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MOLYNEUX'S QUESTION AND THE INDIVIDUATION OF PERCEPTUAL CONCEPTS

ABSTRACT. Molyneux's Question, that is, "Suppose a man born blind, and now adult, and taught by his touch to distinguish between a cube and a sphere... and the blind man 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", was discussed by many theorists in the 17th and 18th centuries, and has recently been addressed by contemporary philosophers interested in the nature, and identity conditions, of perceptual concepts. My main concern in this paper is to argue – against Evans, Campbell, and a number of other contemporary philosophers – that a test of the sort Molyneux envisioned, at least if carefully designed and administered, can indeed be a crucial experiment for the claim that we deploy the same perceptual concepts when identifying shapes by sight and by touch. I will explore some implications of this argument for a theory of recognitional concepts. And I'll try to trace out some unhappy consequences of various alternative views.

1. PERCEPTUAL CONCEPTS OF SHAPE

I'm now looking at a soccer ball and a Nintendo Game Cube, and thus am having a perceptual experience of a sphere and a cube. My friend, blind from birth, (who's helping me with the cleaning) is touching these items, and is thus having a perceptual experience of the same things. Not only are we perceiving the same items, but in doing so we apply the terms 'sphere' and 'cube', respectively, to them. Are we, in doing so, applying the same, or different, perceptual concepts?

Let me clarify the question. First of all, my friend and I share at least a rudimentary knowledge of geometry, and thus may be thought to share at least some "*theoretical*" or *discursive* concepts of these shapes (e.g. *3D figure with 6 equal faces*, etc.); that is, concepts that play a certain role in

reasoning and inference.¹ My question, however, is whether we share *perceptual* or *recognitional* concepts of spheres and cubes, concepts used by perceivers to recognize or reidentify the shapes in question, on the basis of perception alone.²

I'm also making a couple of assumptions (though they'll be revisited later). First, though it's clear that there are *experiential* differences between my friend and me when we identify objects with various shapes, I'm assuming that this does not guarantee that our perceptual *concepts* of those shapes are different.³ Second, I'm assuming that though our perceptual concepts of shape represent a single set of spatial *properties*⁴ (cube, square, sphere, circle, etc.), this does not guarantee that shape *concepts* derived from vision and from touch are the same (contrary to the claims of certain "radical externalists"). In short, I'm assuming that nothing about the nature of visual and tactile experiences, or the nature of spatial properties, closes the question of whether sight and touch afford two, or one common, set of perceptual or recognitional concepts of shape.

It may seem obvious, however, that the answer to this question must be "one". After all, my blind-from-birth friend can identify which objects in the world are spheres and cubes as well as I can (as long as she is permitted to touch them), and will classify them, on purely perceptual grounds, just as I do. Moreover, I, who can see as well as feel, move easily between sight and touch in identifying items like soccer balls and Game Cubes as (respectively) spheres and cubes.⁵

So far, however, these commonalities do not determine whether we are operating with the same perceptual concepts. My blind-from-birth friend's tactual discriminations of spheres and cubes may indeed match my visual discriminations of these shapes, but we may nonetheless be deploying different perceptual concepts of those properties. (Compare, for example, the property of *being rotten*; it seems clear that one might be able to distinguish rotten from non-rotten fruit equally well by sight and touch, but here it's plausible to think we have two perceptual concepts of a single property.)

And perhaps my ease in moving from touch to sight in identifying spheres and cubes is due not to any real commonality between perceptual concepts acquired by touch and by sight, but by a long though contingent association between them.

It's not hard, thus, to imagine a crucial experiment that would help decide this issue: suppose my blind-from-birth friend were to undergo an operation that restores her sight; would she be able to identify the soccer ball as a sphere and the Game Cube as a cube just by looking at them? If so – and if this is indeed a crucial experiment to determine the scope of one's perceptual concepts – then she may be taken to have deployed the *same* perceptual concepts as she used when blind in identifying these objects; that is, her perceptual concepts of sphere and cube may be considered to be *amodal*.

This, of course, is a version of Molyneux's Question, which so exercised Locke and Berkeley and other 17th- and 18th-century theorists. As Berkeley quotes from Locke's *Essay*:

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 and which the sphere. Suppose then the cube and sphere placed on a table, and the blind man 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."⁶

Molyneux, Locke, and Berkeley all conjectured that the man born blind would *not* be able to make these identifications "with certainty", and thus that we have two sets of perceptual concepts of shape: one tied to sight, and one to touch.⁷ But what should be said about perceptual concepts if, contrary to this conjecture, the man born blind (MBB) *can* make the identifications in the test envisioned by Molyneux? A number of Molyneux's contemporaries, among them Leibniz (1765/1982), argued that this is the more plausible hypothesis,⁸ as do many philosophers writing today who address the question (e.g. Gareth Evans and John Campbell, in recent papers on the subject).⁹ But there's controversy among them about whether the MBB's success on such a test would be sufficient to

show that we have a single, amodal, set of perceptual concepts of shape.¹⁰

My main concern in this paper is to address this question. I'll argue – against Evans, Campbell, and a number of other contemporary philosophers – that a test of the sort Molyneux envisioned, at least if carefully designed and administered, can indeed be a crucial experiment for the claim that we deploy the same perceptual concepts when identifying shapes by sight and by touch. And I'll try to trace out some unhappy consequences of various alternative views.

My interest in this question springs from a more general interest in *recognitional concepts*, which I'll understand to include not only concepts applied on the basis of perceptual experience, but also those applied on the basis of *introspection*. More precisely, it springs from an interest in (what have come to be called) *pure* recognitional (or *recognitional–demonstrative*) concepts: concepts with no discursive elements, characterized solely as dispositions of a subject to classify or identify, from some particular perceptual or introspective perspective, items as “that again” or “another one of those”. Pure recognitional concepts are supposed to get their references on the model of type-demonstratives: that is, they are supposed to denote “directly” – without need for any mediating “mode of presentation” – whatever properties (the bulk of) the items that trigger those dispositions have in common.

To be sure, there are recognitional concepts – concepts applied on the basis of perception or introspection – which are partially demonstrative and partially discursive (e.g. “closed plane figure with four sides that look like *that*”), and which get their references in a more complicated way. But there has recently been a lot of attention, in the philosophy of mind, to pure recognitional concepts of *experience*, since it seems that they can figure in an explanation, compatible with physicalism, of why it seems that we learn something new when we have new experiences, or why it seems that the objects of introspection couldn't possibly be brain states: namely, that

introspection affords a set of special, irreducible, perspectival concepts of our brain states, which are recognitional—demonstrative in the way I've just described.¹¹ Or so many have argued.

It's hard to tell, however, whether this view is plausible until we get clearer about what it is to have pure recognitional concepts, how they are to be individuated, and how they put us *en rapport* with the properties they purport to represent. Though there are important differences between perceptual concepts of shape and pure recognitional concepts of experience, I believe that the disputes about Molyneux's Question between the 17th and 18th-century theorists, and also our contemporaries, can shed some light upon these issues.¹²

So, on to Molyneux, but one thing before we start: Molyneux's Question, as posed by the early moderns, concerned a man born blind's ability to identify *cubes and spheres* on the basis of his touch-derived concepts, but I'll follow some more recent theorists, e.g. Evans, in considering the question to be whether the MBB can identify *squares and circles*. This allows us to ignore any special problems that may arise for the identification of 3D objects that don't reduce to the general question of whether there can be amodal perception of spatial properties.¹³ I don't think this will affect the discussion of that general question.

On, then, to the Question itself. As I've already mentioned, Locke, Molyneux, and Berkeley all conjecture that the man born blind would *not* be able to identify the cube and the sphere in the test situation envisioned by Molyneux — or at least not “*with certainty*”. And Berkeley, at least, would make the same conjecture about the MBB's ability to identify the square and the circle as well. So, he regards the ability of the MBB to pass such a test as *necessary* for the amodality of perceptual spatial concepts.

Our question, though, is whether it is also *sufficient*. In NTV (133), Berkeley insists that the MBB be able to identify the cube and the sphere not only with certainty, but *immediately*; that is, “as soon as he saw them”. But why, we may

wonder, should this be required? Why not hold, as did Leibniz,¹⁴ that one can conclude that perceptual concepts of space are amodal if the man born blind can *eventually* make the identifications, as long as this is merely a matter of “applying rational principles to the sensory knowledge which he has already acquired by touch” (NE 13).

It’s reasonable to think that Berkeley is concerned with *temporal* immediacy only because he takes it to be a reliable sign of *epistemic* immediacy, that is, of an identification’s being made without the aid of inference or association, but solely by the subject’s recognizing that the item being perceived is of a kind that has been perceived before. That is, it may be that Berkeley thinks that if we don’t insist that the MBB identify the figures as soon as he sees them, we leave room for cheating. My first concern, thus, is to try to identify what sort of cheating could be possible in the test situation as I described it, and whether the test can be revised to prevent it. If so, then we can disengage epistemic from temporal immediacy, and drop the latter as a requirement for passing the test.

2. TWEAKING THE TEST

Suppose, then, that the MBB takes awhile to identify the circle and the square, but eventually succeeds. It may be that he is merely using “rational principles” to apply his touch-derived recognitional concepts to the figures he now sees; that is, it may be that he needs the time merely to examine the figures to determine whether they look to have the features required for being a circle or a square. But it could be, instead, that he’s using these rational principles in service of some sort of *guesswork or inference*, in which case his identification would lack the epistemic immediacy required for the application of previously acquired recognitional concepts. Let’s consider some possibilities.

Given the set up of the test situation, as Molyneux describes it, we can be sure that the MBB isn’t able to touch

the figures he sees. It's also pretty clear that he hasn't been permitted both to touch and see any *other* geometrical figures (e.g. triangles, ovals), since if he had, he might have absorbed enough of a correlation to permit him to *infer*, in the Molyneux situation, which object was the circle and which the square. Finally, we can assume the MBB hasn't previously been shown some other figures (without being permitted to touch them), and *told* their identity, since, if he had, then he could (perhaps) connect his memory of the relevant tangible items with his current perception of their visible counterparts, and thereby have an empirical basis for distinguishing the circle from the square.¹⁵

Still, one might worry, in some situations the newly sighted man could be making a guess about the identity of the figures based on *other* sorts of background information. When Leibniz discusses Molyneux's Question, for example, he assumes that the MBB's task "is merely a problem of telling which [of the cube and sphere] is which, and that the blind man knows that the two shaped bodies which he has to discern are before him, and thus that each of the appearances which he sees is either that of the cube or that of the sphere."¹⁶ But one could control for this, and also for the possibility that the MBB is using *implicit* information about the set-up of the test to achieve the same purpose, such as the supposition that he will be tested on simple, clearly differentiated, figures which the experimenters are sure he has previously touched, thus narrowing down the possible candidates.¹⁷

But even if there is a foolproof method to rule out guesswork of this sort, there's another kind of guesswork that could figure into the MBB's identification of the circle and the square if he's given time to "work things out". It may be plausible to think that there are recognitional concepts of certain *structural* features of circles and squares that are uncontroversially amodal, such as *continuities* and *discontinuities*, or *number* of discontinuous parts. If so, then the MBB might be using information about these structural features of the items he sees to work out that one of them is a figure with four

equal discontinuous sides, and, given certain assumptions about the experimenters' intentions, guess that one is a square, even though these structural features *underdetermine* the identity of the figures in question. After all, there are shapes other than squares that are closed plane figures with four equal discontinuous sides – for example, a “square” with concave arcs as sides¹⁸ – and a newly sighted person making similar assumptions about the intentions of the experimenters might identify such a figure, *incorrectly*, as a square. Given this, it seems that Berkeley would be justified in complaining that the success of the man born blind in the original situation should not count as identifying the square by sight alone.

This seems to be the point of the passage (in NTV 141) in which Berkeley addresses himself to the objection that “surely a tangible square is liker to a visible square than a visible circle: it has four angles, and as many sides; so also has the visible square – but the visible circle has no such thing...”. Berkeley concurs, but continues, “it will not hence follow that any visible figure is like unto or of the same species with it corresponding tangible figure – unless it be also shown that not only the number, but also the kind of the parts be the same in both.”¹⁹

It seems, however, that a simple revision of our recognitional test could allay these worries: test the MBB on a different set of figures. Test him, for example, not on the circle and square, but on the square and square-like figure. If he identifies the square correctly in this situation, it seems, he'd be going on his recognition of squares, even if it takes some time to make the identification.²⁰ Or test him, instead, directly on the *components* of squares and circles: on the lines and curves, or arcs and angles, themselves. Now here one might expect his identifications to be temporally immediate if the concepts are amodal, since lines and curves are so simple that they can be recognized without having to work *anything* out. But who knows: the MBB may have to take some time to make the identifications even here; what's physically simple

may not be what's psychologically basic.²¹ The important thing is to remove the opportunity for the MBB, in a Molyneux-style test, to be doing anything other than applying previously acquired perceptual concepts to the figures that he sees without touching – and in the situations I just described, it's hard to see where illegitimate inference or guesswork could be coming in.

In short, though I've made, or at least made more explicit, various addenda to the test Molyneux envisioned, I endorse the crucial kernel of what Molyneux proposed, namely, that what determines whether the MBB can bring some visual shape-experience under a touch-derived recognitional concept of that shape is a matter of whether, under certain controlled conditions, he's inclined to classify it under that concept. Success under these conditions, I propose, can comfortably be regarded as necessary – and sufficient – for those concepts to be amodal.

This, however, may seem too quick, since Molyneux, Locke, and Berkeley all agree that a positive answer to Molyneux's Question requires that the MBB make his identifications "*with certainty*" – and it may be that the correct identification of the basic shapes (whatever they turn out to be) under suitably constrained conditions doesn't guarantee that *this* condition has been met. It's important, thus, to address a further question about the MBB in the Molyneux scenario, namely, what exactly is required to identify the figures in question with certainty?

3. MUST THE FIGURES BE IDENTIFIED "WITH CERTAINTY" – AND WHAT DOES THIS MEAN?

To identify the square and the circle by sight "*with certainty*", is it merely that the MBB must make the identifications without the sort of guessing that the set-up of the test was attempting to avoid? If so, then making the correct identifications in the tests that I've described would by itself count as making them "with certainty". On the other hand, the "certainty" condition may express a further epistemic

requirement on the transition from tactual to visual identification of these shapes, such as that there be some recognized *a priori link or conceptual connection* between one's touch-based and sight-based representations of the relevant shapes, or, as it's sometimes expressed, that the transition be "*rational*". This, it seems, is what contemporary philosophers who discuss Molyneux's Question take to be required.

For example, Gareth Evans, in considering Molyneux's Question, argues that though the MBB's cross-modal identification of the figures is *necessary* for the amodality of the concepts, it isn't *sufficient*, since even the immediate identification of the circle and square in a tightly controlled recognitional test is compatible with there being distinct visual and tactual concepts of shape with an innately programmed, or hard-wired, link between them. He writes, "[A theorist with Berkeleyan proclivities] holds that there is no *conceptual* connection between *tangible square* and *visible square*, but this leaves it open how the move from the visible to the tangible is made. Berkeley held that we *learn* the connection by experience, but an alternative hypothesis is that the connection is pre-programmed into the brain...It follows from this observation that Molyneux's Question is not in fact a crucial experiment [for the amodality of spatial concepts]" (1985, pp. 377–8).

For Evans, thus, the MBB's identifications would display a "rational" transition between touch and sight only if he *recognizes a conceptual connection between the contents of his tactual and visual experiences of that shape*.²² Another way to put it, perhaps, is that the MBB must be able not just to respond to the visible square in certain characteristic "square appropriate" ways, but to experience it *as* a square. To evaluate this suggestion, it's crucial to be clear about what's involved in recognizing a conceptual connection between visual and tactual experiences of shape, or what it is to experience something *as* a shape of a certain kind.

Now, it's easy to see how there could be such a conceptual connection (and what the recognition of this amounts to) if the perceptual concepts to be applied to the experiences are

at least partially *discursive*: that is, if the man born blind concept of a square includes the concept of a closed rectangular figure with four equal sides along with the disposition to identify other perceived squares as 'another one of those'. In this case, the MBB's transition from touch to sight could be seen as rational if he recognizes that the square perceived by sight *satisfies the same description* (e.g. "closed rectangular figure with four equal sides") as the others he has previously identified by touch, or – perhaps equivalently – if he can be regarded as recognizing that what he now sees and what he has previously felt are, indifferently, closed rectangular figures with four equal sides. In this case he could be seen as recognizing a "match", and thus a conceptual connection, between the discursive elements of his touch-derived concept of a square and his current visual representation.²³

But if the concepts in question are pure recognitional-demonstrative concepts – that is, concepts with no discursive elements, and which pick out items *solely* by means of one's disposition to classify objects as "another one of those" – it's not clear what a rational conceptual connection between one's sight- and touch-based representations would amount to, other than that the subject does in fact have this disposition. And if this is indeed what is tapped in a Molyneux test designed to rule out inference, association, or guesswork, then cross-modal transfer in the right sort of Molyneux test should be sufficient for the MBB to be deploying a single (pure) recognitional–demonstrative concept in identifying the square by sight and by touch.²⁴

But, one might wonder, can this really be so? Couldn't I have *rational grounds for doubting* whether some thing I'm now perceiving is really the same kind as a class of things I've perceived before, even in the face of a disposition to classify them as members of the same kind in a suitably constrained Molyneux test scenario? And wouldn't this show that I couldn't, after all, be applying a single, common concept to the items in question, but rather inferring or guessing that they are of the same kind, on the basis of perceiving various

of their other properties?²⁵ In the case of recognitional concepts, one can answer “yes” to the first question (“Can I rationally doubt?”) and “no” to the second (“Does this mean I’m not applying a common concept?”).

This becomes evident when we think about what might shake the conviction of a subject who is inclined to identify an object as one of a certain kind in a well-constructed Molyneux test designed to rule out guesswork and association. Consider, once again, the MBB, being tested on the circle and the square, and suppose that he identifies the square correctly, on the basis of his inclination to class that figure as one of the same kind as those he has previously identified as square by touch.

Suppose, too, that this inclination prompts him to identify all and only squares as squares, when viewed under similar conditions. Still, there’s room for the MBB to have rational grounds, of some sort, for doubt about his identifications. If, for example, he’s given reason to think that he’s seeing the figure from too far away to judge its shape accurately, or that there’s some kind of environmental haze that’s distorting his perception, then he has rational grounds for doubting that the object he’s seeing is (of the kind he routinely identified by touch as) square. This doubt, however, seems best described as doubt about whether the way this figure looks is the way actual squares would look under good conditions of observation, and not about whether an object that looks this way, under good conditions, really must be square. A sighted person who has frequently identified figures by sight could share these doubts, which in both cases can be assuaged by informing the subject that these are indeed good conditions for observing the shapes of geometrical figures.

Other opportunities for “rational doubt” can be handled in similar ways. For example, the experimenters could tell the MBB that the operation to restore his sight relies on new technology that sometimes has the side effect of making straight lines look shorter (or curved lines look straighter) when they are displayed horizontally. In this case, too, the MBB would

have rational grounds to doubt whether the item he's seeing is a square. But here too he would be doubting whether, given the possibility of abnormal conditions of observation due to his perceptual mechanisms (rather than the environment), what *looks* like a square really is one. In both cases, he acknowledges that despite his stable inclination to classify his new experience as an experience of a square – that is, despite the fact that this newly perceived item *seems* to fall under a certain recognitional–demonstrative concept – he could nonetheless, for some arcane reason, be wrong. But these are different from worries about whether some figure other than a square, observed in good conditions, would look like this, and those are the only doubts that should undermine the claim that the MBB is applying the recognitional concept of square that he previously acquired by touch.

There are cases, however, which may seem to undermine my suggestion that passing a (well-constrained) Molyneux test is sufficient for having an amodal pure recognitional concept of a perceivable property.²⁶ Suppose our man born blind learns, when blind, to distinguish between hot and cold coals by touch. Then, after the operation that restores his sight, he identifies a glowing red coal as hot, and a grayish-black one as cold. Here too, the MBB may have a stable disposition to identify these items by sight, in a well-constrained Molyneux test, on the basis of prior tactual experience. But here, it doesn't seem that he could be applying the *same concept* when identifying the hot coal by touch and by sight. So here are cases in which passing the Molyneux test would not be necessary and sufficient for possessing a unified recognitional concept.

Let's reflect a bit, however, about what makes this transition seem less "rational" – or, in any case, more problematic – than the transition between the tactual and visual experiences of a square. One worry might be that it seems to proceed indirectly: the man born blind isn't really identifying temperature by touch and sight, but is identifying *temperature* by touch, and *color* by sight, and making some association between them.

Indeed, not only are the temperature and color of the coal different properties, but color can't be perceived by touch at all. So the only possible explanation of how these cross-modal transfers could occur would be the presence of a hard-wired link between those distinctive visual and tactual experiences (explained in turn, perhaps, by the fact that the properties these experiences represent are highly correlated).

I agree that any link between the visual perception of red and the tactual perception of heat must be a product of learned (or hard-wired) association, for the reasons given above. But the case as described involves the recognition of two distinct properties, and so should not be considered to be a counterexample to my claim that the disposition to reidentify a *single property* as "that again" cross-modally will count as a (sufficiently) rational transition if the disposition is manifested in a well-constrained Molyneux test.

Still, similar questions can be raised even if we make it clear that it's the very same property that's being identified by touch and by sight. Suppose that a man born blind, accustomed to recognizing the heat of hot coals by touch, is able to identify that very property — heat — by sight. That is, the man born blind won't classify cool red things, by sight, as "another one of those", but will display a robust inclination to identify other things that look *just that way* (that perhaps ineffable reddish way that hot coals look) as having the same property he's previously identified by touch. In this case too, one might argue, it doesn't seem that the link between tactual and visual recognition of the heat of the coal is as "rational" as the visual and tactual recognition of its shape. Here too, it seems that the link between the way the hot coal feels and the way it looks is best explained as the product of some hard-wired association (selected for its obvious evolutionary advantages). And if this is so, it stands as a true counterexample to my claim.

But there still is — or may be — an important difference between this case and the case of the MBB's identification of the square by sight. I was assuming, in the latter case, that the MBB's recognitional abilities are not confined only

to the recognition of the square, but would be apparent in the identification of other (relatively) simple 2D shapes as well: circles, ovals, triangles. That is, most discussions of Molyneux's Question assume a certain *systematicity* in the MBB's recognitional capacities, and I was assuming this as well. But suppose we demand an equivalent systematicity in his identification of temperature by sight. That is, suppose that, for the MBB's recognition of the hot coal by sight to count as the application of the same concept he deployed in identifying hot coals by touch, he must be able to make cross-modal identifications of *other* degrees of heat as well. This could be tested by asking him to identify, by sight, not just which of two coals is hot (vs. cold), but which of two coals heated up to different degrees is the hotter (vs. the cooler). If our MBB can do this, I suggest,²⁷ then he has as good an amodal recognitional concept of heat as a MBB who passes a Molyneux test on circles and squares has an amodal recognitional concept of spatial figures.²⁸

The verdict, then, on what it means to say that the MBB's possession of amodal perceptual concepts of shape requires him to be able to identify spatial figures "with certainty" is that it depends on the nature of these perceptual concepts. If they are pure recognitional concepts, then questions about the "rationality" of cross-modal transfer must be replaced by questions about whether his identification is made in the right sort of Molyneux test, one sufficiently constrained to rule out associations, inferences, or any other clues extraneous to his disposition to recognize the items he sees as "another one of those" he has previously felt. This gives proper pride of place to the test itself, since passing the right sort of test will be necessary and sufficient for possessing an amodal pure recognitional concept.

4. SPATIAL CONCEPTS AND RATIONAL TRANSITION: ANOTHER ACCOUNT

In contrast to the view I just endorsed, John Campbell (1996) agrees with Evans that the application of a common recognitional concept to figures felt and seen must be considered as a “rational transition” in a stronger sense – even when the concepts in question are non-discursive, or, as he puts it, involve a “primitive consciousness” of shape. But Campbell has a unique explanation of how this can occur, namely, only if *radical externalism* is true of our experiences of spatial properties. Radical externalism, as Campbell describes it, maintains not merely that tactual and visual experiences of a square both represent the property *squareness*, but also that sameness or difference in represented properties determines sameness or difference in whichever phenomenal features of the experiences of those properties provide rational grounds for concept-application.²⁹

On this account, the MBB should be able to determine that his touch-acquired recognitional concept applies to what he’s currently perceiving by sight just as a sighted person determines that her sight-derived concept applies to what she’s currently perceiving by sight, namely, by reflecting upon these common phenomenal features of the respective experiences. Thus the MBB’s identification of a shape by sight in a Molyneux situation can count as a “transparent” or rational extension of that concept. Indeed, Campbell takes radical externalism about perceptual experience to provide the only good explanation of how, if the perception of shape involves “primitive consciousness”, the MBB could identify the square and the circle by sight.

Critics of Campbell have raised questions about the scope of his radical externalism, since it seems that there are many cases in which we would not expect cross-modal transfer of a recognitional concept to occur (for example, the property of rottenness). It’s not intuitively obvious, that is, that a man born blind who can reliably identify rotten apples by touch could, solely on that basis, identify them by sight alone.³⁰

Perhaps, though, there's something special about *spatial* concepts that suggests that cross-modal transfer between sight and touch, if it occurs, would be rational, *even for pure, non-discursive recognitional concepts of shape* (whether they are of squares and circles or lines and arcs).³¹ It's unclear, however, what the grounds for this claim could be. Obviously, it can't be just a matter of a subject's being recognitionally *en rapport* with the property in question, since this wouldn't distinguish spatial concepts from other recognitional concepts. My hypothesis is that Campbell has succumbed to the temptation to think that, unlike perceptual experiences of kinds such as skunks or states such as rottenness, perceptual experiences of shape, whether visual or tactual, display to our scrutiny the *nature or essence* of those properties themselves (and that we recognize them as such). If this were so, we could expect every occasion of cross-modal transfer of spatial concepts, even the purely recognitional–demonstrative ones, to proceed on rational, a priori, grounds.

But this leads to two problems. First, suppose there is a set of properties for which this thesis is true; that is, suppose there are cases in which having experiences that represent the same property guarantees, at least in principle, that one can determine a priori that this is so. Then, (modus tollens) if under these conditions subjects *can't* determine a priori that they are *en rapport* with the same property, their experiences must represent different properties, and thus anyone who fails to identify the figures in the Molyneux test would have grounds for believing that the shape properties identified by touch and by sight are distinct. This view would be congenial to Berkeley, who argued that the MBB's inability to pass the Molyneux test was evidence not only that there was no common, amodal, set of spatial concepts, but that visual and tactual experiences put us in contact with different *properties*. But it shouldn't be congenial for anyone who takes shape properties to comprise a single domain of mind-independent entities, for it would *mandate* (as well as "explain") cross-modal transfer in the Molyneux test. Yet surely it seems *possible* for there to be creatures whose

touch-derived concepts of spatial properties don't transfer to their visual experiences.³²

Second, a view of this sort has consequences beyond the question of cross-modal transfer. If recognitional concepts of certain kinds of properties are supposed to display their essences, then we should be able to gain knowledge of those essences just by scrutinizing our concepts. And this may suggest that if there's no a priori connection between a pure recognitional concept acquired from a certain "perspective" and a discursive concept that purports to describe the essential characteristics of the property it denotes, then these concepts must be representing different properties.

This would be unobjectionable to Berkeley, for whom spatial properties, like *all* properties, are nothing but congeries of "ideas", with natures or essences that ought to be transparent to the mind. And it may seem unobjectionable even to us in the case of spatial concepts. Such a view, however, would be quite dangerous for property realists if extrapolated to other concepts that may seem to wear the essences of the properties they denote on their sleeves, for example, *phenomenal* concepts. An argumentative strategy of a number of dualists (Chalmers 2002, Nida-Rumelin, 2002) is to claim that we have special recognitional concepts such as what it's like to feel pain and what it's like to see red that reflect the essence of the properties in question, which (as we can tell by scrutinizing these concepts) just can't be physical. Better, then – at least for property realists who are physicalists – to stick with the view that *rational* transition, in Campbell's sense, can occur only with the application of discursive (or partially discursive) concepts; or, equivalently, that for pure recognitional concepts, recognition in a well-constrained Molyneux test is transition that's rational enough.³³

5. CONCEPTS VS. IMPLEMENTATIONS

There's yet another source of worry, however, about this view. Suppose the MBB identifies the circle and square, by

sight alone, on the basis of his touch-derived concepts – but empirical investigation shows that visual and tactual perceptions of shape are processed, or “coded”, by different sets of neurons, or by different computational mechanisms. This, some have argued, would be evidence that the MBB’s identification is the product not of the application of a single (though touch-derived) concept of a circle or a square, but rather of distinct, though innately linked, or hard-wired, representations. Jesse Prinz, in his (2002, p. 135) defense of concept-empiricism, argues that it is “a non-sequitur to infer a common amodal code from intermodal transfer abilities, because there is a competing explanation. We may be born with a set of rules that directly map modality-specific representations in one sense onto modality-specific representations in another.” (p. 135) Moreover, he argues (despite a certain amount of evidence to the contrary), it’s reasonable to conclude that visual and tactual representations of spatial properties work just this way. This “supports the conclusion”, he continues, that “concepts are couched in modality-specific codes” (p. 137). Georges Rey (in conversation) has suggested, similarly, that if there are significant differences in the rules by which visual and tactual inputs from spatial perception are computed, then it’s reasonable to conclude that we have two sets of spatial concepts with hard-wired links between them.

In both cases, however, one might wonder why such a situation would count as the possession of two innately linked concepts, rather than merely a single concept activated by two distinct kinds of stimuli; that is, it’s not clear why what’s being imagined can’t be regarded as some *subpersonal* or *subconceptual* distinction, a distinction not between concepts, but their *implementations*. Prinz, for example, seems to hold that we can’t count as having common amodal concepts of spatial properties unless it’s clear that visual and tactual perceptions of these properties are represented by a “common amodal code”, that is, a set of neurons activated indifferently by visual and tactual inputs. But it’s not clear that neural commonalities are required for conceptual

commonalities. The issue here is complicated, and resolving it would require not merely a clearer picture of what the empirical facts in question are, but also a clearer picture of how (and, indeed, whether) *psychological* explanation is to be distinguished from “lower-level” explanations of what goes on in the brain. And this, as they say, is a project for another day. Still, the verdict here depends on empirical and broadly methodological considerations, and not on views about what’s required for “rational transfer” which, as I’ve argued, are unmotivated and have problematic consequences.

6. CONCLUSION

In the first section of this paper, I listed some questions that are often raised about (pure) recognitional concepts of experience. These musings on Molyneux, I hope, can provide support for two claims: first, that it’s possible to constrain a situation enough for a subject’s inclination to reidentify an item as “another one of those” to count as the application of a single recognitional concept, and, second, that these inclinations or dispositions to reidentify are all that’s required for a concept to put one directly *en rapport* with the property in question; there’s no need for the concepts to do anything like “mirror” the property itself.

As for perceptual concepts of spatial figures, so for recognitional concepts of one’s own phenomenal states. Here, as in the identification of circles and squares, recognitional dispositions can suffice for putting us *en rapport* with phenomenal properties; they needn’t be required to “match” those properties in any way other than to pick them out reliably in the relevant test situations.

Recognitional dispositions may not do all the work in individuating concepts that we may wish; information about differences in functional role may need to be added to retrieve all the distinctions that, intuitively, may seem to be there. But theorists tempted to appeal to recognitional dispositions

should not think that “pure” recognitional concepts are not sufficiently “special” to put us en rapport with phenomenal properties; what’s special about knowing what it’s like to feel pain or see red is due to the distinctiveness of feeling pain and seeing red, and not to the character of the recognitional concepts which, by effecting reidentification of those properties, thereby give us access to them. These points are often stressed by philosophers of mind whose main concern is with recognitional concepts of experience, but it’s interesting to see them reinforced by reflection on how recognitional concepts work in other domains as well.³⁴

NOTES

¹ This may be disputed, of course, by Berkeley or Reid, who hold that the objects of sight and touch have different geometries, but I’ll ignore these views in what follows.

² This is a somewhat problematic distinction: do I count as being able to discriminate shapes on the basis of perception if I have to put on my glasses? Yes. Consult my Geiger counter? No. Look through the magnifying glass that comes with the cheap edition of the OED? Maybe. Again, all I care about is that there are at least some clear cases (or contexts).

³ See Berkeley, however, for dispute.

⁴ Again, this is contrary to Berkeley.

⁵ It may be more difficult, however, for me to identify more complicated shapes indifferently by sight and by touch. This issue will be discussed later on in the text.

⁶ (NTV 133).

⁷ This characterization may not be fair to Locke, since, arguably (and as I myself have argued), he’s more interested in how we manage to perceive 3D figures like cubes and spheres by sight, given that our minds are “imprinted” with 2D “sensations”. But I’ll be concentrating most on Berkeley’s negative conclusions about getting from touch to sight. Berkeley, of course, had greater ambitions still, namely, to show that, consequently, there were two distinct sets of spatial *properties*. My interest here, however, is merely in the individuation of spatial *concepts*.

⁸ Many, in addition, took their hypothesized answer to Molyneux’s question to give decisive support to either rationalism or empiricism, but this needs further argument. This issue will be addressed later in the text.

⁹ See also contemporary psychologists, e.g. Meltzoff.

¹⁰ Does referring to spatial concepts as *amodal* suggest that “perceptual modalities [involved in representing space] all use the same kinds of symbols as each other and as the more central systems associated with high-level cognition”. (Printz, 2002; Printz calls this “common code rationalism”). I’d like to use the term ‘amodal’ more weakly to describe a perceptual or recognitional concept which can have instances, or tokens, that arise from different senses. I’ll discuss, in later sections, the relation between amodality, in this sense, and a variety of views about the mechanism of conceptual coding.

¹¹ For example, suppose my “that (again)” (pointing in to a horrible sensation) is consistently caused by neural states that involve C-fibers in a particular configuration. Then my recognitional/demonstrative concept picks out that sort of C-fiber activity. So we have two, conceptually independent, concepts (“that (kind)”, “C-fiber activity”) picking out one property. But because the recognitional/demonstrative concept denotes “directly” without need of any mediating mode of presentation, we’re not stuck with any further properties that may be irreducibly non-physical. See Loar, 1990.

(It’s clear, I think, why these concepts must be regarded as dispositions to *reidentify* an experience, in introspection, as “that again” or “one of those”, for otherwise it wouldn’t be clear *which* property a “pointing in” denotes.)

¹² Cynthia Macdonald, in a recent article (2004), also finds Molyneux’s Question to have important implications for the appeal to recognitional concepts made by philosophers interested in the reduction of phenomenal states. However, we come to different conclusions about what these implications are.

¹³ This comes out, for example, in Locke’s discussion of the MQ (Essay II.ix.8), where he suggests that we have visual “sensations” of color, light, and 2D figure, which – after habituation – “judgment” transforms into an “idea” of a “convex” shape. (It’s not completely clear that he’s not also worried about whether there’s truly visual perception of 2D shape, rather than merely of light and color, but it seems, on balance, that this is what he means. In any case, Berkeley understood him in this way as well (NTV 130).)

¹⁴ Also, see contemporary philosophers such as George Pitcher (1977).

¹⁵ It is not clear to me that these aids to the newly sighted man must serve to provide evidence of an empirical correlation between visible and tangible figures; I will discuss this further later in the text.

¹⁶ Leibniz, *New Essay*, IX, 8.

The implication here is that the man born blind gets to know in advance that there is a correlation between the items to be seen and a class of items previously felt, and many have taken Leibniz to suggest that,

without this information, he might not succeed in identifying the circle and the square.

Leibniz says later on the section,

“if [the blind man] is not thus instructed in advance, I grant it will not at once occur to him that these paintings of [the cube and sphere] that he forms at the back of his eyes, which could come from a flat painting on the table, represent bodies. This will occur to him only when he becomes convinced of it by the sense of touch or when he comes, through applying principles of optics to the light rays, to understand from the evidence of the lights and the shadows that there is something blocking the rays and that it must be precisely the same thing that resists his touch.... For these are pretty much the means that we do have for distinguishing at a distance between a picture or perspective representing an object and the real object.”

But here Leibniz is worried about whether or not a two-dimensional visual display will automatically be taken to “represent” a three-dimensional shape, and not whether the man born blind will need information about the correlation to make the relevant distinctions among two-dimensional objects. (This is contrary to Gareth Evan’s reading in his (1985). Indeed, the last sentence of the above quote implies quite clearly that Leibniz thinks no additional information would be necessary for the man born blind to be able to identify the two-dimensional figures.)

¹⁷ To avoid this sort of situation, it might be necessary not only to keep the MBB in the dark (as it were) about which figures he’ll soon be seeing, but to give him a bit of *disinformation* as well.

¹⁸ See Pitcher (1977, p. 52), for more examples.

¹⁹ The relation of the visible and tangible square, continues Berkeley, is exactly like the relation between written and spoken language: even though written and spoken tokens of the word ‘adultery’ have the same “number and arrangement of parts”, a written ‘a’ has no *intrinsic* similarity to a spoken ‘a’; by analogy, the relation between visible and tangible figures is equally arbitrary. (NTV 143)

²⁰ Alternatively, one could test a number of people born blind: half on the circle and square, and half on the circle and square-like figure; if a significantly greater number of the first group identify the noncircular figure as a square, then there’s evidence that real recognition, rather than guesswork, has occurred.

²¹ Indeed, it may be that a straight line must be embedded in a more complex visual context to be identified quickly, or even at all, *as* a straight line by means of vision. (This wouldn’t entail that the MBB would, after all, be able to identify a square immediately upon first viewing, since it may be that the straight line must be seen as part of *one or another* more complex figure to be seen *as* a straight line, but then some reflection has to go on to determine *which* kind of figure it is. Or, alternatively, it may even be that one can recognize straight equal lines, when one first sees them, only if they

are arranged in a square, as long as they don't have to be seen *as parts of a square*). See Livingston, Andrews, and Harnad (1998) for some further discussion of these issues.

²² Other contemporary theorists hold similar views. As Kirk Ludwig has put it, in his response to John Campbell (1996, p. 327),

“The cross-modal transfer of information is rational if is the result of the subject's access to the representation of shape in the experience itself. The alternative is that the cross-modal transfer of information is simply hard-wired into us, a brute fact about our functional organization.” See also Brian Loar (1996, p. 324), who concurs that it may be that “although certain of our visual and tactual shape perceptions and recognitional abilities are innately tied, this is just a bit of contingent wiring that we can conceive to be interrupted. [and thus that] even in...favorable cross-modal cases, visual and tactual perceptions and recognitional concepts ought to be typed distinctly”. (Loar, however, suggests that “[t]here are epistemological views... on which inferences connecting [type-distinct, but] innately tied concepts count – in a somewhat unexciting sense perhaps – as a priori rational”.)

²³ He would also be naturally regarded as having rational grounds for judging a rectangular equilateral diamond as an instance of a square even if he does not immediately do so.

²⁴ Berkeley himself could be clearer about this. He writes, when discussing abstraction in NTV (128):

“[w]hen upon perception of an idea I range it under this or that sort, it is because it is perceived after the same manner, or because it has a likeness or conformity with, or affects me in the same way as the ideas of the sort I rank it under. In short, it must not be entirely new, but have something in it old and already perceived by me. It must, I say, have so much, at least, in common with the ideas I have before known and named as to make me give it the same name with them.” [NTV 128]

This passage is ambiguous between the claim that one's inclination to co-classify items (give them the “same names”) is produced (perhaps even justified) by the recognition that they have something in common, and the claim that their having something in common is determined by one's inclination to co-classify them, in the right sort of test situation – that is, one that eliminates guesswork or inference, as the Molyneux set-up is supposed to do. It is the second reading, I suggest, that is relevant to the case of pure RD concepts.

²⁵ This, of course, is a classic, Frege-inspired, criterion for when we're wielding a single concept. Given concepts C and C^* , if one can rationally doubt the truth of ' $C = C^*$ ', then C and C^* must express different “modes of presentation”, and thus be different concepts, of whatever they denote,

even if it turns out to be the same property or object. For example, because one can rationally doubt the truth of 'the figure bounded by the paths between bases in a regulation baseball game is a diamond', but not of 'A diamond is a 4-sided figure', the concepts expressed by the constituent phrases in the former, but not the latter, statement are distinct and unconnected.

²⁶ Questions of this sort were raised (independently) by Nenad Miscevic and James Van Cleve.

²⁷ And thereby, I suppose, bite the bullet.

²⁸ To be sure, there are red items that aren't hot. But, remember, we're interested not in the property picked out by our noting that an object looks red per se, but rather in the property picked out by noting that something looks hot in that particular way that reddish coals look when they're hot. There are also hot items that don't look that particular distinctive way that hot coals look. But this is OK, too, since all I need to establish is that we can identify, both visually and tactually, a broad range of degrees of *heat in coals* (and not heat per se). Even when thinking about heat in general, however, it doesn't seem problematic that we may have the capacity to distinguish, both visually and tactually, between degrees of heat in certain kinds of objects, while, in others, our identifications can be made only on the basis of touch. After all, this is a familiar phenomenon even in the identification of spatial properties: humans can identify complex 2- and 3D figures (many-sided geometrical figures, or figures shaped like various difficult-to-distinguish animals) better by sight than by touch. Perhaps, one may agree, but at least in those cases, but not the case of heat, the shape differences of the figures in question are *tangible*, but the heat differences of the items in question are not *visible*. One can respond, though, that these differences are tangible in that creatures with considerably better tactual sensitivities than humans could make the distinction; but, similarly, the heat of various objects, invisible to us, could be visually discerned by creatures with visual sensitivity to broader swaths of the electromagnetic spectrum than we have.

²⁹ See Campbell (1996, p. 317):

"On the radically externalist view of primitive consciousness of shape, the phenomenal experience of shape is the same in sight and touch. It will be in consequence of this amodal character of shape perception that this cross-modal transfer occurs, and cross-modal transfer will be a rational phenomenon. No ground for doubt as to whether one is perceiving the same shape properties through sight or through touch will be provided by an intrinsic experiential difference between the geometry of vision and the geometry of touch, for there is no such intrinsic, phenomenal difference."

He adds, "There may still be further phenomenal differences between [sight] and touch, which may tip us off to which sense we are using, but these will be extrinsic to the geometrical characteristics of the perceptions."

³⁰ Critics have also noted that there are cases in which a subject could have two recognitional concepts of a common property derived from the *same* sense-modality (say aardvarks from far away and aardvarks from close up), but not be able to tell a priori that this is so. See Loar (1996) for a criticism of this sort. Radical externalists (e.g. Lycan, 1996; Tye 2000) might respond that perceptual experiences are “layered”, and represent *properties from various perspectives*, rather than those properties alone; thus all we can expect is for rational transfer to occur between experiences of properties perceived from the same perspective.

It’s not clear, however, what determines similarities and differences in “perspective”. An object’s being perceived from the same distance won’t do – at least without undermining the relevance of the Molyneux test on the man born blind, since the figures he is shown are assumed to be farther away than those he has previously touched. (In addition, there are cases in which a common property can be perceived by different senses from the same distance, and yet it seems implausible that cross-modal transfer would occur. Consider, once again, the property of *being rotten*. This can be identified, from arm’s length, by sight and touch.) And obviously, one can’t claim that differences in sensory modality make for differences in perspective, on pain of offering an a priori answer to Molyneux’s Question.

³¹ Brian Loar, in a paper responding to Campbell (1996) suggests that Campbell may want to restrict his thesis to *spatial* concepts, but notes that even here the thesis isn’t general, since there could be tactual and visual recognitional concepts of complex geometrical shapes (such as things the shape and size of Siamese cats) that are not “cognitively co-inferable”, and there are many cases, such as face recognition, in which visual recognitional concepts are more refined than the corresponding tactual concepts (1996, p. 323). It’s not clear, however, that these cases are really counterexamples. Campbell could claim (as Loar acknowledges) that, in the Siamese cat case, the transfer would be made if the subject had sufficient time for “a priori reflection”, and in the case of face recognition, Campbell could argue that it’s compatible with radical externalism to treat more- and less-refined abilities to recognize shapes as concepts of different properties (e.g. being the shape of a human face vs. being the shape of Abraham Lincoln’s face) (For precedent, see Dretske (1995)).

³² Gareth Evans (1985, p. 396) has argued that there may be “conceptual grounds” for maintaining that the man born blind would be able to identify the figures in the Molyneux test, but his argument rests on the claim that having bona-fide spatial concepts requires the capacity to locate objects in “behavioral space” – a requirement that Campbell’s version of radical externalism eschews. Campbell, nonetheless, (in correspondence) suggests that it’s not so easy to make sense of the possibility that one’s touch-derived concepts don’t transfer to one’s

visual experiences if “vision and touch use exactly the same geometrical primitives and the same operations defined over them”. But if spatial concepts don't display the essences of the properties they represent, this possibility seems no harder to imagine than the possibility of rottenness looking different from the way it feels.

However, there's a weaker claim about spatial concepts that may be plausible, namely, that if a newly-sighted person who has a discursive concept of, say, a square were to see a square and be told that it's a square, she'd find it unsurprising that this is what squares look like (or at least *less* surprising than learning what it's like to see red). That is, there may be a connection between squares and square-experiences that can be deemed “intelligible” (or more intelligible than the relation between the surface properties of objects and color experiences), in just the sense that, once one comes to know about the relation, it seems, intuitively, to “make sense”. There is precedent for discerning a view like this in Locke (Rozemond and Yaffe 2004), and, in addition, this may be a way to explicate Locke's claim that primary qualities “resemble” our ideas of them. However, even on this view one wouldn't be able to deduce (or otherwise “read off”) the way squares look (or feel) from a description of them, or be able to determine, from one's (untutored) experiences of spatial figures which spatial figures they are experiences of.

³³ This view is compatible with the claim that a necessary condition for perceptual experiences to be tokens of the same pure recognitional concept is for them to be relations to the same property. But it permits a subject's making mistakes from time to time, since pure recognitional concepts are supposed to pick out whichever property *most* of the items that trigger the disposition have in common. This takes care of occasional illusions. Couldn't my BIV counterpart have recognitional concepts like mine which nonetheless fail to pick out shape properties? These, I think, would have to count as different concepts – though they may well play the same functional role, and in that way be very similar, to the ones I possess.

³⁴ Earlier versions of this paper were read at UCSB in November, 2004, and at the IUC conference in Dubrovnik in May 2005. I thank audiences in both places for helpful comments and suggestions, and owe special thanks to Nenad Miscevic, whose comments prompted improvements in section III. I am also grateful to Brian Loar, John Campbell, Joseph Levine, Georges Rey, James van Cleve, and Brian Glenney, for their comments on earlier drafts.

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