

Cambridge University Press

978-0-521-10734-1 - Ideas, Qualities and Corpuscles: Locke and Boyle on the External World

Peter Alexander

Excerpt

[More information](#)

INTRODUCTION

This book has been written in the belief that John Locke's *An Essay Concerning Human Understanding* has been sadly misinterpreted ever since it was published in 1690. It was something of a best-seller in the late seventeenth and early eighteenth centuries¹ and immediately gave rise to controversy, in which Locke took part, on most of his fundamental views. Attitudes to it in the present century, at least until about 1960, have largely consisted of a mixture of apathy and derision; it was admitted that Locke had dealt with many problems that interest modern philosophers but it was widely thought that his successors, especially Berkeley and Hume, had developed his 'empiricist' approach in such a way as to render it clearer, more plausible and more consistent than anything he had achieved. It was quite usual for students to be told that Locke's *Essay* was long, tedious and confused and that as Berkeley and Hume had discussed his most interesting views more shortly and more consistently a careful reading of Berkeley and Hume would afford a sufficient acquaintance with those views of Locke that were important. His own views were regarded as providing useful objects for philosophical criticism within the powers of the beginning student.

For the really assiduous student who wished to read Locke, there were, and still are, numerous abridged editions which became the natural source of reference for the student who was good enough to go on to teach philosophy. Even these students, however, had been so corrupted by the idea that Berkeley and Hume had got things more nearly right and by the use of abridgements that they tended to read Locke with a ready-made interpretation in their minds. So the conventional view of his philosophy was perpetuated.

A factor that contributed to this, in our century, was the relative unimportance attached to the history of philosophy among Anglo-American philosophers during the immediate pre- and post-Second World War decades. This had the consequence that many philosophers saw the works of the great philosophers of the past, if they took any notice of them at all, not as subjects for serious, detailed study, but rather as mines from which could be extracted what appeared to be problems currently under discussion together with instructively unsatisfactory attempts at solving

Cambridge University Press

978-0-521-10734-1 - Ideas, Qualities and Corpuscles: Locke and Boyle on the External World

Peter Alexander

Excerpt

[More information](#)

those problems. These lumps of ore were hastily torn from their contexts with little consideration of the question whether they had been intended as the problems and solutions that, on a superficial reading, they seemed to be. Locke has suffered particularly from this procedure; even today he is more frequently cited than read.

All this involved, I believe, many mistakes which are gradually being exposed.² One mistake was to regard the empiricist basis and aim of Locke's view as identical with those of Berkeley and Hume; I hope to show that although he was, in some sense, an empiricist, his empiricism had more in common with that of the contemporary natural scientists than with that of Berkeley or Hume and that in some respects he was closer to the rationalism of Descartes and Leibniz. I think that in spite of his rejection of Aristotelianism, in which he was much influenced by Robert Boyle, there were elements of the scholastic philosophy that he did not see how to reject, even if he wished to do so. He may have preferred to avoid such sceptical conclusions as Berkeley and Hume were led into by their more wholesale rejection of Aristotelianism. A close study of these matters led me to think that the general descriptive labels 'empiricist' 'rationalist' applied to philosophers may too easily mislead if they are unqualified and used without care.³

A related mistake is to suppose that Locke was more inconsistent and less plausible than he really was and that Berkeley was right about this. I shall argue that when Berkeley was clearly referring to Locke he often misunderstood him. However, recent studies of Berkeley⁴ have suggested that he was often not referring to Locke when he has been traditionally supposed to be. This raises a further problem: justification for the view that the truth about one philosopher can be obtained by reading another philosopher's comments on him must rest on a correct interpretation of both philosophers. This, in turn must rest upon a careful and independent reading of both.

The abridgement of a philosopher's work also raises problems that are often unrecognized by the student; it involves an interpretation which determines the separation of important passages, which must be included, from unimportant passages, which can be omitted. Different abridgements of a work may represent *radically* different interpretations. I believe that all the abridgements of Locke's *Essay* with which I am familiar are misleading to a greater or lesser extent. One defence that is often mounted is that Locke's writing is very repetitious and the student can do without repeated statements of the same point. There are two flaws in that argument. The first is that the importance a person attaches to a view may be indicated by the frequency with which he adverts to it; the second is that it is often likely that Locke is not just repeating himself

Cambridge University Press

978-0-521-10734-1 - Ideas, Qualities and Corpuscles: Locke and Boyle on the External World

Peter Alexander

Excerpt

[More information](#)

INTRODUCTION

3

when he appears to be but is either saying something different or saying the same thing in a different context in order to shed a new light on it. I am inclined to think that the best available abridgement is the Everyman edition by John W. Yolton;⁵ but it is dangerous for me to say even that since it is a personal opinion relying heavily on the fact that it is the abridgement that least conflicts with my own interpretation of the *Essay*.

It may be perfectly legitimate for a philosopher not to take an interest in the history of philosophy but if one does adopt this attitude then it behoves one not to refer to 'the views' of historical figures for criticism and rejection in the course of developing one's own views. Anyone who is important enough to be referred to as often as Locke is worthy of study enough to ensure a reasonable chance of getting him right. I believe, of course, that there is more to be said for the pursuit of the history of philosophy than that it provides a source for outmoded views and instructively bad or usefully good arguments for use in current controversies. A better understanding of contemporary philosophical arguments may be contributed to by an understanding of earlier arguments or conclusions out of which, or in reaction to which, contemporary views have been developed. Of course, not every philosopher can be his own historian of philosophy; for most of us there is just not enough time. But for this very reason sound and scholarly history of philosophy should be encouraged.

My central aim is to achieve a better understanding of the most important features of Locke's philosophy, mainly as contained in the *Essay*. I do not claim, of course, that Locke was correct in all his conclusions but I have not the space here to engage in a full-scale criticism of them from our modern point of view. An essential pre-requisite for such criticism, however, is that we understand Locke's meaning and most of my energies here are directed towards this end. In the course of it I believe it emerges that, if I am right, much of his work is more plausible, consistent and worthy of discussion than has usually been supposed. My project arose largely from my thinking that such a well-read, intelligent and intellectually curious⁶ person as Locke was unlikely to have been guilty of the many inconsistencies, muddles and blindnesses of which he has been accused. I thought it probable that he had often been misinterpreted and was not such a dolt as seems to be suggested by many of the criticisms directed against his work. So I looked for a different interpretation.

The difference between the empiricism of Berkeley and Hume, on the one hand, and that of Locke, on the other, can, I believe, be traced largely to the fact that he was much involved with, and influenced by, the work of contemporary natural philosophers, or scientists, while they were much less so. It has frequently been said by commentators that he was influenced by his friend and contemporary the Honourable Robert Boyle,

Cambridge University Press

978-0-521-10734-1 - Ideas, Qualities and Corpuscles: Locke and Boyle on the External World

Peter Alexander

Excerpt

[More information](#)

and, less plausibly, by Newton but there has been little exploration of the extent and nature of this influence. It seems strange that critics should not have realized that such influences might provide a key to the understanding of Locke's ideas; perhaps this is another consequence of the belief that Berkeley and Hume had understood him. I wish to stress the importance of this influence and to suggest some consequences for the interpretation of Locke. I do not think that the tracing of influences is important for its own sake; I am not interested simply in where Locke got his ideas from unless this throws light upon the nature of his ideas and so helps us to understand what he was saying.

Locke's *Essay* covers a great deal of ground, raising and attempting to deal with a wide variety of problems. The seventeenth century was a period of great intellectual ferment and any philosopher of that period was likely to have been influenced by many scientists and philosophers holding very different views. Locke is no exception; among those mentioned in the literature as having influenced him are Aristotle, Descartes, Gassendi,⁷ Leibniz, Bacon, Boyle and Newton as well as lesser known near-contemporary scholastics and alchemists. Some of Locke's ideas may well have come from, or through, any of these; his criticisms of individuals from this list usually take the form of a rejection of specific ideas and should not be taken as implying that he had no use for other ideas held by them. This makes it dangerous to refer to Locke, or any important figure from this period, as a 'Cartesian', a 'Gassendist', a 'Baconian' or even an 'anti-Aristotelian'. Locke rejected certain Aristotelian views, and that is a central feature of his philosophy as it is of Boyle's, but both of them accepted and built upon certain other Aristotelian views. Locke may have derived his use of '*Ideas*' largely from Descartes or largely from Gassendi; he may have been encouraged in his atomistic views by Boyle, by Gassendi, or by both.

There have been attempts recently to establish that while Boyle was strongly influenced by Descartes, Locke was strongly influenced by Gassendi and no doubt there are respects in which both these statements are true.⁸ However, it does not follow, even if we bear in mind the strong opposition between Descartes and Gassendi, that Locke and Boyle are farther apart than I suppose. Much detailed work on ways in which those influences were incorporated into Locke's work would be necessary to establish that. In the meantime, I present a great deal of positive evidence for the thesis that Locke acquired many important ideas from Boyle or, at the very least, used many ideas that Boyle also used. The tracing of influences must be a detailed and specialized matter if it is to carry weight and it would be impossible, I believe, to discuss all the possible influences I have mentioned in one manageable volume. Moreover, my primary aim is to

Cambridge University Press

978-0-521-10734-1 - Ideas, Qualities and Corpuscles: Locke and Boyle on the External World

Peter Alexander

Excerpt

[More information](#)

INTRODUCTION

5

understand Locke's *Essay* and to present a fairly comprehensive interpretation that will make sense of it; in this my thesis is of considerable help. Within the bounds of that interpretation there remains much to be done in the way of elucidating details and a study of many other figures besides Boyle would no doubt contribute to that.

So I concentrate on the influence of Robert Boyle in the belief that many of Locke's central ideas can be explained by considering Boyle's views, without wishing to suggest that Locke was not importantly influenced by other people. It is worth saying that there is good reason to think that the influence of Newton upon him was much less important. Mere dates suggest this. Locke was working on the *Essay* for twenty years before its first publication in 1690. Newton's *Principia* was first published in 1687 and there is little sign of contact between them before 1689 when Locke first met him. The earliest extant letter from Newton to Locke is dated 1690.⁹ In later editions of the *Essay* Locke makes a few changes in the text as a result of Newton's work but he makes them grudgingly and with a confession that Newton's ideas are not fully intelligible to him.¹⁰ Moreover, it has recently been argued on the basis of the contents of their works, as well as dates, that it is more likely that Locke influenced Newton than the other way about.¹¹

I believe that misunderstanding of Locke's *Essay* frequently begins very early with the passage in the *Epistle to the Reader* about master-builders and under-labourers in which Locke indicates something about his relation to the contemporary natural philosophers. He says

The Commonwealth of Learning, is not at this time without Master-Builders, whose mighty Designs, in advancing the Sciences, will leave lasting Monuments to the Admiration of Posterity; But every one must not hope to be a *Boyle*, or a *Sydenham*; and in an Age that produces such Masters, as the great *Huygenius*, and the incomparable Mr. *Newton*, with some other of that Strain; 'tis Ambition enough to be employed as an Under-Labourer in clearing Ground a little, and removing some of the Rubbish, that lies in the way to Knowledge; which certainly had been very much more advanced in the World, if the Endeavours of ingenious and industrious Men had not been much cumbred with the learned but frivolous use of uncouth, affected, or unintelligible Terms, introduced into the Sciences, and there made an Art of, to that Degree, that Philosophy, which is nothing but the true Knowledge of Things, was thought unfit, or incapable to be brought into well-bred Company, and polite Conversation.¹²

I take it that when Locke here talks of 'advancing the Sciences' he is using 'Sciences' in the old sense to mean 'knowledge' and that when he talks of 'Philosophy' he means both natural and metaphysical philosophy, that is, what *we* now call 'science' and 'philosophy', respectively.

First, it is worth commenting on the names mentioned. Locke had in his

Cambridge University Press

978-0-521-10734-1 - Ideas, Qualities and Corpuscles: Locke and Boyle on the External World

Peter Alexander

Excerpt

[More information](#)

library 62 items by Boyle, 8 by Sydenham, 3 by Huygens and 2 by Newton of which one, the *Optics*, was not published until 1704, the year in which Locke died. Thomas Sydenham was a distinguished medical man who was one of Locke's mentors. One may suppose that Locke mentioned these men in descending order of their direct importance to him but, perhaps, in ascending order of their current reputations. At any rate, he separates Boyle and Sydenham, both of whom he knew and worked with, from 'the Masters' Huygens and Newton, the first of whom he dubs 'great' and the second 'incomparable'.

The usual view of this passage nowadays is that when Locke talks of himself as an 'under-labourer' he is stressing that he is a philosopher, in one modern sense, that is, that he engages in the exposure and removal of conceptual muddles from various areas of discourse, such as scientific and moral discourse. I believe that to be only part of what Locke had in mind. In the first place, he worked in a more literal sense as an under-labourer, helping Boyle with relatively routine tasks¹³ and he read and commented upon some of Boyle's manuscripts before publication.¹⁴ In the second place, and probably much more importantly, the passage quoted suggests that Locke saw himself as helping to make natural philosophy, the views of scientists, more accessible to the intelligent layman, to make it fit and capable 'to be brought into well-bred Company and polite Conversation'. That is, he saw himself as popularizer, in the best sense, of current scientific ideas and controversies. Since the work of the 'new philosophers' frequently involved them in controversies with those who clung to the allegedly Aristotelian ideas of the scholastics and since these ideas were often couched in obscure and ill-understood jargon there was much standing in the way of the layman who wished to know what was going on. Locke was helping the new philosophers to clear the ground of this jargon. This was among the ideals of the newly-formed Royal Society of which both Boyle and Locke were early Fellows. As we shall see, Locke frequently uses the language of Boyle's corpuscular philosophy and may be seen sometimes as reporting, explaining and illustrating that very important hypothesis and recommending its form of explanation.

I would not have it thought, however, that Locke was *merely* reporting the work of natural philosophers or merely trying to remove their, or their predecessors', conceptual tangles. His more specific philosophical task, and that which mainly constitutes his original contribution, was to explore the implications of recent scientific work for our view of the world and of knowledge and belief. This took him into a consideration of what constitutes knowledge and what sorts of things we can or cannot hope to know as well as a reasonably detailed discussion of the nature of language.

Cambridge University Press

978-0-521-10734-1 - Ideas, Qualities and Corpuscles: Locke and Boyle on the External World

Peter Alexander

Excerpt

[More information](#)

INTRODUCTION

7

There is a related but perhaps even more important feature of Locke's *Essay*, the first clue to which lies, I think, in his treatment of innate ideas. Having put forward, in Book I, direct arguments against the view that we have some ideas innately Locke then says, in effect, that if the reader is unconvinced by these he should read the rest of the *Essay*; it is based on the hypothesis that there are *no* innate ideas and will, he hopes, show that a plausible and comprehensive account of our knowledge and understanding of the world can be given without them, thus showing that it is unnecessary to postulate them. This will give indirect support to the hypothesis. He says

I know it is a received Doctrine, That Men have native *Ideas*, and original Characters stamped upon their Minds, in their very first Being. This Opinion I have at large examined already [i.e. in Book I]; and, I suppose, what I have said in the fore-going Book, will be much more easily admitted, when I have shewn, whence the Understanding may get all the *Ideas* it has, and by what ways and degrees they may come into the Mind; for which I shall appeal to every one's own Observation and Experience. (II.i.1)

What he in fact claims to show is that it is sufficient for an adequate account of our knowledge of the world to suppose our knowledge to be based upon ideas originating in experience; thus there is *no need* to suppose as well that we are provided at birth with ideas that are independent of our experience.

I take this argument to be of the hypothetico-deductive form of modern scientific argument, to the development of which Boyle and others at this time were so significantly contributing. It is worth noting, in passing, that it has been claimed that Newton was less favourably disposed towards such arguments.¹⁵ I believe this form of argument figures largely in Locke's *Essay*, in particular, in the way in which it uses the corpuscular hypothesis: if an account of our everyday experience and description of the world based on the best available scientific hypothesis were adequate and plausible then this would provide powerful indirect support for that hypothesis. Locke may be regarded as, quite deliberately, helping Boyle and others in supporting it.

A sympathetic reading of the *Essay* as a whole, in conjunction with the relevant works of Boyle, seems to me to put it beyond doubt that the 'lasting monument' of the master-builders that most impressed Locke was the corpuscular philosophy; it is used and referred to over and over again especially in the most central passages. Moreover, Locke uses many examples that figure in Boyle's experiments specifically designed to support his hypothesis.

Locke's view of hypotheses in general is far from uncontroversial. Thus

Cambridge University Press

978-0-521-10734-1 - Ideas, Qualities and Corpuscles: Locke and Boyle on the External World

Peter Alexander

Excerpt

[More information](#)

John W. Yolton, though he admits that Locke was much taken with the corpuscular hypothesis, says¹⁶ that ‘the aspect of science which influenced Locke was not the formation of hypotheses’ (p.58) but rather it was the Royal Society’s ‘programme of natural histories which caught Locke’s eye’ (p.63, n.3). I am inclined to think that Locke attached importance to both these things and therefore to favour Laurens Laudan’s account¹⁷ of his attitude to hypotheses in general. I do not wish to enter here into direct controversy but I hope that what I have to say later will help to make my view more plausible.

It must not be thought that either Boyle or Locke regarded the corpuscular hypothesis as established or that they regarded its basic concepts as the only possible ones for scientific explanation. Boyle says

that, which I need to prove, is, not that mechanical principles are the necessary and only things, whereby qualities may be explained, but that probably they will be found sufficient for their explication.¹⁸

Locke is similarly cautious when he says

I have here instanced in the corpuscularian Hypothesis, as that which is thought to go farthest in an intelligible Explication of the Qualities of Bodies; and I fear the Weakness of humane Understanding is scarce able to substitute another, which will afford us a fuller and clearer discovery of the necessary Connexion, and *Co-existence*, of the Powers, which are to be observed united in several sorts of them. This at least is certain, that which ever Hypothesis be clearest and truest, (for that it is not my business to determine,) our Knowledge concerning corporeal Substances, will be very little advanced by any of them, till we are made see, what Qualities and Powers of Bodies have a *necessary Connexion or Repugnancy* one with another; which in the present State of Philosophy, I think, we know but to a very small degree: And, I doubt, whether with those Faculties we have, we shall ever be able to carry our general Knowledge (I say not particular Experience) in this part much farther. (IV.iii.16)

In the *Essay* Locke is, I believe, partly exploring the implications of this hypothesis and partly considering, in general, the nature and place of hypotheses in natural philosophy.

Boyle sought to establish or refute his hypothesis by observation and experiment. If Locke is regarded as attempting to give indirect support to it by considering how broadly it could be applied to familiar everyday phenomena then many of his arguments, especially those concerning primary and secondary qualities, become more intelligible and plausible than they have usually been supposed to be. Of course, Locke was interested also in ‘natural histories’, as were both Boyle and Bacon, because these were to form the basis for the construction of hypotheses which were not drawn out of thin air, or based upon the authority of Ari-

Cambridge University Press

978-0-521-10734-1 - Ideas, Qualities and Corpuscles: Locke and Boyle on the External World

Peter Alexander

Excerpt

[More information](#)

INTRODUCTION

9

stotle, or upon *a priori* conclusions from unexamined metaphysical principles as, they alleged, were those of many scholastic philosophers whom they attacked.

It is important to recognize that the context of Locke's *Essay* was the so-called 'Revolution in Science' of the seventeenth century. The nature of this 'revolution' is an exceedingly complex matter but one central feature of it was a rejection of many ideas and attitudes allegedly drawn and developed from Aristotle by the medieval schoolmen. Another important feature was the growing perception that theology, natural philosophy and metaphysical philosophy could and should be pursued independently of one another and that philosophy need no longer be regarded as the handmaid of religion. Part of this was the recognition that philosophical thinking and scientific investigation constituted no threat to religious belief or much theological thinking. The natural philosophers attacked by Boyle were largely influenced by scholastic views or by certain alchemical ideas or both. Boyle was strongly influenced by early and recent atomism, which had never become generally accepted largely because it was regarded as atheistical, it was attacked by Aristotle and was difficult to make consistent with well established Aristotelian views. Much of Aristotelianism had become part of the official philosophy of the Church, so these various points are closely connected. Boyle explicitly mentions two main targets, peripatetics or schoolmen and spagyrist or alchemists, mainly those with medical interests.

Locke, I believe, was joining Boyle in this attack, although partly from a different point of view. He was more directly interested in epistemology, Boyle in empirical investigation. It is difficult to understand either of them without an awareness of the context in which they were working. This is more often said of Boyle than of Locke for the obvious reason that Boyle was much more explicit in stating the views against which he was reacting. One of my aims is to show how a recognition of this helps to clarify what Locke was saying. I have accordingly divided the book into two parts, the first dealing largely with Boyle and his background, the second dealing with selected central features of Locke's *Essay*.

Boyle deserves a book, or many books, on his own account. I have been able to do no more than give a sufficient picture for my purpose of the place of his theorizing in its context by indicating briefly how he saw the views against which he was reacting. His work was highly influential and constitutes a landmark in the history of chemistry. He feared criticism from fellow natural philosophers because of his interest in chemistry which was unfashionable at the time partly, I think, because much alchemy had brought chemistry into disrepute among those involved in the Royal Society. Boyle recognized, however, that many alchemists,

Cambridge University Press

978-0-521-10734-1 - Ideas, Qualities and Corpuscles: Locke and Boyle on the External World

Peter Alexander

Excerpt

[More information](#)

especially those with a medical interest, had made valuable empirical discoveries in chemistry. In fact Boyle did not desert physics for chemistry but applied physical ideas to it and so developed out of atomistic views going back to ancient Greece what is probably his major contribution, the corpuscular hypothesis. The aim of this was to allow the development of mechanical explanations of as many natural phenomena as possible. He produced at least a programme for this and some discussion of what its limits might be.

I have tried to give an accurate account of this hypothesis and to extract the epistemological views underlying his discussions of it. This part of my book is obviously inadequate to do more than indicate a few of the complexities of the period and expose some of the ideas that were centrally under discussion. I claim only that it helps us to a clearer understanding of Locke's *Essay* and I shall be satisfied if it does that. I do not claim to make any original contribution to the history of science; I have had to rely on much excellent historical scholarship that has appeared during this century. Neither have I been able to give a detailed account of the views of those Boyle attacked as their proponents saw them; what is important for my purpose is how Boyle saw them.

The second part of the book is not intended to be a commentary on the whole of Locke's *Essay*; I have chosen those topics that seem to me to be central to Locke's thought, explored their relations to one another and argued that they may be susceptible to unorthodox interpretations when they are considered in the light of Boyle's work. One effect of this is to show the *Essay* to be a more coherent and unified work than it would otherwise appear to be. Another is to show it as a developing argument in which new technical terms are introduced gradually in a significant order and ideas are adjusted and refined as the work proceeds.

I have tried in my arguments to rely as little as possible on Locke's celebrated carelessness and inattention and to assume that he is not being inconsistent until I am driven into a contrary view. This assumption is not, however, gratuitous because it is part of my contention that the consideration of the *Essay* in the light of Boyle's work and the regarding of it as a developing argument helps one to remove some apparent inconsistencies. I have not often engaged in piecemeal controversy with other commentators on Locke, partly for reasons of space, partly in an attempt to avoid tediousness but more importantly because my aim has been to present my interpretation whole and to ask the reader whether it does not make more coherent sense of what Locke says in the *Essay* than some more familiar interpretations. I hope that the detailed arguments will be considered not only in isolation but also in relation to the whole. I believe that this is an approach of which Locke would have approved.