Probability and Evidence

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CAMBRIDGE UNIVERSITY PRESS

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.

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www.cambridge.org
Information on this title: www.cambridge.org/9781316507018

First published 1982
First paperback edition 2011
Cambridge Philosophy Classics edition 2016

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

Library of Congress Cataloging-in-Publication data
Names: Horwich, Paul, author.
Title: Probability and evidence / Paul Horwich.
Description: New York : Cambridge University Press, 2016. | Originally published: New York : Cambridge University Press, 1982. | Includes bibliographical references and index.
Identifiers: LCCN 2015049717| ISBN 9781107142107 (Hardback : alk. paper) | ISBN 9781316507018 (Paperback : alk. paper)
Subjects: LCSH: Science–Philosophy. | Probabilities. | Evidence.
Classification: LCC Q175 .H797 2016 | DDC 501–dc23 LC record available at https://lccn.loc.gov/2015049717

ISBN 978-1-107-14210-7 Hardback
ISBN 978-1-316-50701-8 Paperback

To my mother and father

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Preface to this edition

COLIN HOWSON

While it is difficult to say in general terms what makes a book a classic, it is often not difficult to decide that some given book is one, and to my mind there is no doubt that this book is. Despite the author's disclaimer in his Introduction that he is following a Wittgensteinian strategy in eschewing any grand philosophical scheme, there is one in this book: the Bayesian theory, which Paul Horwich regards as illuminating an entire spectrum of philosophical problems associated with that peculiarly scientific subdomain of epistemology, the so-called scientific method. And illuminate it it certainly does in Horwich's book, a masterpiece of simplicity and elegance that belies the often-challenging nature of the material. Here is one characteristic of a classic that we can tick without further ado.

Probability and Evidence was published at a time when it was becoming increasingly fashionable to deny that the methods of science, allegedly heavily constrained by the socio-economic-cultural milieu in which scientists operate, are in any way *sui generis*, or uniquely meriting a patent of objectivity. Curiously enough, the Bayesian framework for evaluating theories and evidence also subscribes to the view that there is nothing specifically to do with the sciences in the inferential methods it endorses. On the other hand it cedes nothing in the way of objectivity, being nothing less than a *logic* of uncertain inference, an account of how factual hypotheses *in general* are evaluated against evidence, whatever the specific context. This combination of universality and logical rigour was repeatedly stressed by the great twentieth-century Italian Bayesian, Bruno De Finetti, to whom so much of the modern development of the theory is due. But despite its generality the Bayesian theory was developed, by De Finetti and others, primarily to illuminate the procedures of *scientific* inference. As indeed it does, and in this book Horwich shows, with his customary clarity, how it can explain such perennial features of scientific method as why, for example, simpler theories are typically preferred to more complex ones, why diverse evidence is valued more highly than evidence from the same source, why genuinely predictive theories are esteemed more highly than those adjusted to the data, and so on.

Probability and Evidence was itself a pioneering work: it brought what was formerly a sophisticated mathematical theory largely confined to research journals down, if not to the masses, at least to within the reach of a general philosophical readership, or for that matter anyone prepared to do a little work with some relatively simple formulas. Not only is all this very deftly done but – and here is another characteristic of the true classic – several of Horwich's own often highly novel solutions to the problems and paradoxes that figure in the philosophy of science literature became a prominent focus of that literature and – final confirmation of classic status – fixtures of the textbook literature. If someone you know tells you that the notorious raven paradox has been solved, it will most probably be Horwich's solution that they will have in mind.

Preface

My purpose in writing this essay was to exhibit a unified approach to philosophy of science, based on the concept of subjective probability. I hope to have contributed to the subject, first, by offering new treatments of several problems (for example the raven paradox, the nature of surprising data, and the supposed special evidential value of prediction over and above the accommodation of experimental results); and, second, by providing a more complete probabilistic account of scientific methods and assumptions than has been given before. In the interest of autonomy, I have included a chapter on probability which surveys the ideas that will be needed later, keeping technicalities to a minimum. Unfortunately, there was no room for a proper consideration of many alternative points of view; and a much longer treatise would be desirable in which the competition is adequately presented and criticised. Nevertheless, I do make something of a case for the probabilistic approach: it yields satisfying solutions to a wide range of problems in the philosophy of science.

This book is aimed at professional philosophers, but not exclusively; for I have covered a lot of ground, trying to explain everything from scratch, and so I hope that students will find here a useful introduction to the subject. Let no one be intimidated by the occasional intrusion of symbols. The formalism is intended to promote clarity; it is not difficult to master; and if worse comes to worst, those few sections may be skimmed without losing the general drift.

I would like to acknowledge the help and pleasure I have received from Hempel's *Philosophy of Natural Science*, from the work of Hacking and Kyburg on probability, and from Janina Hosiasson-Lindenbaum's brilliant early essay, 'On Confirmation' Also, I am very grateful to Frank Jackson, Thomas Kuhn and Dan Osherson who read an early draft and contributed many helpful suggestions. And I would especially like to thank my friends, Ned Block and Josh Cohen, for their excellent advice and steady encouragement.