In considering the Molyneux Problem both Locke and Berkeley, as well as Molyneux himself, arrived at the same correct conclusion. Given the relevant principles of Locke and Berkeley, this is an odd result and it becomes even more curious on closer inspection.

There is first the question of Locke's position. In general he would undertake to give an account of experience in such a way as to coordinate the revelations of the varied senses. He does this ultimately by invoking the primary qualities and substance, the claim being that the external world is in itself perfectly well-ordered or stable, and it is only human limitations which obscure and confound the nature of things. Moreover, we are advised by him to be wary of placing excessive confidence in our faculties of sensation and to give due weight to the reality of substances and their non-illusory qualities. For there is an objective, external world which correct reasoning or real knowledge somehow resembles. This is, of course, the broad thesis of Locke's representativism; and his Essay is a sustained effort to reveal the range of human knowledge yet possible within our natural, though unfortunate, limitations.

Berkeley was rather more optimistic about human capacities. In his view limitation suggested order rather than deprivation; and substance with its primary qualities was remorselessly expelled. Yet historically it remains true that both he and Locke addressed themselves to Molyneux's question and gave the same negative reply. In effect they both denied the possibility of recognition by sight without the aid of prior visual experience. What is of interest in the present discussion is that they must have reached their respective conclusions by employing reasons that are mutually exclusive. Hence, their historical agreement about the question is fundamentally misleading, for on no account would either Locke or Berkeley have accepted the premises that led to the conclusion of the other. The following remarks are therefore concerned with showing that the Molyneux Problem served to drive a wedge between the epistemological theories of Locke and Berkeley, a result which in turn makes somewhat doubtful the commonly accepted line of the empirical succession.

In broad outline the Molyneux Problem as recorded by Locke was concerned with determining whether a man blind from birth and suddenly gaining his sight would be able to distinguish a globe from a cube by sight alone (having previously learned to distinguish them by touch), or whether he still would be obliged to touch these objects to identify them. According to Locke, Molyneux answered that such a man must first touch the globe and cube in order to distinguish them, and Locke agreed. In the Essay, Bk. II, ch. ix, par. 8, we find:

"Suppose a man born blind, and now adult, and taught by his touch to distinguish between a cube and a sphere of the same metal, and nightly of the
same bigness, so as to tell, when he felt one and the other, which is the cube, which the sphere. Suppose then the cube and sphere placed on a table, and the blind man to be made to see: *quaere*, whether by his sight, before he touched them, he could now distinguish and tell which is the globe, which the cube?" To which the acute and judicious proposer answers: "Not. For though he has obtained the experience of how a globe, how a cube, affects his touch; yet he has not yet obtained the experience, that what affects his touch so or so, must affect his sight so or so; or that a protuberant angle in the cube, that pressed his hand unequally, shall appear to his eye as it does in the cube."

This account differs in some particulars from the question as it was first put by Molyneux, Bodleian MS Locke c. 16, fol. 92r, which runs:

A Man, being born blind, and having a Globe and a Cube, nigh of the same bigness, Committed into his Hands, and being taught or Told, which is Called the Globe, and which the Cube, so as easily to distinguish them by his Touch or Feeling; Then both being taken from Him, and Laid on a Table, Let us Suppose his Sight Restored to Him; Whether he could, by his sight, and before he touch them, know which is ch the Globe and which the Cube? Or Whether he could know by his sight, before he stretched out his Hand, whether he could not Reach them, tho they were Removed 20 or 1000 feet from Him? ¹

¹ The Molyneux Problem in the original version (Bodleian Library, MS Locke c. 16, fol. 92r) was called to my attention by Professor Raymond Klibansky, McGill University, who of course is absolved of any blame attaching to subsequent interpretations of the text. The Problem was sent to Locke in Amsterdam by William Molyneux (1656–1698), philosopher, astronomer, and among other things, the first Secretary of the Royal Irish Academy. Dated July 7, 1688, the letter is directed to Locke not by name but as "the Author of the Essai Philosophique concernant L'Entendement," in care of the firm of Waesberge in Amsterdam. This indirect approach can be explained by noting that Molyneux did not know Locke at this time, that the "Essai Philosophique" which appeared in February 1688 in the *Bibliotheque Universelle* was specifically said to be "Communique" par Monsieur Locke, and that the *Bibl. Univ.* had among its publishers the house of Waesberge. (For an account of this firm's importance during the period, see R. Klibansky's Preface in *John Locke, Epistola de Tolerantia*, translated into English by J. W. Gough, Oxford, 1968, p. xxxvii.) Molyneux's letter duly was forwarded to London and eventually it did come into Locke's possession, ultimately being given to the Bodleian Library as part of the Lovelace Collection. There is however no record of this letter's being acknowledged by Locke, nor is it mentioned in his subsequent correspondence with Molyneux. The Molyneux Problem that does appear in *Some Familiar Letters*, 37–38, is the text which was sent by Molyneux on March 2, 1692/93, well after Locke's return to England. In the letter accompanying his Problem, Molyneux makes no reference to the earlier version. Locke replying, expresses his thanks for the "ingenious problem" and subsequently published it (in this later version), in the second edition of the *Essay concerning Human Understanding*, Bk. II, ch. ix, par. 8. This text was also the one quoted by Berkeley in his *Theory of Vision*, although he disagreed with Locke's interpretation (see *Philosophical Commentaries*, Entry 49, in the Luce and Jessop edition of Berkeley's *Works*) and tended to consider the question as one including the concept of motion. This view, implicit in the original form-
We shall return to a discussion of the differences between these two versions.

In any event the question for Locke basically is one of representationism and the inherent inaccessibility of the primary qualities, in so far as we can recognize them, and of substance. Having no faculties to experience either these qualities or substance, we posit them in the name of order in the external world, thereby guaranteeing its intelligibility. But with this articulation of external reality comes the issue of the real and the apparent. In particular, objects have real and apparent dimensions, and the human intellectual tragedy is that we are inescapably the agents of apparent dimensions.

Locke argues too for the primacy of touch, as opposed to sight. Inevitably therefore, the agreement of sights and touches in a given case, for example seen and felt straight edges, brings us nearer to the presumed order of things. And further, whether Locke wishes it or not, he consequently is obliged to conclude that there is some uniquely "best" or "accurate" or "true" perspective by which all others may be judged better or worse. From this vantage point, in principle at least, the revelations of the senses would indicate external objects as they are: that is, would give an accurate copy of them.

Given Locke's premises, in measuring a cube with a tape-measure presumably we could come nearest to an example of this true perspective in which sight and touch are related without distortion. Naturally we cannot hope to experience the primary qualities as such. Indeed in general we notice that our ordinary experience does tend to make selections from what apparently is spatially continuous in the external world, and evidently the privileged perspective is very rare. Nevertheless it is sufficient for the argument that Locke's concepts of substance and primary qualities, together with his claims for the primacy of touch, offer the theoretical possibility of this privileged view. For thus we can arrive at a principle by which he could have decided as he did concerning the globe and cube.

All agree—Molyneux, Locke, and Berkeley—that Molyneux's man, on suddenly being able to see, could not distinguish a globe from a cube because he never had had visual experience of these objects such that his present sensations could lend support to his prior conclusions about them. According to the Essay, however, the situation is especially forbidding.

ulation of the Problem, serves to accentuate Berkeley's divergence from Locke, but there is no record of Berkeley's knowing about the text of 1688. Historically it is not impossible that he knew the Problem well from discussions in his, and Molyneux's, college in Dublin. In any event, quite apart from the reasons why Locke did not take up the Molyneux Problem in its original form, this first version of the question retains its interest for us because it so sharply focuses attention on some basic Lockean principles which Berkeley could not simply accept.

2 Some considerable problems remain, although Locke seems not to have been troubled by them. For example, having reduced seen and felt surfaces to a non-contradictory system of numbers, we should nevertheless still be unable to decide whether the "true" nature of the cube is expressible or even thinkable in inches or centimeters, or whether a visible line is really a whole or many elements grouped in such and such a manner.
since even after having had some visual acquaintance with the globe and cube, such a man still could be systematically misled. This follows because, given Locke’s principles, not just any visual experience of a cube would suffice for making correct judgments about cubes. Were a cube for instance seen always as a group of parallelograms having angles either greater or less than 90°, one would be led to judge falsely about its purported real dimensions. And this is so because the privileged view alone correctly indicates the real dimensions of a cube, and these ultimately are grounded in its non-sensible primary qualities. In turn, it is precisely the possession of primary qualities that gives credence to claims about “real” or “true,” as opposed to “apparent” dimensions. We may conclude, therefore, that the man of Molyneux’s Problem quite simply lacked the means to relate his sensations in a way that would have enabled him to distinguish the objects’ true characteristics from among the multitudes of their false appearances.

On the evidence this seems to be the kind of argument Locke would have had to maintain. The difficulty of assigning the proper number to a given measure, even in the privileged case mentioned, is a very serious one of course, though it ought perhaps to be recalled that Locke himself included number among the primary qualities. But leaving this question aside, the above account, while being consistent with Locke’s expressed views, also accords well with the absence of any comment by him concerning the second and, I believe, the more telling part of the issue raised by Molyneux’s original statement of the problem, which is treated below.

Although it is not the purpose of this study to deal with Leibniz’s views on Molyneux’s Problem in detail, it might be noted that in his comments on this question (Nouveaux Essais, II, ix, 8) he remarks that there are no common images of sight and touch, but that a blind man and one who is paralyzed may clearly understand geometrical relations, in the sense of having “exact ideas” about them, and that these ideas may well be common, since presumably the two men are doing the same kind of geometry. Nevertheless his conclusion that the blind man would therefore be able to employ his conceptual knowledge in identifying the cube and sphere by sight alone does not seem to follow necessarily. The problem remains, and just because Molyneux’s blind man, geometer though he may be, does not know what the visual “image” of a cube or sphere looks like.

It should be mentioned that there is still considerable difference of opinion about this question. However, the argument as it has been presented is not of course to claim that Leibniz’s account is incorrect simply because it is incompatible with Berkeley’s. Leibniz is wrong on this point because his account is at variance with what actually happens in such a case. Berkeley’s complete separation of the concepts suggested by sights and touches is a commonly accepted view in contemporary psychology, borne out by experiment. But we need not appeal to any authority in order to make the point. We might, for example, note that the truth-values of de-
scriptions of visible and tangible shapes vary independently. ³

Thus, in the best Berkeleian tradition, given that the man of the Problem is stationary, how would it be possible for him to be presented with any visible object in such a way that he would be able, without any prior experience of visible objects, to distinguish the object from the background against which it appears? How could he decide where the edges would be if, in the nature of the case, though he can see the different colors, he cannot tell the edges of the object or objects in question from the edges of the incidental objects in his perceptual field? And there is no way of excluding all incidental perceptions. ⁴

It is true that Leibniz claims that at first the subject would be startled and probably would not be able to distinguish the globe from the cube, but in time his surprise would diminish, and he would then be able to apply his knowledge of geometry to advantage. However, this is hedging, since the Problem requires that the man not have any prior experience of relating sights and touches, and in time evidently this kind of experience is unavoidable.

It is well known that in the Introduction to his Principles Berkeley challenged Locke’s distinction between primary and secondary qualities. It is less well known that the concepts underlying Berkeley’s objections, both to the qualities and to the Lockean substance, can be traced from the early entries of the Philosophical Commentaries down to the closing sections of the Siris, thus covering the whole period of his adult life. ⁵

In his Berkeley’s Theory of Vision D. M. Armstrong seems not to appreciate this point, nor apparently is he aware of the implications of Berkeley’s long and consistently held concepts of notions, p. 55 n. 20 and following pages. For the former, see Berkeley’s A New Essay towards a Theory of Vision, section 133; for the latter, see the Philosophical Commentaries, Entries 11, ff. However the fullest treatment of notions is in my dissertation, Berkeley’s Theory of Notions, available in the thesis depository at the University of Michigan, Ann Arbor, Michigan.

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⁴ Note, by Armstrong’s own admission, the confusion of the cataract patients described by Von Senden, referred to in Berkeley’s Theory of Vision, 62. As to the original account of the Molyneux Problem, with which J. W. Davis is much concerned in his “The Molyneux Problem,” this Journal XXI (July 1960), it need hardly be mentioned that the MS would have been very helpful in establishing the terms of the Problem. However, the title notwithstanding, his subsequent discussion is largely beside the point of the questions here at issue.

⁵ See for example, in the Luce and Jessop edition of Berkeley’s Works, Philosophical Commentaries, I, 103–104; “Of Infinites,” IV, 235; Theory of Vision, I, 177; Three Dialogues between Hylas and Philonous, II, 231; De Motu, IV, 36; Alciphron, III, 169–172; and Siris, V, 137. In his interesting article “Berkeley and Molyneux on Retinal Images,” this Journal, XVI (July 1955), Professor Colin Turbayne discusses some relationships between the Molyneux Problem and the question of the inverted retinal image, as it is variously presented by Berkeley, especially in his Essay towards A New Theory of Vision. It would seem to me however that the historical Molyneux Problem appears earlier and runs deeper in Berkeley’s thought than Professor Turbayne’s account would indicate. It could be argued, for
Berkeley holds that the essential inaccessibility of the primary qualities renders them useless in the acquisition of knowledge; that, as Locke affirms, we knowingly experience only the secondary qualities. If then Locke's primary qualities have a character so radically different from that of secondary qualities, we can only note that what may be true of the one simply has no obvious connection with what might be true of the other. And as Berkeley further observed, to separate the two kinds of qualities in the name of clarifying sense experience is a very dubious operation.

Substance Berkeley questions both as to its patently ad hoc rôle in shoring up primary qualities and, more especially, with regard to the plausibility of mindlessness entertaining any Lockean ideas at all. In the Principles it is in fact just this concept of substance that Berkeley dismisses as self-contradictory, as well as useless for Locke's purposes.

This being Berkeley's general position, it would seem to follow that any question of the real and apparent dimensions of the globe or cube is rather beside the mark. In any event it is not credible to refer to either of these disputed solids in a way that would serve to identify them with some class of objects untainted by the possibility of being sensed. Berkeley's solution to the problem clearly must be in terms of coordinating various kinds of sensations, and this can be summarized as follows.

If there is no real object distinct from the whole collection of its various appearances for any given observer, or mind, then not only is the primacy of touch rejected, but there is no reason whatever to suppose that any perspective of an object is uniquely privileged. What can be determined about the dimensions of a cube by placing a tape against its edges and measuring them is of some interest no doubt if one intends to place a number of such cubes in a container that also exhibits angles of apparently 90°, under similar circumstances. But if in another situation, in which there were no question of containers but one of color, and the cube were to be seen as a group of green parallelograms possessing angles greater or less than 90°, then the angles that would be indicated by a protractor resting on the surfaces of the cube simply are not interesting and therefore are strictly irrelevant to the cube in question. Rather the so-called true dimensions of the cube, so the argument runs, are the ones related to the present perceptual field and the viewer's present interest in it.

For Berkeley then there are no unalterably pristine objects in the world, even in disguise. Apart from minds, there are only interpretations of experience which yield either expected or unexpected results, and reality is instance, that many of the more striking metaphysical implications of Molyneux's negative answer to his own Problem are noted by Berkeley very early in the Philosophical Commentaries. This seems evident if one distinguishes what later came to be called "notions" from "ideas," in their strict senses. See especially Entries 11, 18, 19, 20, 21, 22, 24, and of course 27 and 28.

It would be beside the main question to explore Berkeley's theory of mind in any detail. Suffice it to say that appearances or ideas are always in a dependent relationship with some mind or other.
measured in these terms. Therefore the man of the Molyneux Problem would be unable to distinguish globes and cubes, but not for the reason Locke could offer. On the contrary, the source of the problem would be couched in terms of the subject’s expectations and of his having had no previous practice in relating visual sense-experiences to the experiences known through the other senses. Therefore, on his first seeing, Molyneux’s man has a totally new kind of experience. Yet, Berkeley insists, by learning to distinguish objects by sight, through coordinating his visual and non-visual sensations, such a man will hardly be approaching nearer to the reality of things. He will, however, be far better able to order his present sense perceptions in relation to those he can more or less reasonably expect in the near future. Thus he will come to know that seeing a surface having an angle of apparently $90^\circ$ can, under certain conditions, results in his touching a surface having an angle of apparently $90^\circ$. But again, he has no reason additionally to conclude that in learning this exercise he has somehow entered into the hidden secrets of the side angular.

By underlining perceived distances, the second part of Molyneux’s question is not uninteresting departure from the classic formulation of the problem. It is in the light of this further query that Locke’s account of substance signally fails to meet the issue. The formerly blind man clearly is not here concerned, as Locke had supposed, with identifying a particular object that has in principle some permanent and objectively correct dimensions. At this point the stress now evidently falls upon the relationship between a perceiver and any object he happens to perceive. And, in this case, we are concerned with various visual sensations which can be expressed solely in terms of the measured distance between the eye of the perceiver and some visible object. Hence any question of the alleged real shape or real dimensions of a certain globe or cube is no longer to the point.

Whether Molyneux’s man or anyone else does in fact notice object X when it is exactly 20 feet in front of him need not be of great importance or interest unless, for example, object X can be correctly identified as a hungry tiger. In general, however, the interest for Molyneux’s perceiver lies in determining, by the coordination of sights and touches, what a formerly touched object, say at a distance of 1 foot, looks like when perceived from the same relatively similar groups of perspectives at a distance of 1 foot, 10 feet, 20 feet, and so with the whole range of discernibly different distances that may occur in his experience. That he has never yet supposed the visible world is not, as it were, painted on his eyes is his difficulty. Not having had the experience of coordinating colors with any of his notions of “felt” distances, he has no reason whatever to suppose that colors and a new type of distance are in any way related. Once he discovers that they are, his task, in common with everyone else’s, is to notice the lines of demarcation between colors and the formulations of objects which are most useful for his purposes. But on Berkeley’s principles, he need not suppose as well that there is some universal purpose superior to all others, or that there is some one purpose that is in fact subscribed to by the whole of humanity.
In concluding, it is apparent that Locke's doctrine of substance and qualities offers very questionable support for his correct agreement with the solution of Molyneux's Problem. Moreover his neglect of the section treating different distances would seem to point to his interest in confining his remarks to objects, which could be construed as substances supporting qualities. Evidently, for Locke, a perceiver who is restricted to visual perceptions that cannot *ex hypothesi* be emended by the primary sense of touch would have little hope of recognizing the order of external reality. Hence, there are good theoretical reasons for Locke's summary of the question as he saw fit to publish it.

In contrast Berkeley, as we have seen, undertook to deal with Molyneux's Problem in terms that would include both elements of what he and Molyneux apparently once took to be the same issue. Had he instead merely followed Locke's reasoning and accepted substance and qualities, he should now be compelled to disregard most of his works, beginning with the *Philosophical Commentaries*. But obviously this would be a useless gambit, quite apart from the subsequent bother of having to unearth a pseudo-Berkeley. Would it not therefore serve clarity better if we took due notice of the historical record? By this means we might recognize that Molyneux once parted the highroad of empiricism at a stroke, simply by inventing a man with a problem and then asking why he had it.

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