

Molyneux's Question

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I

In 1693 William Molyneux put a question to John Locke:

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 nighly 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 the sphere placed on a table, and the blind man to be made to see; *quare*, Whether by his sight, before he touched them, he could now distinguish and tell which is the globe, and which the cube? (Locke, *Essay* II, ix, 8)

The question became celebrated, attracting some of the foremost minds of the eighteenth century and beyond. However, it is far from obvious what Molyneux's question is really about. What issue, or issues, of a more general and theoretical nature, does it raise? Since this is unclear, it is also unclear whether Molyneux's question still matters today. I defend a particular conception of what the question is about. If I am right, the question does indeed still matter.

Although many candidates have been proposed as the issue Molyneux's question raises, some are of a purely psychological nature. I concentrate on two, those with the greatest philosophical significance. In contemporary terms, the two can be framed, at least provisionally, as follows:

Issue One: Is there any property that both tactual and visual experience represent?

Issue Two: If One is settled positively, do tactual and visual experience so represent that property as to support different concepts of it?

These issues, framed for properties in general, will engage with Molyneux's question if we take shape as a test case. If vision fails to represent 3-D shape, (issue One) then it will be hard for the newly sighted person to identify the seen cube on the basis of past tactual experience of it. Even if both vision and touch do represent shape, but in rather different ways (Two), familiarity with the deliverances of touch is again no guarantee of success with those of vision. Although this presents the issues as determining answers to Molyneux's question, the argument could equally run in reverse, an answer to the question showing certain positions on the issues to be untenable. For our purposes, the direction of argument is unimportant. What matters is that the issues and the question connect.

The precise nature of that connection needs spelling out below. Nonetheless, enough has already been said to set apart two other themes often given prominence here. Some have taken Molyneux's question to concern whether the subject could *reason* his way to recognizing the seen objects.¹ One way to accommodate this concern would be as a third issue:

Issue Three: If the concepts supported by touch and vision are indeed different, could a reflective subject nonetheless work out how to apply the concept from one modality on the basis of experience in the other?

This is not an issue I propose to discuss. Discussions of Three concentrate on clues, available to Molyneux's subject, as to which of the objects he sees is the cube, which the sphere. They note, for instance, that however different visual and tactual experience are, both present the sphere as free from sharp discontinuities, and the cube as exhibiting them. But of what interest are these observations? If clues are only available in the case of the cube and the sphere, the observations seem uninterestingly specific. For if Molyneux's question is to be of philosophical interest, it must surely raise some general issue about the relation between the sense modalities. But even if a sufficiently ingenious subject could always find

1 See Leibniz, *New Essays on the Human Understanding* IX, 8; Thomas Reid, *Inquiry Into the Human Mind* (1764) ch.6, XI; and Judith Jarvis Thompson, 'Molyneux's Question,' *Journal of Philosophy* 71 (1974) 637-50.

such clues, whatever the two objects before him, it is unclear what the philosophical significance of this might be.

The other theme to set aside is that of innateness. Although this has sometimes been taken as the heart of Molyneux's question,² it is better seen as a factor complicating the relation between the question and the real issues. For however we settle those issues, it is always possible to use innateness to answer the question positively. We merely postulate some innate mechanism to ensure Molyneux's subject's success. For instance, even if only touch represents 3-D shape (issue One), there will presumably be *some* difference between the visual experiences had before a cube and a sphere. If so, some innate mechanism in Molyneux's subject might on that basis trigger the application of the concepts he previously applied in touch. Similar manoeuvres guarantee a positive answer to the question despite initially unfavourable ways to settle Two and Three. Thus, while innateness certainly bears on the question, it cannot be the most fundamental issue the question raises. There simply is no one issue of 'innateness' — we need to know that is supposed to be innate, and that takes us back to one of the other issues.³

These are not the only philosophical issues Molyneux's question might be taken to raise, but they are the most serious. Almost all the historical discussion, at least of a philosophical nature, can be seen as exploring one or another of them. I locate some of that literature within the above framework, but I do not attempt to establish its comprehensiveness. My interest is not primarily historical. Nor do I attempt to answer Molyneux's question. As promised, I concentrate instead on trying to understand what the significance of an answer would be. My particular goal is to argue that part of that significance lies in Two. Not that One is any less important. The pair have equal claims to be what Molyneux's question is about, and to capture why it matters. But while One has received a great deal of attention, Two has been completely overlooked, at least as an issue in its own right. Indeed, One is so entrenched that the main problem is to argue that there is room for, and interest in, an issue distinct from it.

2 E.g., M.J. Morgan, *Molyneux's Question: Vision, Touch and the Philosophy of Perception* (Cambridge: Cambridge University Press 1977).

3 I do not mean to imply that innate mechanisms can reasonably be postulated without regard for wider empirical evidence. See Naomi Eilan, 'Molyneux's Question and the Idea of an External World' in *Spatial Representation*, N. Eilan, R. McCarthy and B. Brewer, eds. (Oxford: Blackwell 1993). The point is that for any such postulation to have definite content, it needs tying to one of the issues above.

I introduce One by suggesting that Locke himself uses Molyneux's question to raise it (section II). Locke's view is just one of many positions on One, all of which bear on Molyneux's question (section III). With One in place, I introduce Two by contrast. A good deal of work is required to prevent Two being trivialized in various ways, and to present it in its full generality (section IV). That done, it is possible to state with some precision how Two connects with Molyneux's question (section V). All this would be pointless were Two of no interest. I defend its significance by arguing that it provides the best expression of our curiosity about *the way* in which touch and vision represent things (section VI). But both the possibility of distinguishing the two issues and the importance of doing so can be further defended by considering an attempt to do without the distinction. In a famous discussion, Gareth Evans does just this. It is possible to find in his work an argument for collapsing the distinction. I suggest (section VII) that the argument fails, and that its failure illustrates the importance of the distinction Evans attempted to elide.

II

Locke's own discussion of Molyneux's question, at least on certain influential ways of reading him, ties it firmly to my issue One. Vision does not represent 3-D shape; its apparent spatial content should be understood in other terms:

When we set before our eyes a round globe, of any uniform colour ... 'tis certain, that the *Idea* thereby imprinted in our mind, is of a flat circle variously shadow'd.... (Locke *Essay* IX, 8)

Presumably, Locke would say that if we set a cube before our eyes, the 'Idea imprinted in our mind' is likewise not of that 3-D shape, but of various contiguous quadrilaterals, squares and trapeziums, depending on the orientation of the various faces of the cube to our point of view. It is controversial both how Locke understood this aspect of visual experience, and how it should be understood. We might take it to be a matter of vision's representing some property of the object seen other than 3-D shape, as did Thomas Reid; or we might construe it as a non-representational property of visual experience itself, as did Berkeley.⁴ Both these approaches have found advocates in our own day,

⁴ Reid, *Inquiry*, ch.6 XX; Berkeley, *Essay Towards a New Theory of Vision* (1709).

and both have been offered as interpretations of Locke.⁵ We need not concern ourselves with those disputes. For they leave Locke's grounds for his answer to Molyneux's question fundamentally unchanged:

But we having by use been accustomed to perceive, what kind of appearance convex bodies are wont to make in us ... the judgment presently, by an habitual custom, alters the appearances into their causes: So that from that, which truly is variety of shadow or colour, collecting the figure, it makes it pass for a mark of figure, and frames to it self the perception of a convex figure ... when the *Idea* we receive from thence, is only a plain variously colour'd.... (*Essay IX*, 8)

Whether we (or Locke) construe the circular appearance of the sphere before the eyes as the visual representation of some property of the object seen, or as a phenomenal property of the experience itself, it is to be distinguished from vision's representing the sphere's 3-D shape.⁶ Indeed, vision does not represent the latter. How, then, can we learn about the 3-D shape of things by looking? We can do so because we are accustomed to associate certain 3-D shapes with certain visual appearances. How do we find out about 3-D shapes in the first place? The answer is through touch. But the connection between the sphere's circular visual appearance and its felt three-dimensional shape has to be learned, and Molyneux's newly sighted man has not had the opportunity to acquire that learning. Thus he cannot tell that the circular appearance

5 For the Reidian view, see R. Hopkins, *Picture, Image and Experience* (Cambridge: Cambridge University Press 1998), ch. 4. For a Berkeleian approach, see C. Peacocke, *Sense and Content* (Oxford: Oxford University Press 1983), ch. 1. John Mackie in effect reads Locke as adopting the former position, in J. Mackie, *Problems from Locke* (Oxford: Clarendon Press 1976), 29-32. Martha Brandt Bolton reads him as taking the latter view, in M. Bolton, 'The Real Molyneux Question and the Basis of Locke's Answer,' in *Locke's Philosophy: Content and Context*, G.A.J. Rogers, ed. (Oxford: Clarendon Press 1994), 75-99.

6 Since the circular appearance correlates with the presence of a particular 3-D shape, there is a sense in which that appearance 'represents' sphericity. Perhaps this yields a derivative sense in which the experience itself also does so. The point is that it does not do so in the sense that is nowadays standard. That is, the experience does not, in itself, make a claim about how the world before the subject is, *viz.* that it contains something spherical. Locke may not have used 'represents' in this sense, but he was certainly *au fait* with the idea it captures. For, as I go on to explain, his thought is precisely that, since the only connection between the circular appearance and the spherical presence is that the latter standardly causes the former, Molyneux's subject will have to learn that the two are so linked. The force of denying any stronger connection lies in rejecting the idea that the experience represents, in the modern sense, 3-D shape.

is that of the spherical, as opposed to the cubic, object. As Locke notes, approvingly quoting Molyneux himself, the newly sighted subject 'has not yet attained the experience, that what affects his touch so and so, must affect his sight so or so' (Essay IX, 8). Thus, for Locke, the answer to Molyneux's question, at least as asked about 3-D shape, is 'Not.'

III

This argument for a negative answer to Molyneux's question turns on the representational powers of touch and vision. The key claim is that, although 3-D shape is represented in touch, it is not so in vision. It is this that creates the need for visual experiences to be associated with tactual perceptions of shape — the associations which Molyneux's subject crucially lacks. But if Locke's discussion of Molyneux's question turns on whether the two senses both represent shape, then the issue raised is One. For One is simply this issue generalized.

To appreciate the degree of generalization involved, consider three dimensions along which positions on One might vary. One source of variety is the property under discussion. Issue One asks whether any property is represented by both senses, but debate will naturally focus on particular candidates. Molyneux's official question concerns 3-D shape, but other candidates include two-dimensional shape, or even simpler spatial properties such as *being straight* or *lying between*. Perhaps candidates need not be spatial at all. For any property touch represents, the position denying that vision represents it will bear on One, by excluding one more candidate for that common perceptible. Of course, Molyneux's question will require reformulating for the relevant property, if it is to be answered by appeal to these positions. Yet surely such reformulations are legitimate. If Molyneux's question is to raise any philosophical issue, we must treat some of the details in the official formulation as optional. It would be strange to insist that it must concern a cube and sphere, as opposed to another pair of 3-D shapes. Why, then, think that it must deal with 3-D shape at all? Molyneux himself seems not to have done so, since he offered other formulations than the one Locke quoted.⁷

7 Compare that in Molyneux's first letter to Locke on the subject (quoted in Desiree Park, 'Locke & Berkeley on the Molyneux Problem,' *Journal of the History of Ideas* 30 [1969] 253-60).

A second source of variety is which sense is the focus of debate. Locke's scepticism was over vision's representational powers. A different kind of view is generous about vision, but sceptical about touch. This sort of account is advocated by Lotze and Von Senden.⁸ Their claim is that, while vision certainly represents spatial properties such as 3-D shape, touch does not. The tactual experience of the blind reduces to a succession of sensations of motion and contact. A third view is sceptical about the contents of both touch and vision.⁹ Issue One is framed with sufficient generality to allow positions such as these to bear on it as directly as analogous scepticisms about vision. Again, if such positions are to determine an outcome for Molyneux's question, the question may need reformulating. At the limit, we might have to reverse the roles of the senses, so that the subject is familiar with sight, but has only just acquired touch. Some figures in the historical debate discuss precisely such inversions of Molyneux's situation.¹⁰

Finally, variety might stem from the scope of scepticism about the deliverances of a sense modality. One might be sceptical only about whether the modality in question represents a particular property. This is Reid's view, for example, about vision and 3-D shape. Or one might hold a global scepticism, denying that experiences in the modality represent *any* properties. Historically, the most prominent advocate of such a position is the Berkeley of the *New Theory of Vision*. At least on a traditional reading, Berkeley holds that visual experience does not represent at all. In modern vocabulary, it has a phenomenology, but no content.¹¹ Berkeley's view, like Reid's, connects directly with Molyneux's

8 H. Lotze, *Metaphysic II* (Oxford: Clarendon Press 1887), on which see Morgan, *Molyneux's Question*, ch. 6; and M. von Senden, *Space and Sight*, P. Heath, trans. (London: Methuen 1960).

9 This is how John Heil reads Locke: 'The Molyneux Question,' *Journal for the Theory of Social Behaviour* 17 (1987) 227-41.

10 Condillac *Treatise on the Sensations* (1756), in *Philosophical Writings of Etienne Bonnot, Abbe de Condillac*, F. Philip and H. Lane, eds. (Hillsdale, NJ: Lawrence Erlbaum 1982).

11 The traditional reading is not compulsory. On one alternative, Berkeley accepts that vision represents certain properties, but denies that these are properties of the environment. All vision presents us with its colours in a quasi-spatial array. On another, he insists, consistently with his later idealism, that such patterns of colour are as independent of us as any properties we experience. However, on any reading, Berkeley holds a general position about vision which entails that the world as presented in visual experience does not share properties with the world as presented in touch. Thus, on any reading, his position — whether or not it amounts to global scepticism about vision's representational powers — addresses issue One.

original question. Indeed, both Reid and Berkeley took their scepticisms to support a negative answer.¹²

Thus many different positions bear on One. At least many of them still have their advocates today. Some contemporaries deny that vision represents any environmental properties (or perhaps any other than colour), and hence any properties also represented in touch.¹³ Others extend global scepticism to the contents of touch too.¹⁴ And disputes are not uncommon over the claims of touch and vision to represent particular properties.¹⁵ Such positions connect as directly as their historical predecessors with Molyneux's question, in one of its variants. Molyneux's question and its variants thus provide one way to test these positions. Given this, and assuming that the contemporary adoption of these positions indicates that they retain some philosophical urgency, Molyneux's question, in some form or other, remains significant qua raising issue One. However, its importance does not stop there.

IV

Suppose we settle issue One in the positive. Visual experience, like tactual, is experience of our environment, there being at least some spatial properties of our surroundings that are represented in both. Does it follow that there can only be one set of concepts of those common spatial properties? Surely it does not. For the possibility remains that visual and tactual experience represent the same properties in different ways, and in particular that they do so in such ways as to support

12 Berkeley, *New Theory*, 42; Reid *Inquiry*, ch. VI, III. Reid's position here differs from that he adopts in the text cited in n. 1. For an explanation of the discrepancy, see R. Hopkins, 'Thomas Reid on Molyneux's Question' *Pacific Philosophical Quarterly* 86 (2005) 340-64.

13 F. Jackson, *Perception — A Representative Theory* (Cambridge: Cambridge University Press 1977); J. Foster, *The Nature of Perception* (Oxford: Clarendon 2000)

14 M. Perkins, *Sensing the World* (Indianapolis: Hackett 1983)

15 For instance, for the property Reid called 'visible figure,' there is a contemporary debate over whether vision represents it, and one over whether touch does. For the former, see Peacocke, *Sense and Content*, ch. 1 and Michael Tye, 'Visual Qualia' in *The Contents of Experience*, T. Crane, ed. (Cambridge: Cambridge University Press 1992). For the latter, see D. Lopes, 'Art Media and the Sense Modalities: Tactile Pictures,' *Philosophical Quarterly* 47 (1997) 425-40, and R. Hopkins, 'Touching Pictures,' *British Journal of Aesthetics* 40 (2000) 149-67.

different concepts of those properties. Issue Two asks whether this possibility obtains.

However, if there is to be a coherent issue here, a series of difficulties must be overcome. First, something must be said about how concepts are individuated. After all, Two makes central use of the notion of concept identity. Moreover, Two only arises if One is settled in the positive, and thus only if there is a single property to form the extension of both the tactual and visual concepts. If concepts are individuated by their extensions, it already looks settled that those concepts are the same. To make space for Two, we either need to make sense of the idea that there can be distinct concepts of the same property, or to make sense of two ways of counting properties, one relevant to One, the other to Two.

I think either approach will work. However, to keep the discussion manageable, I will take the first line. Suppose we adopt a broadly Fregean approach to concepts. Concepts are the constituents of thoughts. They are individuated by the transitions between thoughts it is rational to make or resist. The limiting case of such a transition is the one on which Frege himself concentrated, the possibility of rationally adopting one attitude, such as acceptance, to a first thought, while withholding that attitude from a second. If this is possible, the thoughts are distinct, and so must differ with respect to some constituent concept. But this can be so even if the two thoughts in fact concern the same thing, or property. Thus we need to distinguish the extension of a concept from the way it presents that extension. Concepts are not individuated by extension alone. *Mode of presentation* also plays a role.¹⁶

The notion of a mode of presentation is notoriously hard to explicate further. Whatever it is, however, it involves representing the item the concept stands for, be that an individual or a property, in a particular way. The idea is that the concept presents the item under a certain aspect, and that it is this aspect which constitutes the mode of presentation. Different concepts can present the same item (particular, or property) under different aspects. Hence the possibility of failing to recognize that two of one's thoughts in fact concern the same property or thing. If concepts can differ while having the same property as their extension, then the first of my two ways to make room for issue Two is secured. And the first threat to Two, that settling One positively leaves no room for it, is sidestepped.

However, there are other difficulties in clarifying Two. That issue is whether touch and vision support the same concepts, or ones tied to one

16 For accessible exposition of these ideas, see T. Crane, 'The Nonconceptual Concept of Experience,' in Crane, *The Contents of Experience*.

modality alone. (For convenience, I will stick with the example of concepts of shape.) The idea is that Molyneux's question provides a way to test this, by asking whether or not the subject can deploy, in vision, a concept derived from touch. More particularly, the proposal is to treat this question about the subject's ability with the concept as focussing a question about the concept itself: does it apply to cubes as presented in vision?

The second difficulty is to make sense of this last question within the theory of concepts just sketched. The point of distinguishing extension from mode of presentation was to make room for the idea that Molyneux's subject's cube concept will have as its extension all cubes, including ones seen. It is already settled, then, prior to the Molyneux situation, that in one sense the subject's concept *does* apply to visually presented cubes. In what sense might it still be open whether it does?

The answer, of course, concerns modes of presentation. Visual experience of cubes might fail to fit with the mode of presentation which the subject's cube concept involves. Since modes of presentation are the aspects under which the concept represents the item it picks out, we can make sense of failure of fit between a mode of presentation and experience in a certain modality provided the latter too presents what it represents under a certain aspect, or in a certain way. But this is obviously true. Seeing a cube differs from touching one. Perhaps the difference is a matter of other properties represented. Perhaps it is a matter of perspectival structure, of the relations represented as holding between the cube and the subject. Or perhaps it is a matter of pure phenomenology, phenomenology not reducing to these or any other aspects of the experiences' contents. It does not matter which: the difference is in the ways in which the two present the property of being cubic. If so, there is a way in which vision presents cubicness. But then it could be that this way of presenting it differs from the way in which a given *concept*, via its mode of presentation, presents it. And this is all the more obviously possible if the concept in question is derived from touch. For perhaps the concept reflects the way in which tactual experience presents the property, and that we have already agreed to be different from the way in which vision does.

None of this is to settle Molyneux's question, or issue Two. It is intended merely to make sense of the idea that Molyneux's subject's cube concept might, for all that its extension is cubes *tout court*, nonetheless involve a mode of presentation which fails to fit with visual experience of cubes. Whether or not this is so is what I mean in asking whether his concept applies to cubes presented in vision. Since this is not the only meaning that phrase might bear, I will capitalise the key term: 'Applies.' And, to avoid confusion, henceforth I will talk of what a subject does with a concept as *deploying* it.

A third difficulty for Two is that concepts are essentially abstract. They prescind from the details of instances of their extension, capturing only what is common to all. Where the concept's extension is a property presented in experience, this means abstracting from the details of the presentation on a given occasion.¹⁷ The concept need not have as its extension only items with the particular features then present, and those features may be irrelevant to the mode of presentation the concept involves. There seems no obvious limit to how abstract a concept can be. Thus it is pointless to ask whether there is *some* concept Applicable to a given spatial property, whether it is presented in touch or vision, for this is obviously so. Examples would be the geometrical concept of cubicness, or of whatever spatial property is our concern. To avoid Two being trivialised in this way, we will take it to concern *perceptual* concepts, those which can only be possessed by subjects with the capacity for experiences of a certain specified kind. For the requirement that the concept be perceptual places limits on how abstract it can be.

We are not yet out of this particular wood, though. For, while on the one hand concepts can be abstract, on the other they can incorporate the details of given presentations of a property. This is so even if they are perceptual; consider the concepts *tactual cube* or *visual square*. The extensions of these concepts are limited to touched cubes and seen cubes, respectively. Presumably their respective modes of presentation reflect this limitation, presenting those extensions under aspects peculiar to the two forms of perceptual contact with cubes. Such concepts threaten Two with trivialisation from the other direction, since tactual and visual experience can hardly fail to support different concepts of a given spatial property, if these are to count. To avoid this threat, we need to consider not whether some perceptual concepts are modality-specific, but whether any are not. Issue Two is, then, whether there is any perceptual concept, the possession of which requires the subject to have experience in one modality, which is Applicable in the other. This is what is meant by talk, in Two, of experience 'supporting' concepts.

Let us try to clarify these ideas. A perceptual concept is one with a special possession condition, one requiring the subject to have, or at least to be capable of, experiences of a certain kind. The kind of experience required is one presenting the subject with the property that the concept picks out. What form of necessity does the requirement involve? Although much traditional thinking about perceptual concepts plausibly

17 The claim is not that concepts are *formed* by a process of abstraction: it is just that any concept Applying in experience does so in a way allowing for a good deal of variation in the details of the scene thereby presented.

lays claim to something stronger, I think we can make do with mere empirical necessity. For the resulting definition is still strong enough to exclude the trivializing geometrical examples above. Perhaps the capacity for *some* experience is (empirically) necessary for one to possess the geometrical concept *cube*, but it is not plausible that it need be experience, let alone cube-presenting experience, in any particular modality, or narrow set of modalities. For touch, vision, hearing, or even simple kinaesthesia might each suffice to give one the geometrical notions of *straight line*, *right angled corner*, and *3-D space*, and from those the geometrical concept *cube* could be constructed.¹⁸

Our interest is in whether any such perceptual concept, the possession condition for which concerns touch, also Applies to the presentation of the relevant property in vision. So it looks as if what we are asking is this:

Is there a concept of F-ness such that

(Possession) (1) possessing it requires, as a matter of empirical necessity, the capacity for tactual experience of F-ness,

and

(Application) (2) which Applies both to F-ness as presented in tactual experience and to F-ness as presented in visual experience?

This is almost right, but there are two complications. The first stems from a worry. If the concept Applies to visually presented Fs, why shouldn't someone lacking the capacity for tactual experience of F-ness nonetheless possess the concept, on the basis of vision alone? It is hard to rule this out conclusively, particularly given that the deficiency here need not be in tactual experience *tout court*; perhaps our subject has a special problem with tactual experience of 3-D shapes, or that of cubes in particular. So it would seem prudent to modify the possession condition so that *either* tactual *or* visual experience of F-ness will do. On the other hand, it is equally hard to guarantee that visual experience of Fs will suffice to give one the perceptual concept which Applies to them. Perhaps for psychological reasons the concept has to be acquired through tactual experience. So, since a disjunctive possession condition

18 *Prima facie* this reintroduces the issue of innateness. Innate concepts are, presumably, not perceptual in the sense defined. Thus framing Two in terms of perceptual concepts leaves it turning on the falsehood of nativism, for those concepts. However, I never claimed that innateness was irrelevant to Molyneux's question; just that its role was subsidiary to that of other issues. If innateness does enter here, it does so precisely in such a subordinate role.

does not imply its non-disjunctive variants, we'll have to include both the disjunctive and non-disjunctive versions in our formulation. In short, then, we want to know this:

Is there a concept of F-ness such that

(Possession)

either (1) possessing it requires, as a matter of empirical necessity, the capacity for tactual experience of F-ness,

or

(1*) possessing it requires, as a matter of empirical necessity, *either* the capacity for tactual *or* that for visual experience of F-ness,¹⁹

and

(Application) (2) which Applies both to F-ness as presented in tactual experience and to F-ness as presented in visual experience?

If there is such a concept, it is cross-modal, and issue Two is settled in the negative: touch and vision do not support different concepts of the property both represent.

The second complication is that we have as yet said nothing about concepts only derivable from vision. For suppose that there is no tactual concept meeting (1) or (1*), and (2). There might nonetheless be a visual concept that Applies to Fs in both touch and vision. Such a concept might, it is true, have the possession condition (1*). But equally it might not: psychological constraints might again mean that visual experience of Fs is necessary for one to possess it, for all that it also Applies to Fs presented in touch. If there were such a concept, Two should again be settled negatively.²⁰ Now, concentrating on concepts derived from touch is very natural, given Molyneux's original question and our desire to engage with it. But the possibility just described shows that a comprehensive account of what Two involves should add to the above. We are in fact asking two questions: first, as above, whether there is a concept meeting both (2) and either (1) or (1*); and second, whether there is one

19 Note the disjunction in (1*). It is obvious that there is a concept meeting (1*) and (2) if we deploy a conjunction instead. Consider the concept *tactual cube or visual cube*.

20 *Ex hypothesi* touch has failed to produce a cross-modal concept *F*, but that proves nothing more than that some perceptual concepts are mode-specific, something we already knew (think again of *tactual cube*).

meeting both (2) and either (1*) or (1†), i.e. (1) rewritten so as to mention visual experience of F-ness.

V

I now spell out how issue Two, as clarified, connects with Molyneux's question. Clearly, any connections there are will be complicated by the possible bearing on the question of issues One and Three. Knowing the answer to the question cannot alone allow us to identify which issue is thereby put to the test. Anyone who accepts that the question raises more than one issue must accept this consequence. Thus let us set the other two issues aside, for the purposes of this section. Assuming that we had independent reason to consider the question to be testing Two, how would answers to it bear on that issue?

Molyneux asked about the newly sighted subject's ability to recognize 3-D objects known through touch. If that question is to connect with Two, the following must be assumed. First, in recognizing, or failing to recognize, the cube, the subject is deploying, or not, his concept *cube*. Second, that concept is perceptual. Third, the subject's performance shows something about the concept itself. If he fails to deploy his concept, that is because it is a concept not Applicable to cubes as seen. Likewise, if he succeeds, that is because the concept does Apply to seen cubes.

Why make these assumptions? The first is uncontroversial, provided we take the question to be whether the Molyneux subject can recognize the seen objects. Some historical figures concentrated instead on whether he could distinguish them. That might be done without deploying his concepts *cube* and *sphere*. However, this approach threatens to render redundant an aspect of Molyneux's case which is surely central to the whole problem, *viz.* that the subject already knows the objects through touch. Thus it is no accident that Molyneux himself asked Locke whether the subject could 'distinguish and tell' which object was which.

The plausibility of the second assumption emerges if we remember that our notion of a perceptual concept is relatively weak. All it requires is that experiences of a certain kind be empirically necessary for possession of the relevant concept. Now, whatever it is about, Molyneux's question surely concerns the degree to which abilities acquired through the exercise of one sense transfer to the exercise of another. If, as we do, one takes the abilities in question to be conceptual, one must see Molyneux's subject as someone whose concept *cube* is derived from his tactual engagement with cubes. Of course, that a concept has a certain source does not *entail* that it could not, even as a matter of empirical necessity, have had any other; but, if there are perceptual concepts, a shape concept

in key part derived from the exercise of a single sense modality will surely number among them.

What of the third assumption? This, too, is plausible. The subject is master of his own concept, and nothing, such as failure of attention, prevents him from appreciating the world as his visual experience represents it. Moreover, the concept is one correctly deployed in (some) experience. What could be going on if he deploys, or refuses to deploy, the concept in the new experience, if not something directly reflecting that concept's nature? Of course, his situation is rather special. This is to be his first visual exposure to cubes. But it is clearly presumed that his reaction reflects his general dispositions to respond to visual experience, at least of cubes. Otherwise, Molyneux's question would not show anything general about the relations between the deliverances of the two senses. And then it is hard to see how *any* philosophical issue is raised. So focussing on the subject's first visual experience is a dramatic conceit. The question retains all its interest even as asked about the subject's performance more generally, provided he has not yet had the chance, by feeling what he sees, to correlate visual input with that from touch. But if the subject's response to his visual input reflects the best he can do, nothing stands in the way of taking it to reveal the nature of his touch-derived concept, and in particular its mode of presentation.

Given the three assumptions, how do answers to Molyneux's question bear on issue Two? Suppose that the newly sighted subject deploys his concept *cube* in vision. Since touch is the source of that concept, the only experiential conditions for its possession must be ones that tactual experience of cubes can meet. So the concept's possession condition is either (1) or (1*). And its Application condition is (2). So the subject has derived from tactual experience a perceptual concept not essentially tied to it, either in extension or in mode of presentation. This is sufficient to settle Two. We broke it into two sub-issues: whether touch supported a cross-modal concept (i.e., one meeting (2) and either (1) or (1*)), and whether vision did (i.e., one meeting (2) and either (1) or (1+)). The outcome of that first sub-issue is positive. And that is enough to settle the overall issue in the negative — touch and vision do not support different concepts of 3-D shape. For, while we have as yet not said anything about the second sub-issue, the most that could emerge is that there is a perceptual concept of cubes, derived from vision, which does not Apply to cubes touched. But this we already knew — think of our trivial example *visual cube*.

If, in contrast, Molyneux's subject does not deploy his concept, it is purely tactual. Either its mode of presentation is tied to touch, or its extension is. It does not follow that there is no cross-modal concept of shape. For one thing, we have yet to address the second sub-issue. Perhaps vision can provide a cross-modal concept, even though touch

cannot. And Molyneux's query was never going to settle that sub-issue: to do so, we would need to consider an inverted Molyneux subject, one familiar with sight, and who has just acquired touch. For another thing, perhaps the tactual experience of Molyneux's subject is unusual in some way handicapping his development of a cross-modal concept. But these possibilities now look rather *recherché*. At the least, anyone claiming that there is a suitably cross-modal concept owes an explanation of how those who possess it (we, presumably)²¹ manage to outperform the blind subject in this respect.

VI

I have carved out an issue distinct from One. However, there is little point doing this if that issue is of negligible significance. So why should we concern ourselves with Two, as defined? The idea behind Two is that what matters to Molyneux's question is not *whether* touch and vision each represent 3-D shape (or some other property), but *the way in which* they do so. That is, taking for granted that both modalities represent shape, what is the nature of their representation of it? How, if at all, do tactual and visual representation of this property differ?

Such questions express a natural and, I suspect, widely felt curiosity. Moreover, it is easy to see that Molyneux's question might provide a focus for this curiosity. Issue Two offers to make good these thoughts. For Two asks whether touch and vision represent shape in such a way as to support the same, or different, concepts of it. I have argued that Two is a coherent issue, and explained precisely how it bears on Molyneux's question. Thus, insofar as curiosity about the way in which touch and vision represent shape is found compelling, Two can inherit its appeal.

However, it may seem that Two does not provide the only, or even the most interesting, way to express that curiosity. A rival is provided by John Campbell, who suggests that what lies behind Molyneux's question is 'whether the shape perception itself has a different phenomenal character in sight than in touch.'²² The real issue does not concern concepts

21 One way in which we may outperform the blind person is that we can deploy concepts derived from combining visual experience with tactual. However, this is irrelevant to Two, which concerns what each modality can by itself provide.

22 John Campbell, 'Molyneux's Question' in *Perception, Philosophical Issues 7*, E. Villanueva, ed. (Atascadero, CA: Ridgeview 1996) 301-2. This is not Campbell's only attempt to identify the underlying issue — see below, n. 24. In what follows I refer

at all, but the phenomenology of tactual and visual experience. Perhaps this, rather than Two, is the true heir to the appeal of questions about the way in which touch and vision represent shape. To block this challenge, I argue that Campbell's issue is less straightforward than it seems and that Two provides a good way to capture what sense there is in it. I then draw a more general moral.

For Campbell, Molyneux's question concerns the phenomenology of tactual and visual experience of shape. If Molyneux's subject can recognize the visually presented cube, there is that much reason for denying that shape perception in the two modalities differs. If he can't, that is reason for supposing it to do so. But this second possibility raises a problem. How can Molyneux's subject be having visual experience as of a cube, without this fact being apparent to him? It's his experience that is in question, and *ex hypothesi* it represents a cube. Yet in one of the two outcomes Campbell considers *prima facie* possible, this aspect of his experience's content is hidden from him. What sense can we make of the idea of the content of an experience that allows this sort of opaqueness to its subject to hold?

Now, this problem is neither insoluble nor Campbell's alone. It confronts any view on which it is possible for Molyneux's subject to fail, even though his visual experience represents the cube and sphere. Thus it confronts issue Two as well. And the solution is straightforward. We merely gloss the subject's failure as one in deploying concepts. He has a concept *cube*, which he can deploy in touch, but which he is unable to deploy in vision. This leaves it quite unproblematic that the subject's visual experience nonetheless represents the cube. All that is excluded is that it does so in some way involving his tactual concept.²³

Unfortunately for Campbell, this solution costs him dearly. It entails that the only relevant differences, in the phenomenal character of tactual and visual experience, will be those linked to the concepts those modalities support. The solution to the opaqueness problem glosses Molyneux's subject's failure as one of concept deployment. But to accept this

to the issue just sketched as 'Campbell's,' but do not thereby pretend to solve the exegetical difficulties Campbell's paper presents.

23 Does this commit us to non-conceptual experiential content? Usually that is defined as content that could be enjoyed by subjects lacking the particular concepts required to capture how the world is then represented as being (see, e.g., T. Crane, 'The Nonconceptual Content of Experience'). What is denied here is stronger: that the subject's visual experience *involve* his tactual concept. That leaves open whether the content of his visual experience is dependent on his possessing particular concepts (including indeed — though this does not seem likely — the tactual concept *cube*).

gloss is also to accept a description of the relevant phenomenal differences: they are those affecting the subject's tactual concept *cube*. For it is not plausible on Campbell's view that Molyneux's subject fails for incidental reasons: for instance, because he is not attending properly; his failure, if it is to be interesting, must be unavoidable. And it is hard to see how his failure in concept deployment can be both unavoidable and due to phenomenal novelty, unless the concept he is deploying is essentially tied to the phenomenal character, here absent, of the tactual case. Nor is there any escape for Campbell by appeal to the case in which the subject succeeds in his task. If we gloss his failure as one of concept deployment, we must gloss his success in the same terms. Thus, insofar as Molyneux's question bears on it at all, the question whether touch and vision differ phenomenally in their representation of shape has become the question whether they so differ as to support different shape concepts. Campbell's issue has collapsed into Two.

Other solutions to the opacity problem may be possible. Campbell might, for instance, attempt to draw a distinction, within experience itself, somewhat analogous to Frege's distinction between sense and reference. However, working out a satisfactory version of this proposal would be a major task. Certainly the proposal goes well beyond anything Frege himself contemplated, and beyond anything adopted above. For what we are now considering is a 'mode of presentation' as a feature of experience itself, not of concepts derived from it. And, while above (IV) I drew on the natural idea that touch and vision represent their common perceptibles in different ways, Campbell now needs more than this. He needs to develop this idea so that it alone explains how experience can be opaque to its subject. That is, his explanation must hold up without the keystone of the concept-invoking solution: the idea of two representations, an experience and a concept, available to the newly sighted subject, and which he might fail to relate. So, if Campbell is to avoid the collapse of his issue into Two, he has considerable work to do.

The argument from opacity does not show that there is no interesting question for Campbell to ask. There might be phenomenal differences between tactual and visual experience of shape, beyond any differences in the respective concepts. Even if not, the former might be explanatorily more fundamental than the latter. The point is that these interesting questions about phenomenology only connect with Molyneux's question *via* issue Two. Phenomenal difference — or sameness — which fails to feed into concepts will not affect the answer to the question. And sameness or difference in the concepts deployed could, *prima facie*, be explained other than by appeal to phenomenology. So, whatever the answer to Molyneux's question, we find out nothing directly about phenomenology. We find out about Two. It requires further argument, from that starting point, to learn anything about phenomenology.

The point here promises to generalize. Campbell's difficulties are not due to focussing on phenomenology. Any expression of curiosity about how touch and vision represent their common perceptibles will suffer the same fate. Suppose we start by being so curious. We want that curiosity to engage with Molyneux's question. Our interest is in the nature (phenomenological or otherwise) of experience in the two modalities. Molyneux's question is obviously about the transfer of abilities from one modality to another. We should thus take the question to be whether tactual and visual representation of shape so differ as to allow familiarity with the one to suffice for competence with the other. This requires us to solve the opaqueness problem. The solution is to reformulate the question in terms of concepts: does the competence of Molyneux's subject with his concepts in touch secure competence with them in vision? Given our interests, the concepts we focus on had better be perceptual. For the reason why a perceptual concept requires experience for its possession is presumably that it reflects the nature of the relevant experience. We are thus left asking whether any perceptual concept from one of the two modalities can be deployed in the other. But this is just issue Two, as I have clarified it. Hence the general conclusion: Two is the best way to articulate, in such a way as to connect with Molyneux's question, curiosity concerning the way in which touch and vision represent shape.

VII

I have argued for the distinction between One and Two, and argued that that second issue matters. Yet the distinction between the two issues has been almost entirely neglected in the abundant literature on Molyneux's puzzle. Why? In the case of some authors, failure to acknowledge it is excusable. Berkeley, for instance, simply lacked the resources to draw the distinction. In the case of others, the omission looks deliberate. I close by examining the most influential modern treatment of the question, that offered by Gareth Evans.²⁴ He certainly had the resources to draw the

24 'Molyneux's Question,' in G. Evans *Collected Papers* (Oxford: Clarendon Press 1985). For examples of Evans's influence, see Eilan 'Molyneux's Question and the Idea of an External World'; and Campbell 'Molyneux's Question.' Despite the claims expounded above (VI), Campbell takes the deepest issue raised by Molyneux's question to be between 'radical externalism' and 'internalism' about shape perception (302-3). Since the internalist view is, in essence, that of Evans's B, Campbell accepts Evans's view of the lie of the land here, at least in part.

distinction. Why did he not do so? We can tease from his discussion an argument for thinking that there are not, after all, two issues here. Examining this will complete my case. I complete my defence of the distinction by rejecting the last serious threat to it. And I supplement my defence of its interest by noting the consequences of ignoring it.

Evans describes the fundamental issue behind Molyneux's question as a debate between two protagonists, B and V, whose positions are, he says, in essence those of Berkeley and Reid. When the issue between them is first introduced, it looks as if it is my issue Two. For V is characterized as denying that there could be two concepts of a single spatial property such as squareness, one yielded by touch, the other by vision:

'V simply cannot find room for *two* genuine ... concepts of a square...' (373).

And B holds the opposing view:

'The sighted adult's use of the word "square" rests upon two separable and conceptually unconnected abilities. Both of the concepts apply to arrangements of simultaneously existing objects, but nevertheless they are distinct' (374).

But Evans immediately goes on to describe a further disagreement between them. V holds that spatial properties represented in touch are also represented in vision. B in contrast, thinks 'that a subject could enjoy visual experience without regarding it as *of* a world distinct from himself at all' (374). B's position is thus, at least in part, a form of global scepticism about vision (III above). Hence B and V also disagree over issue One. Evans offers B this view about visual experience as a reason for his claim about distinct conceptual capacities, and thereby establishes some distance between the two aspects of B's position. Nonetheless, he nowhere shows any awareness that the resulting position straddles two distinct issues which might underlie Molyneux's question. And he seems oblivious to the possibility of someone, let us call him D, who exploits the more complex dialectic to hold an intermediate position. D agrees with V about the representational content of visual experience (issue One), while agreeing with B that touch and vision support distinct concepts of the represented properties (Two).

This looks like a serious oversight. But it would not be if Evans had an argument against distinguishing the two issues. Two only arises if One is settled positively, that is if touch and vision both represent some property. But perhaps the conditions under which it is possible to represent an environmental feature themselves entail that no two senses could do that while supporting distinct concepts. If so, Two cannot arise

without already being settled, and there is no issue here distinct from One. This would pose a serious threat to my entire view of Molyneux's question. Evans's Molyneux paper does contain the materials for an argument of that form.

Evans's central line of argument is as follows. Visual experience cannot support spatial concepts (as both B and V take it to do) unless it is in some way spatial. But 'the spatiality of vision is not a primitive datum...' (as B would have it) 'but something to be explained' (391). The explanation is to be in terms of the connections between the spatial content of experience and spatial behaviour. More particularly, any visual experience of spatial phenomena 'must consist in the subject's possession of spatial information specifiable in egocentric terms,' such as *right, left, up, down*, etc. (ibid.). Now, exactly parallel points apply to the tactual case: if tactual experience is to support spatial concepts, it must have spatial content, and its doing so consists in its providing information which governs spatial behaviour, via the egocentric frame of reference on space (382-90). But then the conditions for the two sorts of experience to support spatial concepts ensure that only one set of concepts will emerge:

It is a consequence of the fact that the spatial content of ... [the] perceptions must be specified in the same, egocentric, terms, that perceptions from both systems will be used to build up a unitary picture of the world, and hence that spatial concepts applicable on the basis of one mode of perception must generalize to the other. There is only one behavioural space. (390-1)²⁵

Let's call this the *one space argument*. Clearly it can't get going unless we accept the premise that the spatiality of visual experience cannot be taken as brute. However, since D agrees with V that vision's spatiality is a matter of its representing a spatial world, he need not deny that. We can thus ignore the arguments Evans offers V for that premise (396-9). What we cannot ignore is the one space argument itself. For *prima facie* it provides a conceptual argument against D's position. It suggests that, if issue One is settled positively, as D requires, then Two must also be settled, in favour of V over D. Two cannot arise without being settled, and the grounds Evans offers for this are, it seems, conceptual. There is, in effect, no room for a second issue distinct from One.

I reject this conclusion. My reply has two parts. First, the argument overlooks an important possibility. Suppose one accepts, as D can, that

25 In fact, Evans is here discussing the case of tactual and *auditory* experience. However, when he turns to vision he clearly intends to apply the same argument to the visual-tactual case.

the spatial aspect of visual and tactual experience needs explaining, and that the explanation should be in terms of their links to spatial behaviour, mediated via some egocentric frame of reference on the space around the subject. Even so, one might deny that there is just one such frame of reference involved in both tactual and visual representation of space. For we can make sense of the idea of different egocentric frames of reference on space.²⁶ For instance, while in vision objects seen are presented as spatially separated, in various ways, from the one point of view; perhaps in touch objects felt are presented as located *in the same place as* distinct parts of the body's surface.²⁷ On this view, touch does present us with objects, such as pens and cups, and presents them as located in 3-D space. So there is no return here to the scepticism about the spatial content of touch advocated by Lotze and Von Senden. But touch represents objects in a distinctive way, representing parts of them as in the same places as parts of the subject's body. Touch differs from vision in being an experience of co-location, not of separation; and in relating object parts to body parts one:one, instead of relating many different objects, or their parts, to a single point of view. In both sorts of experience objects are presented as spatially related to oneself, and hence egocentrically. But the structure within which they are so presented is radically different. There is no need to argue for these claims here. It suffices that the possibilities described are coherent. That is enough to show that it is possible for tactual and visual experience both to represent space, while doing so in ways which involve different frames of reference. This possibility is sufficient to block the move from the premises of the one space argument to its conclusion.

Of course, what is possible may not be actual. Touch and vision might involve different frames of reference, but do they? This brings me to the second part of my reply. In raising this question, the argument shows how the debate between D and V, and thus the discussion of issue Two, might proceed. Answering that question will involve various considerations. In favour of difference, one might appeal to the differing phenomenologies of touch and vision.²⁸ Against, one might consider the evolutionary benefits of ensuring that a single frame of reference oper-

26 For defence, and some examples, see J. Campell, *Past, Space and Self* (Cambridge, MA: The MIT Press 1995), ch. 1.

27 R. Hopkins, *Picture, Image and Experience* (Cambridge: Cambridge University Press 1998), ch. 7

28 See, as well as the last citation, M.G.F. Martin, 'Sight and Touch' in Crane, ed., *The Contents of Experience*.

ates for every sensory channel available to a given creature. And one might appeal to empirical evidence for the sorts of frames of reference touch and vision provide, for instance evidence concerning the frames available to those who lack sight.²⁹ These considerations are of varying force and nature. Some are clearly empirical. All involve moving beyond the conceptual considerations Evans sought to bring to bear. But, if so, then, whatever the force of these new considerations, and whichever position (D's or V's) they support, they hardly show that there is no second issue here. If conceptual considerations settle Two, given One, then Two is not distinct from it. If other considerations settle Two, then the issues are distinct. Thus investigating the precise force of the one-space argument, drawing on the considerations just outlined, we would no longer be pursuing the project of this paper, that of framing the issues Molyneux's question raises; but settling issues previously framed, and answering the question itself.

In concluding, let us return to that project. The last threat to the framework I have proposed can be set aside. There are no grounds, not even of the kind Evans (may have) found tempting, for denying that One and Two are distinct. But the discussion of Evans also illustrates my other main claim, that the distinction between One and Two matters. It is insufficient, to establish V's view, to argue against B's. For one can abandon B's position on One without adopting V's on Two: those are the defining features of D's view. Evans's discussion falls foul of exactly this possibility. Some of his arguments count against B without engaging with D at all. And his one space argument, while it bites against both, invites a response from D which is not available to B. For B, since he denies that vision represents the environment, cannot block the argument by appeal to differing frames of reference on egocentric space, one for sight, the other for touch; and cannot engage in the debate that appeal initiates. So, given the tenability of the distinction between One and Two, Evans cannot ignore it, since it is essential to understanding the dialectical import of his own arguments. I think it highly plausible that what holds for his discussion of Molyneux's question will hold for everyone's. Of course, one can pursue One without raising the question of concepts at all. That is what Locke, for instance, did (II). But I have argued that settling that issue in the positive leaves another open (IV, VII), and that that second issue is of independent interest (VI). Evans's fate illustrates the difficulty of collapsing that second issue back into the first. But it also

29 See, for instance, J.M. Kennedy, *Drawing and the Blind* (London: Yale University Press 1993). For some discussion of the bearing of this work on Molyneux's question see Lopes 'Art Media and the Sense Modalities.'

shows that anyone wanting to understand the philosophical significance of Molyneux's question would do well to seek that significance in the two issues I have described.³⁰

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