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GEORGE BERKELEY

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Abbreviations

Works by Berkeley

Works (vol. and page)	*The Works of George Berkeley Bishop of Cloyne*, ed. A. A. Luce and T. E. Jessop (Edinburgh, 1948–57)
ALC	*Alciphron: or, the Minute Philosopher*
D	*Three Dialogues between Hylas and Philonous*
DM	*Essay on Motion*
NTV	*An Essay towards a New Theory of Vision*
PHK	*A Treatise Concerning the Principles of Human Knowledge (Part I)*
S	*Siris: A Chain of Philosophical Reflexions and Inquiries Concerning the Virtues of Tar-Water*

Works by other authors

Essay	John Locke, *An Essay Concerning Human Understanding*, ed. Peter H. Nidditch (Oxford: Clarendon Press, 1975)
Principles	Isaac Newton, *Mathematical Principles of Natural Philosophy*, trans. A. Motte, rev. F. Cajori (1962)
Oeuvres	*Oeuvres de Descartes*, ed. C. Adam and P. Tannery, revised edn. (Paris: Vrin and CNRS, 1964–76)

Introduction

> 'There are men who say there are insensible extensions, there are others who say the wall is not white, the fire is not hot &c. We Irish men cannot attain to these truths.'[1]

George Berkeley may have been echoing Swift's irony when he linked his nationality, as an Irishman, with the limited scope of his ideas. However, his apparent diffidence about the metaphysical excursions of others did not prevent him from proposing, in his relative youth, a form of idealism that many of his contemporaries considered counter-intuitive and possibly irrational. The so-called immaterialism of the *Principles* and the *Dialogues* may still strike some readers today as bizarre, or even as symptomatic of psychiatric illness, because it appears to deny the reality of familiar objects of everyday experience. There is, therefore, a paradox at the core of what Berkeley presents as a 'revolt from metaphysical notions to the plain dictates of nature and common sense' (*D*, 172). On the one hand, he claims to defend common sense, not to speculate beyond the limits of sensory experience, and to provide a bulwark against scepticism. On the other hand, he seems to deny the reality of the familiar physical world, of houses, mountains and rivers, and even of the people with whom we discuss the merits of philosophical theories. The paradox

[1] *Notebooks*, # 392, *Works*, I, 47. Cf. # 398: 'I Publish not this so much for anything else as to know whether other men have the same ideas as we Irishmen' (ibid.). For references to the more familiar works of Berkeley I use the abbreviations listed on p. vii. In the case of *D*, I provide the page numbers to the edition in *Works* (which are also provided below in this text); and in the case of *ALC*, I provide the Dialogue number and the paragraph number.

is acutely illustrated by Berkeley's discussion of God. While apparently denying the reality of bodies or matter, he argued that God communicates with us in a 'visual language' (*ALC*, iv, 16) and that 'the existence of God is far more evidently perceived than the existence of men' (*PHK*, 147).

These apparently dissonant elements in Berkeley's thought make it difficult to construct a coherent interpretation of his philosophy. If such an interpretation is possible, it is likely to emerge from a close reading of the historical context in which he wrote and of the philosophical views that he rejected as inimical to his religious beliefs.

Life

Berkeley was born on 12 March 1685 in or near Kilkenny, a relatively small city within the eastern region of Ireland that had been anglicized most successfully during the seventeenth century 'plantations'. He was educated at Kilkenny College, a residential school for Church of Ireland boys, and subsequently matriculated in 1700 at Dublin University, to which he remained attached until 1724. Following graduation in 1704, he was appointed a Fellow of Trinity College in 1707, and began work on his early philosophical publications. Some initial thoughts or reactions to what he read in other philosophers are recorded in notebooks that were published posthumously as the *Philosophical Commentaries*. These included often very brief, discrete notes and suggestions, some of which were subsequently expanded and defended in his published work. Berkeley published *A New Theory of Vision* and *The Principles of Human Knowledge (Part I)* in Dublin, in 1709 and 1710 respectively, but neither one attracted much critical attention. Although the *Principles* had been scheduled to appear in at least two parts, Berkeley seems to have deferred publication of Part II in favour of reworking his central philosophical theses in dialogue form, which he published in London, following his arrival there in 1713, as *Three Dialogues between Hylas and Philonous*.

Berkeley remained in London for a number of years, where he was acquainted with many prominent writers, including Steele, Addison, Pope, and Swift. While in London he contributed to the *Guardian*, which was edited by Steele, and undertook two extensive trips to continental Europe in 1713–14 and 1716–20. He met Malebranche in Paris in 1713 and, during the second of these journeys, the Académie royale

des sciences (Paris) invited submissions for a competition on the topic of motion. Berkeley submitted, unsuccessfully, an essay in Latin entitled *De Motu*, and subsequently published it on his return to London. This is translated below as *An Essay on Motion*.

In 1722, at the age of thirty-three, Berkeley began to consider a missionary career among indigenous peoples in America, which he later described as a plan 'to spend the residue of my days in the Island of Bermuda' (*Works*, VIII, 127). The main objective was to found a college in Bermuda in which local students could be trained as Church of England priests to evangelize their own people or, in the words of the proposal, to convert 'the savage Americans to Christianity'. These ambitions were facilitated by Berkeley's appointment as Dean of Derry in 1724, which provided a salary without the inconvenience of moving to Derry, and by an unexpected inheritance from Swift's friend, Vanessa. He was further encouraged when the British Parliament provided a charter for his projected college, and a promise of £20,000 towards the cost of its establishment. Berkeley married Anne Forster in 1728 and set sail for the New World. He settled initially in Rhode Island, in the eastern United States, to await payment of the monies promised by Parliament in London. However, following a delay of three years, he received a clear indication that the monies would not be paid as promised, and he returned to London in 1731 without ever having reached Bermuda.

Berkeley published *Alciphron* in London soon after his return there, which confirms that he had been working while in Rhode Island on ways to accommodate, within philosophy, the theological beliefs that inspired his missionary enterprise. He remained in London until 1734, when he was appointed Bishop of Cloyne (in County Cork, Ireland); he was consecrated bishop in Dublin, before travelling south to his diocese. Apart from a few brief interludes, Berkeley remained in the village of Cloyne for the following seventeen years. During this period, he published various pamphlets which addressed some of the economic, political, and religious issues that were relevant to Ireland at the time. He also became familiar with the miseries caused by famine and the lack of medical care among the poor, and wrote *Siris* in response to those experiences. This book, about the therapeutic benefits of tar-water, appeared in six editions in 1744. In contrast with his early publications, this unusual work was widely read and sections were translated the following year into Dutch, French, and German. Berkeley left Cloyne

in rather poor health, in August 1752, and moved to Oxford, where his son George was a student. He died in Oxford, on 14 January 1753.

Berkeley was one of a number of mostly Anglo-Irish thinkers and essayists in the early eighteenth century, whose members expressed their ambivalent relationship with the political, religious, and literary influences of England. These included William Molyneux (1656–98), whose work in optics significantly influenced Berkeley's theory of vision; John Toland (1670–1722), whose objections to traditional Christian accounts of mystery, in *Christianity not Mysterious* (1696), challenged Berkeley to discuss the meaning of theological language; and Francis Hutcheson (1694–1746), who was almost an exact contemporary of Berkeley, although he belonged to a dissenting Christian church, rather than the Church of Ireland, and later pursued an academic career in Scotland. This group also included the dramatist William Congreve (1670–1729), and Jonathan Swift (1667–1745), who had attended the same school and university as Berkeley and was described by him as 'one of the best natured and agreeable men in the world' (*Works*, VIII, 63). Thus the immediate context of Berkeley's writings was provided by literary, religious, and philosophical authors, who were based in or associated with Dublin, and who discussed publicly the issues that confronted a reformed church and colonial power that were attempting to consolidate their influence – both political and theological – on a reluctant native population that remained predominantly Roman Catholic. Some of those involved were also prominent theologians and bishops in the Church of Ireland, whose names have since lapsed into relative obscurity: William King (1650–1729), who was Archbishop of Dublin; Peter Browne (1666–1735), who was professor of theology and provost at Trinity College, and later Bishop of Cork and Ross; Robert Clayton (1695–1758), and Edward Synge (1659–1741), both of whom also became Church of Ireland bishops.

While these Anglo-Irish authors were the immediate inspiration for much of Berkeley's work, especially in philosophy of religion, the primary source of their common interests was the philosophy that had been developed in Britain and elsewhere in Europe in response to the scientific revolution of the seventeenth century. Robert Boyle and Isaac Newton were pre-eminent representatives of the new natural philosophy. Various well-known philosophers who had adapted their theories to accommodate the new sciences – such as Descartes, Malebranche, Hobbes,

Leibniz, and especially Locke – provided the philosophical background with which Berkeley and his Irish contemporaries engaged.

One understands Berkeley best, then, by considering both the local and international contexts in which he wrote. He was associated, in Ireland, with theologians and philosophers who constituted a community of Anglo-Irish, colonial, Protestant thinkers. These, in turn, were conscious of the wider intellectual context that had been dominated by the scientific revolution in the seventeenth century, and by philosophical and theological reactions to that revolution by authors from Descartes to Locke. George Berkeley was actively engaged with both contexts. Their combined influence meant that, as a committed member of the Church of Ireland in the eighteenth century, he attempted to defend his theological beliefs against what he understood as heterodox interpretations of Christianity. These included deism, socinianism, and atheism – terms which were used almost interchangeably to denote deviations from a strict understanding of Trinitarian Christianity – and, at the other extreme, Roman Catholicism, which was associated following the so-called 'Glorious Revolution' of 1688 with international enemies of the restored English monarchy. One of the central themes in Berkeley's philosophy, then, was the defence of his religious faith against both philosophical and theological critics.

Empiricism and certainty

For empiricists such as Locke, experience was the exclusive source of human knowledge.

> Whence has it [the mind] all the materials of Reason and Knowledge? To this I answer, in one word, From *Experience*: In that, all our Knowledge is founded; and from that it ultimately derives it self.[2]

Locke's understanding of experience was wider in scope than might initially appear. It included both external and internal sources, so that the content of the mind (what Locke called 'ideas') may originate from either sensory observation or from reflection on the mind's own operations. Although Berkeley adopted a more restrictive version of Locke's theory (which is discussed below), their common reliance

[2] *Essay*, II, i. 2.

exclusively on experience highlighted an issue that had emerged in the early seventeenth century, about the extent to which our perceptions are accurate representations – almost like mental pictures – of the realities of which they are perceptions.

Galileo argued in 1623 that if we tickle someone's foot – for example, by using a feather – and then repeat the same action on the foot of a marble statue, the objective events are similar in both cases; there is a slow movement of a feather in glancing contact with two bodies (one living, the other made of marble). Although a living person (normally) experiences the sensation of tickling, it would be absurd to believe that there is some characteristic 'tickling quality' in the feather that matches the subjective feel or phenomenological quality of the sensation. Galileo concluded that the objective events are the same in the case of the statue and the foot of a living person, and that a tickling feeling results only in the latter because of the physiology and perceptual faculties of the perceiver. 'Anyone would make a serious error if he said that the hand, in addition to the properties of moving and touching, possessed another faculty of "tickling," as if tickling were a phenomenon that resides in the hand that tickled.'[3]

Once it is accepted that there is no resemblance, in the case of a tickling sensation, between the qualities of the objective events that trigger the sensation and the sensation that is experienced, there is reason to raise a more general question: have we any reason to believe that other sensations correspond qualitatively to the external stimuli that cause them? If not, our view of the objective world would be misguided if we projected onto external reality the qualities of the sensations that we experience. This concern was further motivated by Descartes who argued that words, as purely conventional signs, succeed in triggering appropriate thoughts in our minds without any resemblance between the words and the realities that we think about.[4] The word 'horse', for example, either when written or spoken, has none of the features of a horse, and yet it succeeds in triggering the thought of a horse in the minds of those who speak English. If conventional signs consistently evoke appropriate ideas without resembling them, why would it not be possible for sensations to

[3] Galileo Galilei, *The Assayer*, in *Discoveries and Opinions of Galileo*, ed. Stillman Drake (New York: Doubleday, 1957), p. 275.
[4] *The World*, in *Oeuvres*, XI, 4.

trigger appropriate ideas in the human mind without resembling the realities that we think about?

The solution adopted by Galileo, Descartes, and the subsequent tradition of natural philosophy was to distinguish between two kinds of properties in external (i.e. mind-independent) realities, which were called primary and secondary qualities. Both were thought to be genuine properties of the external world. Secondary qualities were defined as those qualities of things, whatever they turn out to be, which cause us to have sensations *without* resembling them. For example, it was assumed that there is something about red things that causes us to perceive them as red; it may be some property of the surface of objects by which they reflect or absorb rays of light, but certainly not a 'quality of redness' that resembles the sensation we experience. A similar account was assumed in the case of sound, taste, etc. – that is, for all sensory perceptions. In contrast, primary properties were defined as those features of bodies that correspond to our conceptions of them. For example, if we think of a piece of matter as a cube, we think it has six faces, that its sides are equal in length, and that these features of the object thus correspond to our conception of what a cube is like. There is no suggestion, of course, that our *ideas* have qualities which are similar to the qualities of the corresponding realities – for example, that our *idea* of a cube has a cubic shape (as if it were even meaningful to speak literally about the shape of an idea). The suggestion is, rather, that a primary quality has those features that are implied by the relevant idea of that quality.

Locke provided, in his *Essay*, what came to be recognized as the standard account of this distinction.[5] He defined primary qualities as those that are 'utterly inseparable from the body, in what estate soever it be'; and he defined secondary qualities as 'powers to produce various sensations in us by their primary qualities, i.e. by the bulk, figure, texture, and motion of their insensible parts'.[6] In contemporary theory,

[5] It is more accurate to say that Locke made a number of distinctions and combined them ambiguously under the same rubric. See Michael Jacovides, 'Locke's Distinctions between Primary and Secondary Qualities', in L. Newman, ed., *The Cambridge Companion to Locke's 'Essay Concerning Human Understanding'* (Cambridge: Cambridge University Press, 2007), 101–29. The only distinctions that are relevant here are (a) between qualities that do, and those that do not, 'resemble' the ideas of such qualities (where 'resemble' is understood appropriately); (b) between qualities that are, or are not, reducible to more elementary qualities.

[6] *Essay*, II, viii, 9.

that corresponds to a distinction between (a) the ultimate particles and/or properties that are used in a scientific explanation of physical phenomena, and (b) other properties of bodies that are reducible to (a).

Although Locke emphasized a number of times that *qualities* are in *objects* (or events), and *ideas* are in the *mind* of someone who thinks about or has sensations of qualities, he anticipated the possibility of confusion between qualities and ideas, even in his own book. Accordingly, he warned readers concerning 'ideas, if I speak of sometimes, as in the things themselves, I would be understood to mean those qualities in the objects which produce them in us'.[7] For Locke, then, it made no sense to talk about ideas as if they were extra-mental realities, independent of someone's thinking or sensing. Ideas are mental states of some kind; properties are features of extra-mental realities that somehow cause us to have ideas.

Galileo and Descartes drew a distinction between primary and secondary qualities for a number of reasons. One reason was to challenge the naïve assumption that the realities that cause our sensations have similar qualities to the sensations themselves. Without that assumption, there is no justification for projecting the latter onto the former, and natural philosophers must instead *speculate* about the kinds of objective qualities that are likely to cause our sensations. A second, related, reason was to reject the assumption that there are as many fundamental properties in matter as there are distinct types of human sensory perception. For example, an explanation of the almost indefinitely large number of colours that we can distinguish visually does not require the same number of corresponding properties in matter. Variations in the size of one parameter, namely the length of a wavelength, could explain variations in colour perception.

This fundamental insight, which was widely shared in the period immediately prior to Berkeley, may be summarized as follows:

1. we have no reason to believe that any sensory perception provides an accurate resemblance or picture of the external stimulus that causes it;
2. the only way to discover the natural phenomena that trigger our sensory perceptions is by hypothesis, and by other strategies that were developed in the scientific methods of the seventeenth century;

[7] *Essay*, II, viii, 8.

3. the results of these speculative excursions can never realize the degree of certainty that was traditionally associated with intuition and demonstration.

In a word, we can make progress in understanding nature only by taking epistemological risks.

Berkeley's philosophy represents a rejection of this interpretation of sensations, which developed within natural philosophy. He limited the foundations of knowledge to the data of immediate experience, rejected the hypothetical methods of science, and required of all knowledge-claims a degree of certainty that was impossible to achieve outside of logic and mathematics. He also accused of scepticism those who speculated about natural phenomena in a manner that implied uncertainty. This comprehensive rejection of the new sciences was worked out in several ways, one of which was by denying the distinction between primary and secondary qualities.

Berkeley's argument against the validity of this distinction in the First Dialogue systematically confuses the reader by failing to observe Locke's warning about the difference between qualities and ideas. Hylas attempts to explain the distinction, but Berkeley makes him misdescribe secondary qualities as 'only so many sensations or ideas existing nowhere but in the mind' (*D*, 188). This contrived concession collapses Locke's distinction between (a) sensations and (b) the powers or qualities in bodies that cause those sensations in us, and it fails to acknowledge that terms such as 'colour' or 'sound' may refer to either one. It thus invites the reader to believe that, at least in the case of secondary qualities, the relevant *quality* is nothing more than the perceptual experience of seeing something coloured or hearing some sound. It was impossible to argue against Boyle's or Locke's distinction in that way, because the argument was based on a misunderstanding. Since Berkeley's analysis fails in respect of secondary qualities, *a fortiori* it fails in the case of primary qualities.

Locke had surprisingly combined his thesis about experience as the exclusive source of knowledge with a traditional demand that beliefs may be deemed knowledge only if they realize the degree of certainty achieved by intuition or demonstration. 'These two, (*viz.*) Intuition and Demonstration, are the degrees of our Knowledge; whatever comes short of one of these, with what assurance soever embraced, is but Faith, or Opinion, but not Knowledge, at least in all general

Truths.'[8] Thus while (for example) mathematics and morality both satisfied this criterion for Locke – he thought they were immune from empirical disconfirmation because they describe only an ideal or constructed world and do not claim to correspond to some independent reality – the speculative hypotheses of natural philosophers fall far short of such certainty. They were therefore excluded from the scope of knowledge by the restrictive limits of Locke's stipulative definition.

> And therefore I am apt to doubt that, how far soever humane Industry may advance useful and *experimental* Philosophy *in physical Things*, *scientifical* will still be out of our reach; because we want perfect and adequate *Ideas* of those very Bodies, which are nearest to us, and most under our Command.
>
> ... we are under an absolute ignorance. ...
>
> But as to a perfect *Science* of natural Bodies ... we are, I think, so far from being capable of any such thing, that I conclude it lost labour to seek after it.[9]

Berkeley seems to have endorsed, in his early works, the same demand for certainty in any belief that counts as genuine knowledge. He had Philonous say on his behalf, in the *Dialogues*: 'I assure you, Hylas, I do not pretend to frame any hypothesis at all. I am of a vulgar cast, simple enough to believe my senses, and leave things as I find them' (*D*, 229). He thought it was a 'jest for a philosopher to question the existence of sensible things ... or to pretend our knowledge in this point falls short of intuition and demonstration' (*D*, 230), thereby implicitly endorsing Locke. The combined effect of both claims – (i) of limiting knowledge-claims to what is given in experience, and (ii) limiting the scope of knowledge to what is established by intuition or demonstration – was to devalue precisely the novel methods that began to emerge in the new sciences, methods that inevitably involved speculating about the hidden causes of observable natural phenomena.

Rather than fear that such speculations would lead to scepticism, there was another alternative available, *viz.* to challenge the traditional definition of knowledge, and to accept that explanations of natural phenomena are unavoidably hypothetical. That solution was adopted by Christiaan Huygens, in the same year (1690) in which Locke's *Essay*

[8] *Essay*, IV, ii, 14. Cf. *Essay*, IV, iii, 14: 'Probability, amounts not to Certainty; without which, there can be no true Knowledge.'
[9] *Essay*, IV, iii, 26, 27, 29.

appeared. In the Preface to his *Treatise on Light*, Huygens described the kind of knowledge that could be realized in natural philosophy:

> There will be seen in it demonstrations of those kinds which do not produce as great a certitude as those of Geometry, and which even differ much therefrom, since whereas the geometers prove their propositions by fixed and incontestable principles, here the principles are verified by the conclusions to be drawn from them; the nature of these things not allowing of this being done otherwise. It is always possible to attain thereby to a degree of probability which very often is scarcely less than complete proof. To wit, when things which have been demonstrated by the principles that have been assumed correspond perfectly to the phenomena which experiment has brought under observation; especially when there are a great number of them, and further, principally, when one can imagine and foresee new phenomena which ought to follow from the hypotheses which one employs, and when one finds that therein the fact corresponds to our prevision.[10]

There were evident dangers for natural philosophers if they accepted as true mere speculations that were not confirmed by experiment or observation. However, there was even greater danger to the development of modern science in a refusal to speculate about the hidden causes of the phenomena we observe. Berkeley chose the second option, by imposing on natural philosophy a traditional definition of knowledge that it could satisfy only at the cost of obstructing its most creative developments.

Matter and bodies

Berkeley's critique of matter may be read narrowly as a technical discussion among philosophers of how best to define matter or, more specifically, as a critical analysis of Locke's concept of material substance. This interpretation is suggested by Philonous in the *Dialogues*: 'that there is no such thing as what philosophers call "material substance", I am seriously persuaded' (*D*, 172).[11] Alternatively, it may be seen as a radical idealism that denies the reality of physical bodies, which are understood as external things that exist independently of any thought or idea of

[10] C. Huygens, *Treatise on Light*, trans. S. P. Thompson (New York: Dover, 1912), vi–vii.
[11] Cf. *PHK*, 35: 'The only thing whose existence we deny is that which philosophers call matter or corporeal substance.'

them. A third option combines both interpretations; Berkeley may have offered apparently plausible arguments for the former, while presenting the conclusions as supportive of the latter.

Locke famously argued that our *idea* of a particular material thing or body is a *complex idea* composed of specific ideas of the various qualities of the body in question. For example, in the case of a silver coin, we have ideas of its shape, size, colour, hardness, its chemical reactions with various acids, etc. Our idea of a silver coin is a combination of these ideas; we have no other idea of some underlying reality that is independent of all these qualities, because (according to Locke) it would be impossible to acquire such an idea from sensory experience. A similar analysis applies to our ideas of thinking, willing, etc., which are known by reflection. The latter comprise the complex idea of a human mind, and we have no independent notion of (what Locke assumes is) an immaterial substance – of something that is distinct from the activities of thinking, etc. Since both kinds of substance, material and immaterial, are equally known (as complex ideas of qualities) or unknown (as independent *substrata*), Locke argued:

> From our not having any notion of the *Substance* of Spirit, we can no more conclude its non-Existence, than we can, for the same reason, deny the Existence of Body; It being as rational to affirm, there is no Body, because we have no clear and distinct *Idea* of the *Substance* of Matter; as to say, there is no Spirit, because we have no clear and distinct *Idea* of the *Substance* of a Spirit.[12]

Despite this apparent parity, Locke left his readers with ambivalent cues about substances. He needed the concept of a spiritual substance to talk about God, whose existence he claimed was known by demonstration. In contrast, he found no similar use for the concept of a material substance because our knowledge of material substances was limited to ideas of their properties. He could thus make the theological doctrine of transubstantiation appear silly, because it invited people to believe that, underlying all the qualities that are perceived in bread or wine, there is

[12] *Essay*, II, xxiii, 5. Newton argued for a similar conclusion in the *Principles* (2nd edn. 1713), General Scholium (II, 546): 'what the real substance of anything is we know not. In bodies, we see only their figures and colours ... much less, then, have we any idea of the substance of God. We know him only by his most wise and excellent contrivances of things, and final causes.'

some unobservable substance that changes without a corresponding change in the observable qualities.

> Take an intelligent *Romanist* ... How is he prepared easily to swallow, not only against all Probability, but even the clear Evidence of his Senses, the Doctrine of *Transubstantiation*. This Principle has such an influence on his Mind that he will believe that to be Flesh, which he sees to be Bread.[13]

Berkeley was as critical as Locke of the doctrine of transubstantiation (*ALC*, VII, 15; *PHK*, 124), and of the concept of an underlying substance on which it relied. However, as will be seen below, he retained the concept of an immaterial substance to describe human minds and God. His critical comments, therefore, were exclusively focused on the concept of a 'material substance'.

For many natural philosophers, from Descartes to Newton, the concept of matter did not necessarily imply motion, and matter was defined as passive with respect both to motion and rest. If a piece of matter moves, it remains in motion unless impeded by something else; and if it is not in motion, it remains in that condition unless some external agent intervenes to move it. Berkeley exploited this analysis by including passivity as a defining feature of material substances. He also accepted Locke's argument that, when we perceive a body, we perceive its observable qualities and we have no experience of some distinct underlying reality called a substance. Since for Berkeley it was 'a sufficient reason not to believe the existence of anything, if I see no reason for believing it' (*D*, 218), he shifted the burden of defending material substances onto those who wished to introduce them. According to Berkeley's interpretation, proponents of material substance talked about a completely passive reality, 'an unthinking, unperceiving, inactive substance'; more seriously, substances were realities of which they had no distinct ideas, 'unknown quiddities ... or *substratums*' (*D*, 233, 256).

If Berkeley had merely rejected an abstruse metaphysical account of material substance, it would hardly have caused his readers, either in the eighteenth century or now, to believe that he denied the reality of familiar physical bodies. However, it was also part of Locke's account of ideas that physical bodies, and their qualities, cause us to have ideas 'manifestly *by*

[13] *Essay*, IV, xx, 10.

impulse, the only way which we can conceive Bodies operate in'.[14] Even Locke had to admit that he had not *explained* how the impact of a physical body on an eye or ear could cause an idea to arise in a human mind. Berkeley identified the gaps in this account as a reason for rejecting it, and offered instead what he proposed as a more plausible explanation of how ideas arise in our minds. This choice, between bodies as causes of our ideas and some alternative cause, presupposed a number of independent theses for which Berkeley needed other arguments.

One of those theses, widely shared at the time, was that ideas or thoughts are mental events, and that mental events are immaterial. If someone wished to hold that immaterial events are caused by the physical impact of bodies on our sense organs, they could claim, as Descartes had done, that we are certain that this occurs but are unable to explain it. However, Berkeley noticed that the Cartesians and, in fact, nearly all those whose philosophy he read, had also assumed that God is in some sense the ultimate or primary cause of everything that happens in the universe, and that other so-called secondary causes, such as bodies in motion, derive their limited efficacy from God. This raised a question about the possible redundancy of secondary causes.

Berkeley's reflections on this issue were influenced by the French Cartesian, Nicolas Malebranche, who argued that God is the only genuine efficient cause of everything that occurs in the universe. According to Malebranche, what appear to be secondary causes, such as the impact of one moving body on another, are merely the occasions on which God exercises his omnipotent efficient causality. These considerations led Berkeley to reduce the options available to two rival accounts of what happens when we passively receive ideas, apparently from some external source: (i) God directly causes ideas to arise in our minds; or (ii) God causes some physical phenomenon to cause an idea in our minds. There were a number of reasons for rejecting the latter. One was that it presumes a causal link that is not explained, *viz.* between the natural phenomenon (which is physical) and our minds (which are immaterial). Secondly, it introduces a redundant cause because, given God's involvement in both accounts, it is unnecessary to introduce any further cause as if God could not achieve the desired result alone. When combined with the alleged passivity of material substances, Berkeley could argue that the

[14] *Essay*, II, viii, 11.

accepted account of how ideas arise in the mind suffers from three serious defects. It postulates unobserved causes that, by definition, are inactive; it compromises the radical distinction between mind and matter; and it describes God's agency as if it required assistance from natural phenomena. It would be a simpler and more coherent theory to assume that God directly causes us to have ideas, without any intermediary. However, this argument ignores another alternative: that physical phenomena are the causes of ideas, which in turn are understood as events in human bodies rather than as 'immaterial' events in the mind. Berkeley anticipated that this view could be used to support atheism, because it undermines the notion of an immaterial mind on which the notion of God depends. That alone was a sufficient reason for him to avoid it.

Berkeley concludes his discussion of matter with denials of the reality of physical bodies (as this word is normally understood). This might appear to have the same status as the claim that there were no tigers in Dublin in 1713. However, it is completely different from the latter, and therefore requires a different kind of evidence. The claim about tigers presupposes the reality of physical objects in an extra-mental world, and simply denies that those objects include tigers. In contrast, Berkeley's claim was not made within the framework of physical objects; it was a claim about that whole framework, to the effect that it is redundant or otherwise dispensable. For that reason, it seems to result from his theory of perception and ideas (which is discussed below) rather than from anything he says about material substance, or from the associated claim that all our language about the world, including the biblical account of creation, can be translated into language about perceptions.

It remains an open question, then, whether the Bishop of Cloyne travelled to Oxford while denying the reality of the boat in which he sailed, or whether he merely claimed that his travel experiences could be described adequately in the language of phenomenalism.

Explanation

When Berkeley began to reflect on what counts as an explanation of natural phenomena, there were at least two models available, one deeply traditional and the other relatively novel. They differed in the relative uncertainty of the explanations that each one tolerated, and in the extent to which they required all claims to be based directly or indirectly on

experience. Berkeley's stand on these two issues left him little choice between the two models. He was supported in this by his reading of Newton, who was widely acknowledged at the time as the pre-eminent scientist of the age.

Natural philosophers of the seventeenth century had begun to notice many patterns in natural phenomena which, when described, were called laws of nature. For example, the correlation between pressure, volume, and absolute temperature that is expressed in Boyle's Law is based on observation, and it describes a general pattern that applies (within limits) to all gases. In one sense, therefore, one can 'explain' changes in the volume or temperature of a given gas by showing how it conforms to the general rule expressed by Boyle's Law. Since the law in question is known by induction and based on numerous observations, there is little doubt about the certainty or experiential basis of the resulting explanation.[15]

Such an explanation still leaves unanswered the question: why do gases expand when heated? The corpuscularians of the seventeenth century initiated a revolutionary approach in response to that question. They speculated that observable bodies are composed of unobservable parts or corpuscles, and that the properties and interactions of those underlying parts produce the effects that we observe. One corollary of this, of course, is that we cannot discover anything about such unobservable corpuscles by direct observation or experiment. We are forced to speculate about them, to construct hypotheses, and then to devise strategies by which the hypotheses may be confirmed indirectly. However, no confirmatory argument can ever cure hypotheses completely of their initial uncertainty. Therefore, in this second sense, we can 'explain' natural phenomena only at the expense of tolerating hypotheses that are more or less confirmed by their success in explaining the phenomena. There is an unavoidable appearance of circularity here, as Descartes famously acknowledged in his *Discourse on Method*.[16]

When Newton published the *Mathematical Principles of Natural Philosophy* in 1687, he relied very much on the concept of gravitational attraction between bodies at a distance, and on the forces inherent in moving bodies. He presented his results as if he had merely observed

[15] This understanding of scientific explanation became almost canonical in philosophy of science in the twentieth century, and was known as deductive-nomological explanation.
[16] Discourse VI, in *Oeuvres*, VI, 76.

natural phenomena and had generalized, by induction, the results of his observations. In that way, he claimed, he stayed within the limits of the first model of explanation, and avoided the speculative and uncertain hypotheses that characterize the second model. Despite his claims, however, many of his early readers were convinced that gravity was either a speculative, hidden cause of observable effects or, even worse, an occult quality disguised as an observed property. In response to critics, Newton added a famous response in the second edition of the *Principles* (1713):

> But hitherto I have not been able to deduce the cause of these properties of gravity from phenomena and I feign no hypotheses; for whatever is not deduced from the phenomena is to be called an *hypothesis*; and hypotheses, whether metaphysical or physical, whether of occult qualities or mechanical, have no place in experimental philosophy. In this philosophy propositions are deduced from the phenomena and rendered general by induction.[17]

Newton was evidently claiming that the laws of motion on which his whole physics depended were based on observation and made general by induction, just like Boyle's Law. He could then 'explain' a wide range of natural phenomena that fell within the scope of the *Principles* by applying the laws of motion to specific phenomena. Despite the implausibility of Newton's interpretation of what he was actually doing in the *Principles*, it provided Berkeley with a launching pad for his own defence of instrumentalism.

Berkeley's empiricism made it impossible for him to accept the concept of force or gravity as referring to something that is both real and distinct from observable properties. He argued in the *Essay on Motion*:

> This word ['force'] is used ... as if it signified a quality that is known and is distinct from motion, shape, and every other sensible thing and from every affection of living things. In fact, anyone who examines the matter more closely will find that it is nothing other than an occult quality. (*DM*, 5)

Berkeley also accepted that the science of mechanics had made great progress, especially following Newton, even though the principal contributors to the science could not agree on what they meant by 'force'. He thought he could accommodate both the development of mechanics and

[17] Newton, *Principles*, General Scholium, II, 547.

the unresolved nature of forces in dynamics by endorsing Newton's account of the methodology used in the *Principles*. Accordingly, he offered the following analysis of mechanical explanation:

> Accordingly, something can be said to be explained mechanically when it is reduced to such very simple and universal principles and is shown by careful reasoning to be consistent with and related to them. For, once the laws of nature have been discovered, it is the philosopher's task to show how any phenomenon necessarily follows by the consistent observance of those laws, that is, from those principles. That is what is meant by explaining and solving a phenomenon and assigning its cause, that is, the reason why it occurs. (*DM*, 37)

This kind of instrumentalism was consistent with Berkeley's conceptual empiricism, according to which explanatory concepts are acceptable in a theory only if they can be acquired by sensory experience. It was also compatible with his unwillingness to accept hypotheses, because of the uncertainty that they entailed. Finally, this interpretation of scientific explanation had some initial plausibility when applied to Newtonian mechanics, and it had the obvious advantage of having been endorsed by Newton himself.

However, instrumentalism was much less plausible when applied to other scientific fields. Even in Berkeley's day, chemists understood their task as an attempt to identify combinations of particles, which exist below the threshold of observability and whose interactions at a micro-level explain the chemical interactions that are observable. Likewise in medicine, as illustrated in *Siris*, the alleged therapeutic effects of tar-water are explained by hypothesizing interactions between the chemical ingredients of tar-water and the unobservable bodily fluids with which they interact. It was clear that the Boyle's Law model of explanation did not apply to many of the explanatory investigations that were being undertaken by Berkeley's contemporaries. To defend instrumentalism, he had to reject such developments as not being genuinely scientific, or reinterpret them as if they conformed to his instrumentalist limitations.

In a wider context, however, the kind of conceptual empiricism imposed on mechanics and, by extension, on all scientific explanations contrasted markedly with Berkeley's willingness to introduce God as the

most plausible explanation of the consistency and apparent independence of our sensory experiences.

God

Berkeley's philosophy should not be read as a purely intellectual exercise that was unrelated to his religious faith and the doctrinal orthodoxy that made possible his appointment as a Church of Ireland bishop. He had signalled, from the beginning of his writing career, that one of his objectives was to inquire into 'the chief causes ... of atheism and irreligion' (*PHK*, title), and 'to demonstrate ... the immediate providence of a deity' (*D*, title). He also linked these objectives with a critique of the new sciences, and with philosophical implications of those sciences which he thought were inimical to Christian belief. In addressing the assumed tension between religious faith and scientific explanation, Berkeley followed a tradition that was already well established. It involved reducing scientific theories to calculating instruments, in which theoretical terms have no ontological reference, and defending a special role for religious theories as veridical accounts of reality[18] – in other words, instrumentalism for scientific theories and realism for theological theories.

Berkeley's radical empiricism made it particularly difficult to provide a satisfactory theory of the meaning of religious language. His default account of meaningful terms, which was borrowed from Locke, was that a word is meaningful if and only if it corresponds to a specific idea and that ideas, in turn, denote corresponding realities. Without ideas that are sufficiently determinate, words would be meaningless. Thus, in order to speak meaningfully about God, one must have an idea of God, and to believe in the Trinity, one must have ideas of three persons in one nature. John Toland relied on that theory to argue that it is impossible to believe in religious mysteries because, by definition, it is impossible to have an idea of something that is genuinely mysterious. Toland's critique attracted a predictable outcry from Church of Ireland theologians; however, even those theologians were not united in their defence of Christianity. Archbishop William King and Bishop Peter Browne both

[18] See, for example, Pierre Duhem, *To Save the Phenomena: An Essay on the Idea of Physical Theory from Plato to Galileo*, trans. E. Doland and C. Maschler (Chicago: University of Chicago Press, 1969).

relied on analogy to bridge the gap between the concepts that apply literally to human experience and those that apply to an incomprehensible God. For example, Browne argued, against the *Alciphron*: 'That of the real *Intrinsic* Properties and Perfections of God we cannot have the least *Direct* and *Immediate* Conception or Idea: And can therefore have no other way of conceiving them but by Resemblance or Similitude with those that are human.'[19]

Berkeley rejected both Toland's critique of mysteries and Browne's recourse to analogy. He wished to defend a literal application of some concepts to God – concepts that are known initially in their natural or human application – and to defend the meaningfulness of religious language about mysteries, such as the Trinity or the Incarnation, by recourse to an emotive theory of language. The first part of this strategy, following Descartes, claimed that we can conceive of God indirectly by amending our conception of our own minds. However, in contrast with Descartes and Locke, Berkeley did not accept that we have an idea of our own mind, because he defined ideas as 'passive' and the mind as 'active'. He claimed instead that we have a 'notion' of our minds insofar as we have an experience, by reflection, of what the activity of thinking is like. With this adjustment of terminology, he could argue that we have a notion of God that is derived from our notion of ourselves as active thinking beings. 'For all the notion I have of God is obtained by reflecting on my own soul, heightening its powers, and removing its imperfections' (*D*, 231). Without a notion that could be applied literally to God, Berkeley feared that we could not prove God's existence and thereby establish a basis for belief in revealed truths.

However, in addition to this amended Lockean view that each meaningful term is linked with a specific idea or notion, Berkeley also developed in *Alciphron* another interpretation of religious language that had been intimated in his earlier writing. According to this account, one can use religious language meaningfully without having ideas or notions that correspond to the words used, if one's purpose is to evoke appropriate

[19] *Things Divine and Supernatural Conceived by Analogy with Things Natural and Human* (London, 1733), 405. King had argued similarly in *Divine Predestination and Fore-Knowledge* (Dublin, 1709), section xiii: 'This analogical knowledge of God's nature and attributes is all we are capable of at present, and we must either be contented to know him thus, or sit down with an intire ignorance and neglect of God.'

responses or actions in listeners – for example, that they accept misfortune, or act morally in the hope of future reward or punishment.

> Thus much ... may be said of all signs: that they do not always suggest ideas signified to the mind; ... that they have other uses besides barely standing for and exhibiting ideas, such as raising proper emotions, producing certain dispositions or habits of mind, and directing our actions in pursuit of that happiness, which is the ultimate end and design, the primary spring and motive that sets rational agents at work. (*ALC*, VII, 14)[20]

This supplement to a purely referring theory of terms was intended to provide Berkeley with a buffer against Toland's objections, by denying that all the words used in Christianity must satisfy a Lockean account of meaning. However, this emotive theory presupposes that a literal interpretation of some God-talk is both necessary and available. Otherwise, it is not clear why Christians should fear God, if there is no reality corresponding to the term 'God', nor why they should modify their behaviour in anticipation of future reward or punishment if there is literally no afterlife in which these threats or promises are fulfilled.

In contrast with Berkeley, King and Browne had defended a traditional position to the effect that 'the nature of God considered in it self is ... agreed by all hands to be incomprehensible by human understanding',[21] and that any meaningful talk about God is possible only by using human concepts analogically. To hold otherwise, they thought, implied reducing God to the limitations of our understanding or, equally unacceptably, conceding the conclusions of Toland's rationalism. Berkeley's starting point was the relatively feeble 'notion' of the human mind that was derived from, and identical with, our awareness of the activity of thinking or perceiving. From this minimalist starting point, and without relying on metaphors or analogy, he claimed to acquire an idea of God that could be applied literally to God. It was not surprising that his critics within the Church of Ireland episcopate thought he had conceded the main point of Toland's critique, a concession summarized by Peter Browne as follows: that, for Berkeley, 'believing a God ... may be no more than Faith in a Monosyllable'.[22]

[20] Berkeley appealed to this use of language in *PHK*, Introduction, §20.
[21] *Divine Predestination and Fore-Knowledge*, section III.
[22] *Things Divine and Supernatural*, 539.

However, even if a secure reference to God could be secured in a charitable reading of Berkeley's theory of language, the question would re-emerge about his dissimilar treatment of the theoretical terms used in scientific explanations. It seems arbitrary to concede the ontological reference of metaphysical terms such as 'God' while denying a realist interpretation to scientific terms such as 'force'. In each case, the terms in question fail to describe an immediate experience; they are introduced, both by analogy with realities that are experienced and by reasoning, because the realities to which they refer, if they existed, would provide a plausible explanation of natural phenomena. The source of the problem seems to have been Berkeley's empiricism, which prevented him from developing a plausible account of theoretical terms in science and from accepting an analogical account of talk about God. Browne summarized the issue in the comment that Berkeley 'every where confounds the general word *Intelligible*, with *Perceptible* which is of a more particular signification'.[23] The extent to which this objection is valid is best seen from Berkeley's theory of ideas.

Ideas

By the early decades of the eighteenth century, the term 'idea' had lost many of its Platonic connotations. With the exception of Malebranche, who attempted to recover elements of the Platonic account by describing ideas as '*êtres représentatives*' – as if they were free-standing entities that represent the realities of which they are ideas – the emerging consensus was to understand ideas as acts of thought or perception that occur in the mind of a thinker or perceiver.[24] This view was endorsed by Locke, who rejected the possibility that any idea could exist apart from the activity of a mind that is involved in perceiving or thinking. It therefore made no sense, for Locke, to say that ideas could be innate, that they could be stored in a mind which is not actually thinking, or even that they could be present unconsciously in the mind. According to the *Essay*, to have an idea, and to be in the process of perceiving or thinking about something, consciously, are identical.

[23] *Things Divine and Supernatural*, 422.
[24] One defence of this position, as a Cartesian response to Malebranche, is found in Antoine Arnauld, *On True and False Ideas*, trans. S. Gaukroger (Manchester: Manchester University Press, 1990).

It is difficult to see how this account was transformed so radically into Berkeley's theory of ideas. Even a sympathetic reader may feel that the subtlety and relative brevity of the arguments deployed disguise the implausibility of the conclusions. Standard locutions about thinking or perceiving suggest a distinction between a subject, in whom these activities are occurring, and the content of their thought or the object of their perceptual experience. Berkeley asked readers to apply the term 'idea' to the content or object of a perceptual act. He summarized this suggestion in the famous epigram, that, in the case of an idea, its '*esse* is *percipi*', that is, the reality of an idea is its being perceived. A very significant further linguistic adjustment was required in order to describe ideas as 'sensible things' (*D*, 174). Once ideas were identified with sensible things, however, nothing more was required to transform sensible things into ideas and to claim that the words normally used in English to refer to external physical objects, such as 'cherry' or 'carriage', should be reinterpreted as referring to our ideas of such objects. The reaction of Hylas in the *Dialogues* acknowledges the magnitude of the leap involved: how does one get from talking about perception to the conclusion that we perceive only ideas?

One subsidiary argument, a lemma against scepticism, is Berkeley's claim that we 'immediately' perceive only our own ideas, and that those who try to infer some correlation between ideas and extra-mental realities (a correlation that, in principle, is inaccessible to our experience) have already embarked on the road to scepticism. Rather than explore that path, he radicalized his empiricist starting-point by a double limitation: we perceive only our own ideas, and the term 'ideas' applies only to what is perceived through the senses (rather than what originates from any other source).

Without an extensive survey of the literature on this topic, Berkeley may be read as alternating between the two competing attitudes to natural philosophy that were mentioned above. On one reading, he was trying simply to *describe* accurately perceptual experiences and the patterns in which they occur, rather than to *explain* them in any manner that would involve theories or hypotheses. On the second reading, he was unwittingly engaged in the kind of explanatory enterprise that he officially rejected by postulating intermediaries in the relationship between active minds and the objects of their perceptions.

If Berkeley was involved in a purely descriptive project, he could choose the language in which to present his results. The alacrity with