's depiction of the relation of electric current lines | 457 |
| 22.3 Maxwell's abstract theory of the electrotonic state | 459 |

Tables

| | | |
|------|--|----------|
| 7.1 | Narrative levels in Charles Darwin and Francis Darwin, <i>The Power of Movement in Plants</i> (1880) | page 158 |
| 16.1 | Reading history of historiography, narrative theory and philosophy of history | 333 |

Contributors

LINE EDSLEV ANDERSEN is currently on maternity leave. She wrote her chapter for this volume while working as a postdoc at the Centre for Science Studies, Department of Mathematics, Aarhus University. Her main area of research is the philosophy of mathematical practice and the philosophy of science in practice.

JOHN BEATTY is Professor in the History and Philosophy of Science and Social and Political Philosophy at the University of British Columbia. His current research projects concern, more specifically: (1) the distinction between ‘history’ and ‘science’ and the respects in which evolutionary biology is as much like the former as it is like the latter, (2) changing views of contingency and necessity in the Darwinian Revolution, (3) the relationships between biology and ‘the state’, from the Manhattan Project to the Human Genome Project, and (4) issues concerning the nature of scientific ‘authority’.

DOMINIC BERRY is a Research Fellow on the Narrative Science Project. His research brings together historical, philosophical and social scientific methods and analyses attending to the biological sciences in particular. He has held research fellowships at the University of Leeds and the University of Edinburgh. In 2021, he joined ‘Everyday Cyborgs 2.0’, a Wellcome Trust-funded project based at the University of Birmingham. In 2019, he co-founded the Biological Engineering Collaboratory (www.bioengcoll.org) and in 2021 helped create the Transformational HPS network, which supports scholars who are queering, decolonizing and centring disability within HPS (www.transformationalhps.org).

DEBJANI BHATTACHARYYA is the Professor for the History of the Anthropocene at University Zürich. She is the author of *Empire and Ecology in the Bengal Delta: The Making of Calcutta* (Cambridge University Press, 2018). Currently, she is a non-resident fellow at the Center for the Advanced Study of India (CASI), University of Pennsylvania. Most recently, she was a Shelby Cullom Davis Fellow at Princeton University. Her work has been published in *Modern Asian*

xii List of Contributors

Studies, Journal of Economic and Social History of the Orient and Comparative Studies in South Asia and Africa and the Middle East.

SHARON L. CRASNOW is Distinguished Professor Emerita, Norco College, Southern California. Her research is on methodological issues in the social sciences with a focus on political science. She has published in *Philosophy of Social Science*, *Philosophy of Science*, *Studies in History and Philosophy of Science* and *Synthese*. She also works on feminist philosophy of science and epistemology and is co-editor (with Kristen Intemann) of *The Routledge Handbook of Feminist Philosophy of Science* (2021).

STEPHANIE DICK is an assistant professor in the School of Communication at Simon Fraser University. She holds a PhD in history of science from Harvard University. She is a historian of mathematics, computing and artificial intelligence in the twentieth-century United States. In particular, she studies the early introduction of computing and automation to American mathematics and to American policing during the Cold War.

LUKAS ENGELMANN is a Chancellor's Fellow and Senior Lecturer in the History and Sociology of Biomedicine at the University of Edinburgh. His research concerned with the history of epidemiological reasoning in the twentieth century received an ERC Starting Grant in 2020. His first book, *Mapping AIDS*, was published by Cambridge University Press in 2018 and considers the visual and medical history of AIDS/HIV. In 2020, he published a co-authored monograph on sulphuric utopias, with Christos Lynteris (open access), which tells the technological history of fumigation and the political history of maritime sanitation at the turn of the twentieth century.

DEVIN GRIFFITHS is an associate professor of English and comparative literature at the University of Southern California. His first book, *The Age of Analogy: Science and Literature between the Darwins*, explores how analogy helped shape the disciplinary formations of the life sciences and humanities. With Deanna Kreisel, he is co-editor of a forthcoming Cambridge University Press collection on the influence of Darwin's thinking on the humanities, entitled *After Darwin*. He is currently working on a new book, *The Ecology of Power*, that explores, from the perspective of the energy humanities, the historical intersection of ecological and economic theory.

ELIZABETH HAINES is Vice-Chancellor's Fellow in History at the University of Bristol. Her research applies interdisciplinary approaches to the lived practices of knowledge-making, particularly in colonial and postcolonial contexts. She has a particular interest in visual and material culture as tools within knowledge practices. Recent research collaborations include

work with physical scientists, NGOs, heritage and art practitioners in the UK, Kenya, Zambia, Belgium and the United States. She is currently completing a monograph, *Illegible Territory*, that explores the use and disuse of geographical knowledge by the colonial government in Northern Rhodesia, developed from her doctoral and post-doctoral research.

KIM M. HAJEK was a postdoctoral researcher on the Narrative Science Project at the LSE, and currently works at the University of Leiden in the ‘Scholarly Vices Project’. She is affiliated with the Institut des humanités en médecine, Lausanne, and serves as Associate Editor for *Centaurus* and on the editorial board of *Journal of the History of the Behavioral Sciences*. Kim’s research spans history of science and literary studies, focusing on how textual practices inform knowledge-making in the human sciences. Her publications explore ideas of normality and case-writing in nineteenth-century French psychology, as well as science/literature intersections in the history of hypnotism.

ANDREW HOPKINS is an Honorary Research Associate in the Department of Science and Technology Studies at University College London. He also served as a Research Officer on the Narrative Science Project at the London School of Economics. A former industrial geoscientist and science educator, he is currently active in the field of history and philosophy of science, with a particular interest in understanding what enables historical sciences such as geology to reconstruct the deep past. He has a PhD in marine geology and geophysics and is a Fellow of the Geological Society of London.

BRIAN HURWITZ is Emeritus Professor of Medicine and the Arts at King’s College London. He worked as an inner-city general practitioner and academic for thirty years, becoming Professor of Primary Care and General Practice at Imperial College London. In 2002, he moved to King’s to set up the Centre for the Humanities and Health, a multidisciplinary research unit that also offers Master’s, PhD and postdoctoral education for students of the humanities, biosciences and health professionals. Based in the English Department, his research interests include narrative studies in relation to clinical practice, ethics, law and the epistemic aspects of clinical cases.

JOHN E. HUSS is professor of philosophy at the University of Akron, where he is also on the faculty of the Integrated Bioscience PhD program and a member of the Biomimicry Research and Innovation Center. His research interests include philosophy of science, philosophy of medicine, applied ethics and philosophy of popular culture.

xiv List of Contributors

ELSPETH JAJDELSKA is a senior lecturer in English at the University of Strathclyde. She researches the cognitive experience of narrative fiction as well as the history of reading experience. She has published on cognition of literary fiction in *Poetics Today*, *Journal of Literary Semantics*, *Philosophical Psychology* and *Frontiers in Psychology*. Her monograph, *Speech, Print and Decorum in Britain, 1600–1750*, uses anthropological theories of verbal art and performance to explain historical changes in reading experience. She is currently working on a project on the relationship between internal scene construction and narrative experience.

NINA KRANKE studied environmental sciences and philosophy in Lüneburg and Greifswald, Germany. She started her PhD project at the University of Kassel and is now a research assistant at the Department of Philosophy at the University of Münster and a member of the interdisciplinary DFG Research Training Group 2220 ‘Evolutionary Processes in Adaptation and Disease’ (EvoPAD). Her research interests include philosophy of science, philosophy of biology, feminist philosophy, bioethics and animal ethics.

ROBERT MEUNIER is research fellow at the Institute for the History of Medicine and Science Studies at the University of Lübeck, Germany, and part of the Cluster of Excellence ‘Precision Medicine in Chronic Inflammation’. In 2012, he graduated from the PhD programme, ‘Foundations of the Life Sciences and their Ethical Consequences’, jointly hosted by the University of Milan and the European School of Molecular Medicine. Since then, he worked at the Max Planck Institute for the History of Science, the Institute for Cultural Inquiry Berlin, the Department of History, LMU Munich, the Department of Philosophy, University of Kassel, and the ERC-funded Narrative Science Project at the London School of Economics. From 2018 to 2021 he was Principal Investigator in the DFG-funded research project, ‘Forms of Practice, Forms of Knowledge’, located at the University of Kassel.

TERU MIYAKE is an associate professor and head of the philosophy programme at Nanyang Technological University in Singapore, and a former Fellow of the Radcliffe Institute for Advanced Study. His research has centred on epistemological issues in the physical sciences, particularly planetary astronomy, seismology and late nineteenth- and early twentieth-century experimental physics. He has also written on measurement, the use of models in science, scientific realism and nineteenth-century British philosophy of science.

MARY S. MORGAN is the Albert O. Hirschman Professor of History and Philosophy of Economics at the London School of Economics, an elected Fellow of the British Academy and an Overseas Fellow of the Royal Dutch

Academy of Arts and Sciences. She has published on social scientists' practices of modelling, observing, measuring and making case studies, and is especially interested in how ideas, numbers and facts are used in projects designed to change the world. Her most recent books are *How Well Do Facts Travel?* (2011) and *The World in the Model* (2012), both published by Cambridge University Press.

PAULA OLMOS is an associate professor of logic and philosophy of science at Madrid's Autonomous University. Her research interests cover argumentation theory and rhetoric, focusing especially on argumentation in science. She has published papers on these subjects in journals including *Argumentation*, *Informal Logic* and *Revista Iberoamericana de Argumentación*, and in several collective volumes of Springer's 'Argumentation Series'. She has acted as co-editor of reference works including *Compendio de lógica, Argumentación y retórica* (2011, 2012, 2013, 2016) and *De la demostración a la argumentación* (2015), and has coordinated and edited the volume of essays *Narration as Argument* (2017).

MAT PASKINS works for a charity and has a PhD in the history of science. They have written about the relations between the history of science and voluntary associations, the role of tree-planting in British politics and notions of improvement and histories of chemistry and material sciences. Mat is also interested in relations between science and literature and has co-edited two anthologies of narrative science.

ANNE TEATHER is an archaeologist who specializes in the material culture of the Neolithic period (5000–2000 BCE) in northern Europe. She is Managing Director of Past Participate CIC, a non-profit community archaeology company that provides high-quality archaeological excavation and research training. She is a visiting fellow at Bournemouth University and publishes regularly on prehistoric art and archaeological theory. She taught as a fixed-term lecturer at the University of Chester (2007–12) and is currently writing a monograph, *Power from the Periphery*, an account of the role of material culture in prehistoric societies.

M. NORTON WISE is Distinguished Research Professor (Emeritus) in the Department of History at UCLA and has published widely in the history of the physical sciences in the nineteenth and twentieth centuries. His most recent book is *Aesthetics, Industry, and Science: Hermann von Helmholtz and the Berlin Physical Society*. He has also published a variety of articles on narrative in science, especially concerning the role of computer simulations and visual narratives. With Mary Morgan, he has edited a special issue of *Studies in History and Philosophy of Science* on narratives in science.

Preface and Acknowledgements

We began the Narrative Science Project with the aim of finding and analysing narratives as they occurred in the disparate and varied sites offered across the terrain of as many natural/physical/human/social sciences as we could. We did not aim to be comprehensive, for science exists in too many guises, and nor did we assume all science was narrative. But as our project progressed we came to recognize both how surprisingly widespread narratives were in science, and how they are shown in diagrams, maps and equations as well as told in texts, protocols, books and journal articles. We did not aim to impose an account of narrative onto science, but rather to explore the different narrative formats that scientists use, and the different functions that narrative fulfils for those scientists. We did not aim to create a well-researched map, but our detailed case-work created a picture with the features of a medieval tapestry: exhibiting both the detailed texture of many individual science narratives and the amazing spread of how narrative appears in science.

Our second starting ambition was to persuade both literary communities who study narrative, and science studies communities who study science, ‘to take narrative science seriously’. This caused us to walk several tightropes at once. First, we were all too conscious – from typical reactions – that putting narrative and science together is problematic, for narrative is almost automatically associated with stories, and thence with something fictional. To mitigate this, we have largely kept to the terminology ‘narrative’. Second, was the tendency to assume that we were interested in narrative as a public engagement device that enabled the public to understand science, whereas we were interested in how scientists use narrative within their own communities, scientist-to-scientist, for their own purposes. Third, literary scholars sometimes assumed that either our interests were focused on factual narratives, or on the literariness of scientific prose. Narratives in science may be about facts, but may be about theories, or even both at once, and we were not primarily interested in literary qualities or the range of literary devices used by scientists. Instead, our engagement with the narrative community has been to understand how narrative functions to create joined-up accounts of things in particular domains (in our case, the various domains of science), and in what makes such relatedness

‘tellable’. Fourth (although this only became clearly evident as we went along), our interests covered not just the predictable places of narrative in reporting the process of scientific research activities and outcomes, or the life histories of scientific phenomena, but the ways in which narrative plays an important role in doing science. Thus, to our constituencies in history and philosophy of science, we propose that narrative-making shows its power in making sense of a phenomenon, and in so doing becomes a part of scientific reasoning, argument and inference.

What became the ‘our’ in our team is a critical part of our narrative-science project. We assembled a ‘home team’ from history and philosophy of science and literary studies (each person also held knowledge of at least one science field) and drew extensively on the help of intellectual interlocutors from the pre-history of the project. These conversations go back to an early meeting (in 2013), generously hosted by Raine Daston at the Max Planck Institute of the History of Science, and forward to the special issue of *SHPS* (published in 2017). Then, over the five years of our project time (2016–21), ‘our team’ widened to embrace an incredible range of scholars who came to deliver seminars, provided papers at our specialist workshops, joined us in specially constructed symposium sessions at conferences, and who contributed cases and commentaries to our Anthologies and working papers. Together they constituted a community extending and enriching the Narrative Science Project in creating both this book and the multiple further resources on our project website www.narrative-science.org/. Without them, our narrative science tapestry would be restricted in range, thin in colour and lacking depth of conviction. We thank them all below (and apologize if our listing misses any of our wider team!), as well as the ‘anonymous’ reviewers of our book chapters and the book as a whole.

‘Intellectutors’

Norton Wise, Jim Griesemer, Raine Daston, Sharon Crasnow, John Beatty, Brian Hurwitz, Ted Porter, Naomi Oreskes, Chiara Ambrosio, Mary Terrall, Greg Priest, Paul Roth, Roman Frigg and Sabina Leonelli.

Workshop Speakers

Puzzles and Problems of Classifying and Categorizing

Staffan Mülle-Wille, Yossi Lichtenstein, Andrea Woody, Jan-Willem Romeijn, Santi Funari and Rachel Ankeny.

Cambridge University Press & Assessment
978-1-316-51900-4 — Narrative Science
Edited by Mary S. Morgan, Kim M. Hajek, Dominic J. Berry
Frontmatter
[More Information](#)

xviii Preface and Acknowledgements

Narrative Science and Its Visual Practices

Mirjam Brusius, Elizabeth Haines, Nina Kranke, Nicola Williams, Annamaria Carusi and Jonathan Gray.

Expert Narratives: Systems, Policies and Practices

Andrea Mennicken, Brendan Clarke, Hannah Roscoe, Chris Hall, Shana Vijayan, Lars Bo Henriksen and Natasha McCarthy.

Narratives as Navigation Tools

Martin Stahl, Rebecca Wilbanks, Sabine Baier, Cathal Cummins, Miguel Garcia-Sancho and Karen Polizzi.

Does Time Always Pass? Temporalities in Scientific Narratives

Norton Wise, John Beatty, Dorothea Debus, Paula Olmos, Rosa Hardt, William Matthews, John Huss, Teru Miyake, Anne Teather, Elspeth Jajdelska, Thomas Bonnin, Tirthankar Roy and Daniel Pargman.

Scientific Polyphony: How Scientific Narratives Configure Many 'Voices'

Debjani Bhattacharyya, Devin Griffiths, Isabelle Kalinowski, Birgit Lang, Harro Maas, Jill Slinger, Lotte Bontje and Rhianedd Smith.

Narrative Science in Techno-Environments

Ina Linge, Jean-Baptiste Gouyon, Amelie Bonney, Ross Brooks, Louise Coueffe, Greg Lynall, John Lidwell-Durmin, Harriet Ritvo, Saliha Bayir, Ágota Ábrán, João P. R. Joaquim, Ellie Armstrong, Aadita Chaudhury, Mauricio Nicolas Vergara, Sarah Bezan, Charlotte Sleigh, Animesh Chatterjee, sam smiley, Sarah Daw, Lachlan Fleetwood, Jon Agar, Anahita Rouyan and Alexander Hall.

Narrative and Mathematical Argument

David Corfield, Michael Friedman, Line Edslev Andersen, Mikkel Willum Johansen, Henrik Kragh Sørensen, Fenner Tanswell, Karine Chemla and Stephanie A. Dick.

Preface and Acknowledgements

xix

Anecdotes: Little Narratives That Carry Bigger Weight

Brian Hurwitz, Martin Böhnert and Guillaume Yon.

Speakers in the Public Seminar Series

Sally Atkinson, Elisa Vecchione, Julia Sánchez-Dorado, Claudia Cristalli, Caitlin Donahue Wylie, Sigrid Leyssen, Lukas Engelmann, Sabine Baier, Sharon Crasnow, Phyllis Kirstin Illari, Ivan Flis, Adrian Currie, Alfred Nordmann, Eleanore Loiodice, Annamaria Contini, Adelene Buckland, Sarah Dillon, Vito De Lucia, Marco Tamborini, Staffan Müller-Wille, Neil Tarrant, Heike Hartung, Sally Horrocks, Paul Merchant, Emily Hayes, Veronika Lipphardt, Will Tattersdill and Lorraine Daston.

Symposium Collaborators

Sarah Lawrence, David G. Horn, Ivan Flis, Dmitriy Myelnikov, Meria Gold, Ageliki Lefkadiou, Debjani Bhattacharyya, Nicole Edelman, Sigrid Leyssen, Robert Bud, Lijing Jiang, Tiago Saraiva, Ian Hesketh, Miriam Solomon, Anna Svensson, Greg Priest, Corinne Bloch-Mullins, Ellie Armstrong, Michael Toze, Ross Brooks, Aude Fauvel, Larry Duffy, Daniela S. Barberis, Gerald Sullivan, Jonathan Shann, Junona S. Almonaitienè, Veronika Girininkaitė, Sharman Levinson, Janella Baxter, Robert Smith, Hanna Lucia Worliczek, Caterina Schürch, Thomas Bonnin and Mathias Grote.

Anthology Contributors

Sabine Baier, Debjani Bhattacharyya, Ross Brooks, Geoffrey Cantor, Silvia De Bianchi, Federico D'Onofrio, Helena Hammond, Colin McSwiggen, Felicity Mellor, Martin Böhnert, Greg Priest, Jim Scown and Keith Tribe.

Home Team

Mary S. Morgan, Dominic J. Berry, Kim Hajek, Andrew Hopkins, Robert Meunier and Mat Paskins. (These researchers were directly funded by the ERC under the European Union's Horizon 2020 research and innovation programme [grant agreement No. 694732].)

We also thank the following for their permissions to reproduce the following images:

- 3.1 – Raup, D. M., & Sepkoski, J. J. (1982). 'Mass extinctions in the marine fossil record'. *Science*, 215.4539: 1501–1503.
- 3.2 – Reproduced with thanks to the controllers of Raup and Sepkoski's respective estates.

xx Preface and Acknowledgements

- 4.2 – Reproduced courtesy of Renegade Pictures/Channel 4.
- 4.3 – Amor, K., Hesselbo, S., Porcelli, D., Thackrey, S. and Parnell, J. (2008). ‘A Precambrian proximal ejecta blanket from Scotland’. *Geology* 36.4:303.
- 4.4 – Branney, M. and Brown, R., (2011). ‘Impactoclastic Density Current Emplacement of Terrestrial Meteorite-Impact Ejecta and the Formation of Dust Pellets and Accretionary Lapilli: Evidence from Stac Fada, Scotland’. *The Journal of Geology* 119.3: 275–292.
- 5.1 – Figure kindly provided by Dr Jeroen Ritsema.
- 5.2 – Suzuki, W., Aoi, S., Sekiguchi, H., and Kunugi, T. (2011). ‘Rupture process of the 2011 Tohoku-Oki mega-thrust earthquake (M9.0) inverted from strong-motion data’. *Geophysical Research Letters* 38, L00G16.
- 7.1 – Reproduced, with permission, from John van Wyhe, ed., *The Complete Work of Charles Darwin Online*. (http://darwin-online.org.uk/converted/pdf/1880_Movement_F1325.pdf).
- 7.2.a – With thanks to The Rare Book and Manuscript Library, University of Illinois at Urbana-Champaign.
- 7.2.b – With thanks for permission to reproduce from the Whipple Library, University of Cambridge.
- 7.3.a – Reproduced, with permission, from John van Wyhe, ed., *The Complete Work of Charles Darwin Online*. (http://darwin-online.org.uk/converted/pdf/1880_Movement_F1325.pdf).
- 7.3.b – Reproduced, with permission, from John van Wyhe, ed., *The Complete Work of Charles Darwin Online*. (http://darwin-online.org.uk/converted/pdf/1880_Movement_F1325.pdf).
- 7.3.c – Reproduced, with permission, from John van Wyhe, ed., *The Complete Work of Charles Darwin Online*. (http://darwin-online.org.uk/converted/pdf/1880_Movement_F1325.pdf).
- 8.1 – Reproduced, with permission, from the British Library, London, as part of the Google Books project.
- 8.2.a – Made available by US National Archives.
- 8.2.b – Made available by US National Archives.
- 10.3 – Reproduced, with permission, from the Kansas Natural History Museum.
- 10.4 – Reproduced, with permission, from Volker Sommer original author and image maker.
- 13.1 – Robinson, Robert. (1917). ‘LXIII.—A synthesis of tropinone’. *Journal of the Chemical Society, Transactions* 111: 762–768.
- 13.2 – Medley, Jonathan William, and Mohammad Movassaghi. (2013). ‘Robinson’s landmark synthesis of tropinone’. *Chemical Communications* 49.92: 10775–10777.