Inquiry and Understanding

Also by Jennifer Trusted:

The Logic of Scientific Inference (Macmillan, 1979)

An Introduction to the Philosophy of Knowledge (Macmillan, 1981)

Free Will and Responsibility (Oxford University Press, 1984)

Moral Principles and Social Values (Routledge and Kegan Paul, 1987)

Inquiry and Understanding

An Introduction to Explanation in The Physical and Human Sciences

Jennifer Trusted

M
MACMILLAN
EDUCATION

©Jennifer Trusted 1987

All rights reserved. No reproduction, copy or transmission of this publication may be made without written permission.

No paragraph of this publication may be reproduced, copied or transmitted save with written permission or in accordance with the provisions of the Copyright Act 1956 (as amended).

Any person who does any unauthorised act in relation to this publication may be liable to criminal prosecution and civil claims for damages.

First published 1987

Published by
MACMILLAN EDUCATION LTD
Houndmills, Basingstoke, Hampshire RG21 2XS
and London
Companies and representatives
throughout the world

Typeset by Wessex Typesetters
(Division of The Eastern Press Ltd)
Frome, Somerset

British Library Cataloguing in Publication Data
Trusted, Jennifer
Explanation.

1. Inquiry and understanding.

An introduction to explanation
in the physical and human sciences.

I. Title

121'.4

BD161

ISBN 978-0-333-43959-3 ISBN 978-1-349-18823-9 (eBook)
DOI 10.1007/978-1-349-18823-9

Contents

<i>Acknowledgements</i>	vi
<i>Preface</i>	vii
1 Empirical Explanations	1
2 Facts and Concepts	9
3 Facts and Theories	27
4 Facts and Language	37
5 Technical Terms	44
6 The D-N Model and the Concept of Law	52
7 Aspects of Explanation: How, Why and Wherefore	62
8 Laws and Quasi-laws	68
9 Spurious Explanations	73
10 Teleological Explanations	85
11 The D-N Model and the Human Sciences	109
12 Inadequacies of the D-N Model	123
13 The Operation of <i>Verstehen</i>	130
14 Values and Explanation	142
15 The Ultimate Explanation?	150
<i>Glossary</i>	153
<i>Notes</i>	155
<i>Bibliography</i>	165
<i>Index</i>	167

Acknowledgements

I should like to thank Professor D. J. O'Connor for his advice and encouragement in the writing of this book; I should also like to thank Professor J. Harrison for being kind enough to read the manuscript and for some invaluable suggestions for clearer exposition. My thanks also go to Mr Martin Davies for his helpful guidance in relation to presentation and style. Any mistakes in the text are, of course, my own. The author and publishers wish to thank the *Daily Mirror* for permission to reproduce their horoscope feature of 25 July 1986.

JENNIFER TRUSTED
Exeter, 1986

Preface

This account of empirical explanation is intended to serve as an introduction to philosophy, especially for those interested in the philosophy of the physical and human sciences. I hope that it will also be useful to scientists themselves. No prior knowledge is assumed and the text is written for the general reader as well as for students.

A realist view of empirical theories is adopted, that is true empirical theories are held to describe an objective reality, though any claim to knowledge and any explanation are, and must be, subject to the limitations of the human condition. Our knowledge of the world is taken to be objective knowledge in the sense that evidence provided by our observations, and the interpretations of that evidence provided by our theories, is accepted by those who are capable of assessing such evidence and such interpretations. We know that we may be mistaken, but we can admit this without resort to scepticism; at the last we must be content to rely on our own judgement, including what we judge to be inter-subjective agreement, for we have nothing else to go by. This is not to undermine the notion of objective truth but to point out that we can never be *certain* that we have attained truth. Hence it is not denied that probably all our currently accepted empirical theories are likely to be modified and that some will be rejected as being false, or highly misleading. Nevertheless it is argued that we can hope to make progress towards the truth as we human beings can understand it.

In a simple introductory account it seems best to assume (by implication) a correspondence theory of truth and to treat empirical propositions and statements as being either true or false. Arguments for anti-realism (as presented by Dummett) are ignored, as is the problem of the connection of meaning with truth conditions and the case for intuitionist as opposed to two-valued logic. A detailed

account of the interdependence of our notions of truth, meaning and use, and their relation to the metaphysical assumptions we make about the world is beyond the scope of this book.

The first chapter is a general introduction and presents a common-sense account of the nature of empirical explanations, distinguishing them from logical and metaphysical explanations. It is suggested that the concept of explanation is logically connected to the concepts of knowledge and understanding and that explanations provide descriptions, suggest causal links and place the *explicandum* in a broader scheme of events. There is also preliminary discussion of the role of teleological explanations and of the operation of *Verstehen*.

Chapters 2 to 4 are intended to provide a philosophical foundation for the arguments developed in later chapters and there is constant reference back to these early chapters. In them it is argued that facts, concepts and theories are inter-related and that the meaning and significance of words and propositions is dependent on concepts and theories, so that language changes as concepts and theories change. The treatment is simple, for any deeper approach would require background knowledge which neither the student nor the general reader could be expected to possess. It is hoped that though the simple account offered does ignore many important philosophical problems, it will not mislead but will provide a sound basis for further study and will not confuse the beginner. Some of the simplified ideas will need to be modified later just as in the teaching of physical science the student learns of simple laws and theories that also have to be modified later.

From the first chapter there is implicit acceptance of the importance of laws for explanations; laws are taken to be established regularities and the well-known difficulties associated with the status and reliability of laws are treated later. At the start it is assumed that the reader is like Hume out of his study, and common-sense reliance on inductive inference is assumed. It is in Chapter 6 that the problem of induction is introduced and briefly discussed, along with the difficulties inherent in distinguishing laws from contingent true generalisations; in Chapter 8 the notion of quasi-laws is developed. It is not pretended that these discussions are deep; they are intended to alert the reader to interests that will arise if she perseveres with philosophy.

It is argued that the D-N model of explanation is a model for the causal aspect of explanation as offered by common sense and by

science. Physical science (rather than ‘natural science’) is contrasted with human science (the latter term embraces ‘social science’) to emphasise that explanation in the former appeals solely to physical events whereas explanation in the latter can involve appeal to intentions and beliefs (see also note 10, Chapter 1). It is admitted that there is more difficulty in applying the D-N model in human science explanations but it is held that those who have criticised the model have not given sufficient weight to the necessity to appeal to some established regularity; even a weak law is better than no law at all. It is argued that teleological explanations, in so far as they are treated as causal explanations can also be accommodated to the D-N model.

However, it is also contended that the D-N model is inadequate as a model for full explanation in both physical and human science because it ignores the conceptual aspect of explanation and allows no place for changes in theories, concepts and language. It is pointed out that the inadequacy is revealed more clearly in the human sciences since in those fields we are liable to have complex and fluid concepts that are deeply influenced by values – explanations and theories about ourselves are inescapably value-laden and even the operation of *Verstehen*, that encourages us to understand the viewpoint (and values) of others, cannot entirely eliminate subjective assessment and subjective explanation.

The final chapter summarises the main arguments of the text and reviews the possibility of an ultimate explanation, in the Baconian sense. It is suggested that not only is it highly unlikely that there is an ultimate explanation, or an ultimate set of explanations, but that were it (or they) known there would no longer be a place for the exercise of our human aspiration to discover more about ourselves and our world.