HOW WELL DO FACTS TRAVEL?

Why write about facts? Facts are everywhere. They litter the utterances of public life as much as the private conversations of individuals. They frequent the humanities and the sciences in equal measure. But their very ubiquity tells us not only why it is difficult to form general but sensible answers in response to seemingly simple questions about facts, but also why it is important to do so.

This book discusses how facts travel, and when and why they sometimes travel well enough to acquire an independent life of their own. Whether or not facts travel in this manner depends not only on their character and ability to play useful roles elsewhere, but also on the labels, packaging, vehicles, and company that take them across difficult terrains and over disciplinary boundaries. These diverse stories of travelling facts, ranging from architecture to nanotechnology and from romance fiction to climate science, change the way we see the nature of facts. Facts are far from the bland and rather boring but useful objects that scientists and humanists produce and fit together to make narratives, arguments, and evidence. Rather, their extraordinary abilities to travel well – and to fly flags of many different colours in the process – show when, how, and why facts can be used to build further knowledge beyond and away from their sites of original production and intended use.

Peter Howlett is an expert on the economic history of World Wars I and II, and contributed the text for the official history *Fighting with Figures* (1995). Dr. Howlett's publications also explore international economic growth and convergence since 1870 and the development of internal labour markets, and have appeared in edited volumes and journals such as the *Economic History Review*, *Explorations in Economic History*, and *Business History*. He teaches at the London School of Economics and is secretary of the Economic History Society.

Mary S. Morgan is professor of history and philosophy of economics at the London School of Economics and the University of Amsterdam. She has published widely on topics ranging from statistics to experiments to narrative, and from social Darwinism in late-nineteenth-century America to game theory in the Cold War. Her major works include *The History of Econometric Ideas* (1990), *The Foundations of Econometric Analysis* (1995, co-edited with David F. Hendry), and *Models as Mediators* (1999, co-edited with Margaret Morrison). Professor Morgan's account of scientific modelling is forthcoming in *The World in the Model*. She is currently engaged in the research project "Re-Thinking Case Studies across the Social Sciences" as a British Academy–Wolfson research professor.

ADDITIONAL PRAISE FOR *HOW WELL DO FACTS TRAVEL?*

"This fascinating interdisciplinary collection arising from an extraordinary international collaboration is a significant and innovative contribution to a crucial question in science and technology studies: what do we mean by a 'fact'? New light is thrown on this old question by a fresh focus on the transmission and transformation of facts between different contexts, with very welcome attention to neglected subject areas, too. It is an intellectual feast of a volume, with plenty of food for thought for historians, philosophers, and natural and social scientists, especially those who are uncomfortable sitting in conventional disciplinary pigeonholes."

– Hasok Chang, *University of Cambridge*

"*How Well Do Facts Travel?* accomplishes the uncommon feat of bringing fresh thinking to a most common phenomenon. Far more than merely contextualizing the use of 'facts' in myriad fields, this eye-opening and deeply thoughtful collection of essays sets facts in motion, models their dynamics, and maps their travels. Adventurous yet grounded, the group of scholars engages and challenges assumptions in disciplines ranging from history and archaeology to economics and policy to biology and design."

– Randall Mason, *University of Pennsylvania*

"Stemming from a five-year group multidisciplinary research project, *How Well Do Facts Travel?* is a welcome and insightful contribution to the growing bodies of scholarship on comparative and historical epistemology, cultural and technological transfer, social networking, and the philosophies of the social and physical sciences. As with the work of Daston, Poovey, and Latour, this diverse and compelling collection of essays will be as usefully provocative to scholars in the arts and humanities as it will to those in the sciences."

– Mark A. Meadow, *University of California, Santa Barbara; Leiden University, the Netherlands*

"*How Well Do Facts Travel?* provides an usual perspective on science and its communication by dealing with the 'lives of facts' and their constitution, development, and circulation, in disciplines as diverse as architecture and social psychology, climate science, and gerontology."

– Staffan Mueller-Wille, *University of Exeter*

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Edited by Peter Howlett and Mary S. Morgan
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How Well Do Facts Travel?

The Dissemination of Reliable Knowledge

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Peter Howlett is a senior lecturer in the Department of Economic History at the London School of Economics. He has previously studied the economic aspects of World Wars I and II; international economic growth and convergence since 1870; and the development of internal labour markets, publishing on these topics in journals such as the *Economic History Review* and *Explorations in Economic History*. His involvement in the "Facts" project grew out of an interest in the Indian Green Revolution; his Facts Working Paper (24/08) considers this from the perspective of facts travelling across social science disciplines.

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Mary S. Morgan is professor of history and philosophy of economics at the London School of Economics and the University of Amsterdam. She has published widely on topics ranging from statistics to experiments to narrative, and from social Darwinism in late-nineteenth-century America to game theory in the Cold War. Her major works include *The History of Econometric Ideas* (1990) and *Models as Mediators* (1999 with Margaret Morrison), and her account of scientific modelling is forthcoming in *The World in the Model*. She is currently engaged in the research project "Re-thinking Case Studies Across the Social Sciences" as a British Academy–Wolfson research professor.

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Heather Schell is an assistant professor at George Washington University, where she directs the First-Year Writing Program and teaches courses on popular culture. Her work focuses on the lines of communication between the worlds of popular culture and biological science, examining such topics as the understanding of global pandemics, the effect of using epidemiological models to understand human prehistory, and the increasing popularity of predators.

Lambert Schneider is a classical archaeologist and has recently retired as a professor at Hamburg University; in 1996, he was a scholar at the J. P. Getty Research Institute in Santa Monica, California. His main research fields include theory and methodology in archaeology, gender studies in Greek culture and its modern applications, Thracian and Scythian imagery, Greek sculpture, late Roman imagery, and re-use of ancient Greek cultural forms in modern societies. His publications include *Die Akropolis von Athen* [with Ch. Höcker) (Darmstadt 2001) and *Die ungezähmte Frau. Weibliche Antibilder in Mythos und Bildkunst der Griechen* [with M. Seifert] (Stuttgart 2010).

Simona Valeriani has a background in architecture, the history of architecture, and building archaeology, earning her PhD in Berlin (2006); she joined the "Facts" project in 2005. Currently, she is analysing how scientific and technical knowledge were accumulated and transmitted in late medieval and early modern Europe and how the two spheres interacted as part of the LSE project "Useful and Reliable Knowledge in Global Histories of Material Progress in the East and the West" (URKEW, financed by the European Research Council). Her publications include the book *Kirchendächer in Rom. Zimmermannskunst und Kirchenbau von der Spätantike bis zur Barockzeit* (2006).

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(*Graduate Journal of Social Science* 2009). He is currently working on the role of measurement systems in the foundations of markets, using the case study of international grain markets in the nineteenth century.

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Editors' Preface

Why write about facts? Facts are everywhere. They litter the utterances of public life as much as the private conversations of individuals. They frequent the humanities and the sciences in equal measure. Facts, understood in their everyday sense as bits of knowledge, make their appearances across the terrains of knowledge. As such, facts are not only expressed in verbal claims and counter-claims, but in all sorts of things and in all sorts of ways: in the drawings of insects, in the maps of our globe, in the beams of buildings, or in the shards of our forebears. Facts may be tiny, and on their own seem quite trivial (as a piece of genetic information about a plant), or important and earth-saving (as our temperature measures of climate change). And, of course, as we all know, individual facts may be strong and secure bits of knowledge, or sometimes hard to distinguish from fictions, or shaky to the point of falsehood. But their very ubiquity, in conjunction with the many forms they take and the different qualities they hold, tells us not only why it is difficult to form general but sensible answers in response to seemingly simple questions about facts, but why it is important to do so.

We may take this notion of facts – as pieces of knowledge – for granted. But it is equally pertinent for this book that facts are also recognised to be *separable* bits of knowledge that can be abstracted from their production context and shared with others. And because they are such independent pieces of knowledge, facts have the possibility to travel, and indeed some circulate freely, far and wide. So, how do such bits of knowledge – whatever their appearance and size – circulate while maintaining their integrity as facts? For, of course, it matters that travelling facts do hold their knowledge: They are not just an essential category of the way we talk in modern times, but provide one of the forms of knowledge upon which we act. This is one way we explore our question: "How *well* do facts travel?" *Well enough* to act upon them: Facts need to retain their integrity if we are to act upon them safely. Yet our recognising that facts have travelled well depends on us noticing how certain facts get used again and again, by other communities or for other purposes. This provides our second insight into the problem of understanding *travelling well*. Facts travel well if their travels prove fruitful. So these two senses of travelling well, with integrity and fruitfully, frame our answers to the question "How well do facts travel?"

The essays here do not adopt any *one* theoretical or disciplinary approach. We are not committed *as a group* to any particular sociological theory about knowledge transfer, nor to the establishment of a philosophical test of the truth or falsity of facts, nor to the provision of an epistemic history of facts as a category. The essays here are written by those with disciplinary backgrounds in the natural and social sciences and the humanities (and many of our authors have training in more than one academic discipline) and they take as subjects cases from the sciences, the humanities, and the arts. But like a number of other recent volumes that cross this traditional science–arts divide – such as Lorraine Daston's *Things That Talk* (2004) and Angela Creager et al.'s *Science Without Laws* (2007) – we take a relaxed, open view about how to study knowledge, one that coalesces around a particular object of study, facts, unbounded by a disciplinary framework. So, the reader will find here a variety of resources used for thinking about travelling facts offered from several disciplinary approaches and in a number of different fields and contexts. But we do share common grounds: The essays in this book address a common question, share an understanding of what facts are and a framework for answering questions about what it means for facts to travel well. They all address directly the lives of facts, and only indirectly other aspects of facts, such as their production, their context, their value, and the communities they pass through.

The answers to our question "How well do facts travel?" are given individually and differently by each author, and each writes from their own theoretical focus. But although each author has followed their own stories, they have all contributed to the shared analysis that shapes our answers. Each essay answers our question in a different way, ways that succeed in adding twists to our agenda, or in shaking our framework to offer us new perspectives, or in creatively turning the way we understand the problem of exploring how well facts can travel. The presence – within each essay – of these multiple contributions made the imposition of part headings in the volume somewhat arbitrary, and the essays cannot be as neatly docketed as our headings suggest. Rather, these headings are indicative of something special that we have found in each of those essays. But as the index makes clear, the elements of our shared thinking about what it means to travel well are either centrally found in each essay or else have crept into the subplots or side analyses in informative ways. The book itself has been strongly

supported by our editor, Scott Parris, and our publishers, Cambridge University Press, and we thank them and their readers and referees for their penetrating comments on the book proposal and manuscript.

As a research programme, "How Well Do Facts Travel?" grew into one of the most enjoyable and one of the most intellectually exciting experiences of our careers. Between late 2004 and the end of 2009, we were able to work – not all at once, but over the period – with a group of young researchers who became close colleagues: post-docs Simona Valeriani, Edmund Ramsden, Erika Mansnerus, Sabina Leonelli, and Jon Adams; and PhD students Aashish Velkar, Ashley Millar, Julia Mensink, and Albane Forestier. These were all wonderful to work with, but we might just mention the two longest-serving post-docs: Simona Valeriani helped in organising the project and getting this book into production, and Jon Adams created our public face of posters, Web pages, and logo. We would also like to thank Aashish Velkar and Eric Golson for their sterling work in preparing the index for this volume, and Rajashri Ravindranathan for her patience in chaperoning our book through the production process. We were delighted when the project was recognised at the Times Higher Education Awards as being amongst the best "research projects of the year" in 2008. An account of the project, giving its history, descriptions of workshops and a British Academy congress, the development of its logo, and its working papers can be found at: http://www2.lse.ac.uk/economicHistory/Research/facts/Home.aspx.

During those years we enticed a small number of senior visitors to spend time with the project group at LSE and to contribute essays to this volume. We also persuaded a much larger number of participants to attend our seven workshops, and would particularly like to thank Marcel Boumans and Harro Maas, who loyally took part in most of them and contributed some wonderful commentaries on these occasions. We gained huge insight from working with all these visitors: academics, museum curators, and professionals from many fields. We had the good fortune to be strongly supported by our Department of Economic History, and by a particular group of colleagues therein: especially Patrick Wallis, who was as closely engaged with the project as any of us; Tracy Keefe, who calmly and efficiently administered the project; and Max Schulze, the late Stephan (Larry) Epstein, Paul Johnson, and Rick Steckel, who helped us get the project off the ground. We thank the British Academy, who gave us and our sister project on "The Nature of Evidence" at University College London a public space to report the project in 2007. Last, but no means least, we were generously supported by Sir Richard Brook and Sir Geoffrey Allen at the Leverhulme Trust, which (in conjunction with the ESRC) funded the project (grant F/07004/Z).

Their commitment to these "blue skies" programmes is truly admirable. We thank them all, and most heartily.

We hope that the project has proved as exciting to our many visitors as it has been to us, and that it will equally attract the readers of this volume to recognise the challenge posed in our research question and to share our own engagement with the nature of facts. We appreciate the ambition of the Leverhulme Trust, who want their programme grants to "make a difference." At the least, we are confident that the project was instrumental in turning some smart young researchers into a cadre of really good ones. But our broader ambition might be described thus: that all those who make contact with our research – via the project or this volume – will, as a result, come to think differently about those ordinary, but most important, bits of knowledge we know as "facts."

Peter Howlett and Mary S. Morgan, 2010

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