

# **PHILOSOPHY AND SCIENTIFIC REALISM**

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J. J. C. Smart

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*By*

J. J. C. SMART

Volume 29

 **Routledge**  
Taylor & Francis Group  
LONDON AND NEW YORK

First published in 1963

This edition first published in 2009 by  
Routledge

2 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN

Simultaneously published in the USA and Canada  
by Routledge

270 Madison Avenue, New York, NY 10016

*Routledge is an imprint of the Taylor & Francis Group, an informa  
business*

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*British Library Cataloguing in Publication Data*

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

*Library of Congress Cataloging in Publication Data*

A catalog record for this book has been requested

ISBN 10: 0-415-42029-6 (Set)

ISBN 10: 0-415-47497-3 (Volume 29)

ISBN 13: 978-0-415-42029-7 (Set)

ISBN 13: 978-0-415-47497-9 (Volume 29)

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LONDON

ROUTLEDGE & KEGAN PAUL

NEW YORK : THE HUMANITIES PRESS

*First published 1963  
by Routledge & Kegan Paul Ltd.  
Broadway House, 68-74 Carter Lane  
London, E.C.4*

*Printed in Great Britain  
by Richard Clay and Company, Ltd.  
Bungay, Suffolk*

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## PREFACE

IN recent years I have been moving away from a roughly neo-Wittgensteinian conception of philosophy towards a more metaphysical one, according to which philosophy is in a much more intimate relation to the sciences. Philosophy, it now seems to me, has to do not only with unravelling conceptual muddles but also with the tentative adumbration of a world view. I have tried to do something of this latter sort in the present book. Though this book is addressed primarily to professional philosophers and students of philosophy, I hope that it may appeal to readers with scientific interests who have not had a specialised philosophical education.

Some parts of this book are based on articles which I have had published in various philosophical journals. However, much of this material has been rewritten. I am grateful to the editors of journals who have allowed me to use this material: a list of acknowledgments will be found on another page.

I wish to thank Dr D. M. Armstrong, Mr Gregory O'Hair, and especially Professor A. G. N. Flew, who have read an earlier draft of this book and who have helped me with their advice and encouragement. In revising this draft I have also been helped by the assistant editor of the International Library of Philosophy and Scientific Method, Mr Bernard Williams. I have had helpful discussions on parts of the book with my colleagues in Adelaide, Dr C. B. Martin (who incidentally suggested the title) and Mr M. C. Bradley. Though we disagree greatly on many issues, for nearly ten years I have been more influenced by Dr Martin's subtle profundities than will be apparent to many readers of this book: in particular, he has done much to wean me from a too positivistic and verificationist way of thinking. I am grateful to Mr and Mrs S. E. Hughes, who have helped with the proof reading, and to Mrs Bartesaghi, who typed the manuscript.

J.J.C.S.

*University of Adelaide*  
*South Australia*  
*May 1963*

## ACKNOWLEDGEMENTS

SEVERAL pages of Chapter II are taken, with slight changes, from my article 'The Reality of Theoretical Entities', *Australasian Journal of Philosophy*, Vol. 34, 1956, pp. 1-12. The first part of Chapter III consists mainly of my article 'Can Biology be an Exact Science?' *Synthese*, Vol. 11, 1959, pp. 359-68. Much of Chapter IV consists, with some interpolations, of my article 'Colours', *Philosophy*, Vol. 36, 1961, pp. 128-42. For part of Chapter V (as well as a page or so of Chapter I) I have made use of my article 'Sensations and Brain Processes', *Philosophical Review*, Vol. 68, 1959, pp. 141-56. Chapter V also makes use of discussion notes, 'Further Remarks on Sensations and Brain Processes', *Philosophical Review*, Vol. 70, 1961, pp. 406-7, 'Sensations and Brain Processes: A Rejoinder to Dr Pitcher and Mr Joske,' *Australasian Journal of Philosophy*, Vol. 38, 1960, pp. 252-4, and 'Brain Processes and Incorrigeability', *Australasian Journal of Philosophy*, Vol. 40, 1962, pp. 68-70. However this chapter has been considerably rewritten. Two paragraphs of Chapter VI are based on part of my article 'Ryle on Mechanism and Psychology', *Philosophical Quarterly*, Vol. 9, 1959, pp. 349-55, and part of this chapter is taken from part of my article 'Gödel's Theorem, Church's Theorem and Mechanism', *Synthese*, Vol. 13, 1961, pp. 105-10. A short passage from Chapter VII is closely related to part of my article 'The Temporal Asymmetry of the World', *Analysis*, Vol. 14, 1953-4, pp. 79-83. I should like to thank the editors of these journals for their permission to make use of this material. I wish also to thank the University of Minnesota Press for allowing me to include in Chapter I and in Chapter III short passages which are closely related to two or three pages of my essay 'Philosophy and Scientific Plausibility', in *Problems of Philosophy, Essays in Honor of Herbert Feigl*, Minneapolis (forthcoming).

# I

## THE PROVINCE OF PHILOSOPHY

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### PHILOSOPHY AND WORLD VIEW

THIS book is meant as an essay in synthetic philosophy, as the adumbration of a coherent and scientifically plausible world view. A good many philosophers would nowadays question the legitimacy of such an endeavour. It will therefore be as well if I say a few words about the nature of philosophy as I conceive it. No one answer can be given to the question 'What is philosophy?' since the words 'philosophy' and 'philosopher' have been used in many ways. Some people, for example, think of philosophy as offering the consolations of a religion, and of the philosopher as a man who receives with equanimity the buffetings of life. This has very little to do with the way in which academic people, including myself, use the word 'philosophy'. I do not feel particularly unqualified to be an academic philosopher because I am not 'philosophical' when I am bowled out first ball at cricket. As I propose to use the word 'philosophy' it will stand primarily for an attempt to think clearly and comprehensively about: (*a*) the nature of the universe, and (*b*) the principles of conduct. In short, philosophy is primarily concerned with what there is in the world and with what we ought to do about it. Notice that I have said both 'to think clearly' and 'to think comprehensively'. The former expression ties up with the prevailing conception of philosophy as linguistic or conceptual analysis, and the latter ties up with another common conception of philosophy as the rational

## THE PROVINCE OF PHILOSOPHY

reconstruction of language so as to provide a medium for the expression of total science.\*

Thus, a man might analyse biology in a certain way. He might argue, as I shall do, that living organisms, including human beings, are simply very complicated physico-chemical mechanisms. This man might also analyse physics as the ordering and predicting of sense experiences. For the sake of argument let us concede that such a man might be thinking quite clearly in each field. But though he might be thinking clearly, he would not be thinking *comprehensively*. As biologist he would be thinking of man as a mechanism, as very much a part of nature, a macroscopic object interacting with its environment. As physicist, however, he would be thinking of this great world of nature as just a matter of the actual and possible experiences of sentient beings, and so, in a sense, he would be putting nature inside man. † To think comprehensively he would have to discover a way of thought which enabled him to think both as a biologist and as a physicist. Presumably a comprehensive way of thought would be one which brought all intellectual disciplines into a harmonious relationship with one another. It may turn out that there are some realms of discourse, such as theology, which cannot be brought into a harmonious relationship with the various sciences. Any attempt to do so may result in violence to logic or to scientific facts, or may involve arbitrariness and implausibility. (Consider, for example, the implausibility of a theory which asserts that the mechanistic account of evolution by natural selection and mutation is broadly true, but that there is a special discontinuity in the case of man, to whom was super-added an immortal soul.) If this is so, such anomalous branches of discourse will have to be rejected and will not form part of the reconstruction of our total conceptual scheme.

So much, for the moment, about the 'nature of the universe' or 'world view' part of philosophy. Let us now briefly consider the second part of philosophy, which is concerned with the principles of conduct. We shall not be much concerned in this book with

\* In thinking of philosophy as rational reconstruction of language I have been very much influenced by Hilary Putnam and by W. V. Quine. See, for example, Quine's *Word and Object* (Technology Press of M.I.T. and Harvard University Press, 1960).

† On this point see Chapter II. It is interesting that theoretical physicists, when they venture into philosophy, commonly tend to be phenomenologists, and biologists tend to be materialists.

#### PHILOSOPHY AND THE ELIMINATION OF NONSENSE

this part of philosophy, but in the final chapter I shall try to state some of the implications, and some of the non-implications, of my general world view for ethics. As we shall see, and as has been generally recognised in modern philosophy, it is not possible to deduce propositions about what ought to be done purely from propositions about what is the case. It follows that the principles of conduct are by no means unambiguously determined by our general philosophy. Nevertheless, in their laudable objection to those who would deduce ethics from the nature of the world (and in particular to some of those biologists who would base ethics on the theory of evolution and the like) philosophers have tended to obscure the fact that our general philosophical and scientific beliefs may strongly influence our ethical principles. For example, if one of our principles of conduct were that we should do what is commanded by a personal God and if our world view were one which left no place for such a God, then this principle of conduct would have to be given up, or at least we should have to find some other reason for adhering to it. In this book, which will be naturalistic in temper, I do not wish to concern myself with the general question of the legitimacy or illegitimacy of theology. The example of theology was brought up simply to show in a vivid way that metaphysics can be relevant to ethics. We must certainly not jump from the impossibility of deducing 'ought' solely from 'is' to the untenable position that our general philosophical and scientific views have no bearing on our ethical ones.

#### PHILOSOPHY AND THE ELIMINATION OF NONSENSE

I have been suggesting a conception of philosophy as the attempt to acquire a synoptic view of the world. On this account of philosophy it shares the tentative character of the sciences. We must never think that we have acquired, even in outline, the final truth, for science inevitably provides surprises for us, and we may have to make important revisions of even our most general notions. We may hope, however, that our synoptic account will be nearer to the final truth than is that of common sense. Now in recent years it has been argued in some quarters that in philosophy we are not concerned, as scientists are, with the distinction between truth and falsity, but with that between sense and nonsense. As philosophers, according to this conception, it is not our

## THE PROVINCE OF PHILOSOPHY

business to say what the world is in fact like: we must leave this to scientists and historians. What we can do, and what we are by our training peculiarly fitted to do, is to help to ensure that we, together with scientists and historians, at least utter falsehoods: that we and they do not fall into nonsense which has not even achieved the distinction of an intelligible falsehood. Let me illustrate the notion of nonsense by means of an example based on *Alice in Wonderland*.<sup>\*</sup> Suppose that a man came and said that he had seen a miaowing and blinking cat's head which was unattached to a body. I should be disposed in this case to disbelieve the man, and to say that what he told me was *false*. I should feel that I *understood* him: that I knew what it would be like for such an event as he reported to occur, but that I did not believe that any such event ever had or would occur. His report would contradict various secure beliefs that I possessed, particularly in the field of animal physiology. Now let us suppose that the man had reported not that he had seen a cat's head by itself but that he had seen simply a grin by itself. Not even a grinning mouth unattached to a head, but simply a grin all on its own. In this case I should not know what was meant at all. I should not be disposed to say that I understood what the man said, even though I disbelieved in the truth of his report. I should say, rather, that what he said was nonsense, neither true nor false, and so I could not even disbelieve him.

Now it is indubitable that there are sentences which have appeared to be meaningful and which nevertheless have turned out to be nonsense. I shall mention one such sentence in a moment. And so even though the remarks of traditional philosophers (say, about the famous trio of topics, God, Freedom, and Immortality) may not be obvious nonsense, like the report of the catless grin, they may be nonsense all the same.

Here is a sentence, couched entirely in the respectable terminology of pure mathematics, which at first sight may appear to some readers (assuming that they have not encountered it before) to be perfectly meaningful, though perhaps rather dry and abstract. It was first concocted by Bertrand Russell. (Russell's paradox.) The sentence is: 'The class of all classes not members of themselves is a member of itself.' There appear to be plenty of classes of objects which are not members of themselves. The class of criminals is not

<sup>\*</sup> Lewis Carroll, *Alice in Wonderland* (Everyman edition, J. M. Dent, London, 1952), p. 56.

a criminal (the police do not have to seek the *class of criminals* after they have arrested all criminals), and the class of football teams in the league is not a further football team. Most classes therefore appear not to be members of themselves. But some classes do appear to be members of themselves: certainly the class of classes does. For is not the class of classes a class? It would therefore seem to be perfectly intelligible to pose the question of whether the class of all classes not members of themselves is or is not one of those classes which are members of themselves. Unfortunately, this question admits neither the answer 'yes' nor the answer 'no'. For if the class of all classes not members of themselves *is* a member of itself, then it follows that it is one of those classes which are *not* members of themselves. And if it is not a member of itself, then it *is* a member of itself. Either way we get a contradiction. It follows that we can neither say that the sentence 'the class of all classes not members of themselves is a member of itself' expresses a truth, nor can we say that it expresses a falsehood. We are forced to conclude that it is meaningless.\*

The above paradox is particularly important and instructive, because it shows how unsuspected possibilities of nonsense can break out even in the rigorous and austere terminology of mathematics. For those readers who may not find abstractions about classes to their taste I shall mention a similar, though less important paradox, which may be even more succinctly stated. Consider the sentence 'This sentence is false'. The sentence is about itself. Is it true or false? It can be neither, because if it is true it is false and if it is false it is true. It is important to note that the above paradoxical sentences are not mere contradictions. You can assert the negation of a contradiction. That is, a contradiction is just plain false. ' $2 + 2 = 5$ ' is a contradiction, and so ' $2 + 2 \neq 5$ ' is a truth. Contradictions have their uses, for they occur in proofs by *reductio ad absurdum*. If you can deduce ' $2 + 2 = 5$ ' you

\* I here neglect the possibility of other ways of dealing with Russell's paradox, such as Zermelo's. The cautious reader should consult the essay 'The Demarcation between Science and Metaphysics' (especially pp. 263-73) in K. R. Popper's *Conjectures and Refutations* (Routledge and Kegan Paul, London, 1963), which came into my hands while this book was in the press. Popper's argument suggests that we should draw a less sharp line between nonsense and falsehood than I have done. This would strengthen the main argument of this chapter, which is that philosophy is concerned with world view.

can normally deduce that the negation of one or other of the premisses is true. I have said 'normally' here, because it is important to use *reductio ad absurdum* methods only when you are reasonably sure of the meaningfulness of the sentence you are trying to prove. If the sentence you are trying to prove is meaningless it may be like one of the paradoxical sentences above and you may be able to deduce a contradiction both from it *and* from its negation. In which case the deduction of a contradiction from its negation does not ensure its truth. This consideration may be of interest to some readers, in that it may throw light on the fact that certain mathematicians, the so-called 'intuitionists', Brouwer and his school, reject proof by *reductio ad absurdum* in circumstances in which classical mathematicians do not. It is, of course, the case that there are sentences which classical mathematicians regard as meaningful and which the intuitionists hold to be meaningless.

The sort of possibility of nonsense to which I have been drawing attention in the last few paragraphs is a subtle and insidious one. Nonsense of a sort has always been recognised: consider 'I married a prime number' and 'Virtue is triangular'. It is an insight of the last fifty years (though foreshadowed by the philosophically subtle humour of Lewis Carroll) that there can be important and non-obvious possibilities of nonsense. This insight was generalised by Wittgenstein and by those much influenced by him into a complete philosophy of philosophy.

It is clear that some technique for recognising non-obvious nonsense is highly desirable, and I should agree that the development and application of such a technique is at least part of the task of philosophy. How does this connect up with my conception of philosophy as the development of a synoptic outlook? Can the elimination of nonsense change our world view? At first sight the answer to this is in the negative. If the nonsense really is nonsense it cannot form part of a world view, even a false one. So it looks as though elimination of nonsense removes dead wood but does not affect the living branches of our knowledge. This answer is, however, too hasty. It may well be that by using nonsensical premisses, in addition to a set  $A$  of meaningful ones, we may be able to deduce a set  $B$  of meaningful sentences which are not deducible from  $A$  alone. I shall show how to deduce the false but meaningful sentence 'The moon is made of green cheese' from the

nonsensical sentence 'This sentence is false'. Let us represent the sentence 'This sentence is false' by the symbol ' $S$ ' for short.

From 'This sentence is false' we can deduce 'This sentence is not false'. That is, from  $S$  we can deduce not- $S$ . However, from  $S$  we can deduce ' $S$  or the moon is made of green cheese'. But not- $S$  (which we have already deduced) together with ' $S$  or the moon is made of green cheese' enables us to deduce 'The moon is made of green cheese'.

Thus given the nonsense 'This sentence is false' we can deduce that the moon is made of green cheese. We have been able to do this because the nonsense in question issues in a contradiction, and from a contradiction we can, by the method of the last paragraph, deduce any sentence whatever. It is not obvious, however, that all nonsensical sentences issue in a contradiction. Some seem so far off the rails of meaningful discourse that it is not even possible to use them to demonstrate their own senselessness. Thus, it is not obvious that 'I married a prime number' or 'A bodiless grin appeared in the room' issue explicitly in contradiction. Nevertheless, my derivation of the proposition that the moon is made of green cheese should make it plausible that a philosopher should be able to deduce false conclusions from true premisses if he makes his deduction through unrecognised nonsense. The deduction would, of course, be an incorrect one, but it would be incorrect in a very unobvious and subtle way. The detection of its incorrectness would depend on the detection of hidden nonsense. A good example of this sort of thing, in the history of philosophy, suggested to me by D. M. Armstrong, is perhaps Aristotle's deduction of the false, though meaningful, proposition that the heavenly bodies are of a different substance from that of the earth. His deduction is by way of the nonsense that the heavenly bodies obey laws of the same nature as the laws of logic, *i.e.* laws of a sort of logical hardness.

It may be thought that my example of a deduction that the moon is made of green cheese proves too much. For if it proves anything it proves that from 'This sentence is false' (or from a simple non-paradoxical contradiction such as ' $2 + 2 = 5$ ') we could deduce anything whatever. But philosophers, however metaphysical they may be, are not satisfied to assert any proposition whatever. There are some propositions which they wish to assert