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ARTICLE

Locke on the Molyneux Question: A Sensible Point View

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Abstract
The Molyneux question asks: would a blind person, who knows spheres and cubes only from touch, be able to recognize these shapes visually immediately upon becoming sighted, without touching them? Molyneux himself answered no. Locke accepted Molyneux's negative answer. However, Locke's answer appears inconsistent with the doctrine of common sensibles, according to which some ideas are given in more than one sense modality. Motivated by alleviating this tension, philosophers have put forth several interpretations of Locke's views on shape perception. Here, I motivate a novel interpretation of Locke that can better resolve the tension.

Keywords: Locke; perception; early modern; Molyneux problem

The Molyneux question asks: would a blind person, who knows spheres and cubes only from touch, be able to recognize these shapes visually immediately upon becoming sighted, without touching them? Molyneux himself answered no. Locke accepted Molyneux's negative answer (Locke, 1979a, *Essay* II.ix.8). However, Locke's answer appears inconsistent with the doctrine of common sensibles, according to which some ideas are given in more than one sense modality. In endorsing this doctrine, Locke specifically names *figure* as one of these ideas (Locke, 1979a, *Essay* II.v). His adherence to common sensibles and a negative answer to the Molyneux question leads to the following tension: Locke agrees with Molyneux that the newly sighted person would not recognize the cube or sphere by vision alone. However, his doctrine of common sensibles maintains that the very same idea, *sphere*, is given in both sight and touch. If the same idea is given by each modality, then the Molyneux patient already possesses the idea *sphere* by touch.[1] This ought to enable them to recognize spheres by sight alone, resulting in a positive answer to Molyneux's question.

Motivated by alleviating this tension, philosophers have put forth several interpretations of Locke's views on shape perception. All parties agree that the Molyneux patient can feel, through touch, three-dimensional shapes such as spheres and cubes. The disagreement concerns what the Molyneux patient *sees* upon becoming sighted. My aim in this essay is to motivate an unconsidered interpretation of Locke. This interpretation holds that the Molyneux patient's visual given consists of what Locke calls *sensible points*, which are the smallest points of extension discernible by the human mind. I call this interpretation the "sensible point view" (SPV). I argue that contrary to other views in the literature, SPV can resolve the tension caused by Locke's answer to the Molyneux question while remaining consistent with other parts of his philosophy, such as his views on the passivity of perception and his antinativism.

[1]Throughout I frame my discussion in terms of the sphere, but the exact same considerations apply to the cube.

1. Locke's Philosophy of Perception

For Locke, mindedness is a three-way relation between subject, world, and ideas. How exactly to understand Lockean ideas is a matter of scholarly debate.[2] Locke identifies them as the immediate objects of thought. They are of things like "*Whiteness, Hardness, Sweetness, Thinking, Motion, Man, Elephant, Army, Drunkenness*, and others" (Locke, 1979a, *Essay* II.i.1). In Book I of *An Essay Concerning Human Understanding*, Locke denies that the mind comes furnished with any innate ideas. He characterizes the human mind, in its original state, as a piece of white paper, void of all characters (Locke, 1979a, *Essay* II.i.1). His goal in the second book of the *Essay* is to show how the mind acquires its ideas.

The answer is perception (Locke, 1979a, *Essay* II.i.I). Contemporary readers have to be careful here, however, for Locke uses the term differently than we do today (Jacovides, 2015). By perception, we mean the use of our senses in detecting external objects. Locke's use of the term is broader, encompassing both our colloquial usage (which he calls *sensation*) and reflection on one's mental processes (Locke, 1979a, *Essay* II.i.3–4).

Ideas are further partitioned into two types, *simple* and *complex* (Locke, 1979a, *Essay* II.ii.1). These two types of ideas are distinguished by their compositionality. Complex ideas are always decomposable into other ideas.[3] Simple ideas, by contrast, are not. They "contain in [them] nothing but one uniform Appearance, or Conception in the mind, and [are] not distinguishable into different Ideas" (Locke, 1979a, *Essay* II.ii.2). Locke elucidates this mark of simplicity using an example of a piece of ice. Imagine, Locke says, holding the piece of ice in your hand. You can separate this idea of a piece of ice into separate constituent ideas, like its *coldness* or *hardness*. But these constituents are not so divisible; your idea of the ice's coldness admits of no parts. So whereas the idea of *ice* is complex, the idea of *coldness* is simple. Simple ideas, then, are like the morphemes of thought. They are the atoms out of which our complex ideas are built.

These two types of Lockean ideas are further distinguished by how they enter the mind. Simple ideas come to us only from perception. Complex ideas are never perceived but are produced by certain powers of understanding that use simple ideas as their input: combining, relating, and abstracting (Locke, 1979a, *Essay* II.xii.1). Thus, in Locke's view, it is never the case that we perceive, properly speaking, a complex idea nor that the understanding can create a simple idea. As Locke writes,

> These simple ideas, which are the materials of all our knowledge, are suggested and supplied to the mind only by sensation and reflection. Once the understanding has been stocked with these simple ideas, it is able to repeat, compare, and unite them, to an almost infinite variety, and so can make new complex ideas as it will. (Locke, 1979a, *Essay* II.ii.2)

Locke identifies sensation as the origin of most of our simple ideas (Locke, 1979a, *Essay* II.i.3). From sensation we are furnished with ideas of sensible objects and their qualities, ideas like "*Yellow, White, Heat, Cold, Soft, Hard, Bitter, Sweet*" and so on (Locke, 1979a, *Essay* II.i.3). The simple ideas of sensation can be further subdivided into two types. The first is those ideas that come uniquely from a particular sense. Call these *proper sensibles*. In the case of vision, for example, Locke identifies light and color as the proper sensibles (Locke, 1979a, *Essay* II.iii.1). The second type of simple idea of sensation is received by more than one sense modality. Call this type of idea a *common sensible*. Locke believes that common sensibles are exclusive to touch and vision. Both of these senses can receive simple ideas of space, figure, rest, and motion (Locke, 1979a, *Essay* II.v). This adherence to common sensibles lies at the heart of the inconsistency generated by Locke's answer to the Molyneux question.

[2]For just a small smattering of the literature on how to precisely understand Lockean ideas, see Ayers (1986), Lennon (2001; 2004) and Chappell (1994).

[3]There is an interpretive controversy over whether this mark is cashed out in terms of idea *tokens* or *types*. On the token view, any compositionality renders an idea complex. On the type view, by contrast, simple ideas can have constituent parts, as long as those parts are ideas of the same type. This distinction becomes relevant later, so I will say more then.

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William Molyneux posed the following question to 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 t'other; which is the Cube, which the Sphere. Suppose then the Cube and Sphere placed on a Table, and the Blind Man to be made to see. Quaere, Whether by his sight, before he touch'd them, he could now distinguish, and tell, which is the Globe, which the Cube. (Locke, 1979a, *Essay* II.ix.8)

Molyneux himself answered no. Locke agreed with Molyneux's negative answer (Locke, 1979a, *Essay* II.ix.8). This, combined with the doctrine of common sensibles, means Locke endorses the following triad:

1. The Molyneux patient receives, from touch, the idea *sphere*.
2. The Molyneux patient receives, from vision, the idea *sphere*.
3. The Molyneux patient would not recognize the idea *sphere*, presented visually, as the same as the idea *sphere* presented haptically.[4]

Many commentators take this triad to be inconsistent. The first to make this charge against Locke was Berkeley, who wrote:

> Now, if a square surface perceived by touch be of the same sort with a square surface perceived by sight; it is certain the blind man here mentioned might know a square surface, as soon as he saw it.… We must therefore allow, either that visible extension and figures are specifically distinct from tangible extension and figures, or else, that the solution of this problem, given by those two thoughtful and ingenious men, is wrong.[5] (Berkeley, 1948, 133)

If Locke admits that figure is a common sensible to touch and vision, then it is unclear what stops the Molyneux patient from recognizing the sphere as such, given they have been afforded the same idea from touch. Some maintain that the criticism above is unanswerable; Locke ought to have just answered "yes" to the Molyneux question (Schumacher, 2003). However, many argue for certain interpretations of Locke that purport to resolve the tension.

2. Interpretations of Locke and the Molyneux Inconsistency

We can group extant interpretations into three broad categories. Following a recent paper by Walter Ott (2020), I will call these *minimal, middle* and *maximal* views. These interpretations differ in how they answer two questions. First, how does the view on offer resolve the Molyneux tension? Call this the *tension question.* However, the philosophical puzzle here is not just to present a view of perception that can resolve the tension, but one that can plausibly be construed as *Locke's* theory of perception. This generates a second question: why ascribe the view on offer to Locke? Call this the *text question.* Answering the text question depends not just on resolving the inconsistencies in Locke's views, but also on citing textual evidence in the *Essay* (or elsewhere). We should be hesitant to ascribe a view to Locke just because it resolves the inconsistency generated by his answer to the Molyneux question. After all, it is possible that Locke simply held an inconsistent view of how perception operates. What is crucially important in resolving this interpretive dispute is how each view is supported by available textual evidence.

[4]The same triad could be rewritten, but with the idea *cube.*

[5]Note that Berkeley's criticism concerns the idea *square*, not *cube.* The objection is otherwise the same.

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2.1 The middle view

To begin with the middle: the Molyneux question is about our perception of *shapes.* The inconsistency is generated because the Molyneux patient receives the same shape idea by two different modalities. The middle view resolves this tension by drawing a distinction between the ideas of shape the Molyneux patient receives from vision and the ideas of shape she receives from touch. This difference is drawn in terms of dimensionality. The shape ideas the Molyneux patient receives from touch are three-dimensional. These are ideas such as *cube, sphere*, and so on. By contrast, the ideas the Molyneux patient receives from vision are *two-dimensional.* They are ideas such as *square, circle*, and so on. This difference in dimensionality leads to the following explanation of Locke's negative answer: the Molyneux patient fails to recognize the sphere visually because they do not see a sphere. They see only a *circle.* Thus, the middle view denies the second premise of the inconsistent triad above. The middle view is by far the most popular interpretation of Locke. Some version of it is endorsed by Ott (2020), Hopkins (2005), Park (1969), Vaughn (2018), Bruno and Mandelbaum (2010), and Mackie (1976).

One might harbor immediate reservations about the middle view. Phenomenologically, it seems vision is three-dimensional. When I look at a sphere, I see a sphere, not a circle. Implying otherwise may seem not just like a knock against a view, but a borderline *reductio ad absurdum.* Here adherents to the middle view draw a distinction between the Molyneux patient and what we can call experienced perceivers. Immediately upon having their vision restored, the world does not (visually) seem three-dimensional to the Molyneux patient. But for experienced perceivers, this is not the case. With enough time and exposure, the world comes to appear (visually) three-dimensional. Depth enters vision properly through a process of perceptual learning that the Molyneux patient has not had the requisite experience to undergo.

How does the middle view answer the *text question*? Textual support comes largely from the passage immediately following Locke's discussion of the Molyneux question. Here, Locke writes,

> We are further to consider concerning perception, that the ideas we receive by sensation are often, in grown people, altered by the judgment, without our taking notice of it. When we set before our eyes a round globe of any uniform colour, v.g. gold, alabaster, or jet, it is certain that the idea thereby imprinted on our mind is of a flat circle, variously shadowed, with several degrees of light and brightness coming to our eyes. But we having, by use, been accustomed to perceive what kind of appearance convex bodies are wont to make in us; what alterations are made in the reflections of light by the difference of the sensible figures of bodies;- the judgment presently, by an habitual custom, alters the appearances into their causes. So that from that which is truly variety of shadow or colour, collecting the figure, it makes it pass for a mark of figure, and frames to itself the perception of a convex figure and an uniform colour; when the idea we receive from thence is only a plane variously coloured, as is evident in painting. (Locke, 1979a, *Essay* II.xi.8)

The picture of perception explicated in this paragraph does seem to accord with the middle view. Locke notes that, when looking at a globe, the Molyneux patient sees a circle. It takes a further act of judgment to alter this circular idea into a sphere. But this is just what the middle view says: the Molyneux patient receives, from vision, only two-dimensional spatial ideas, which require a further act of judgment to become three-dimensional.

2.2 The minimal view

According to the middle view, the Molyneux patient, upon gazing at the sphere, sees only a circle. The minimal view argues that the Molyneux patient's vision is even more impoverished: she *sees no shape whatsoever.* This view is advocated for by Bolton (1994). On the minimal view, the Molyneux patient sees only light and color. The way the minimal view resolves the tension question mirrors

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the middle view. The minimal view denies the second premise of the triad. The Molyneux patient receives *no* spatial ideas from vision, and this straightforwardly explains why they fail to recognize the cube visually. Furthermore, again like the middle view, the minimal view maintains that although the Molyneux patient's visual given is impoverished, this is not true of experienced perceivers. Once one has sufficient exposure to haptic shape ideas and the color array, vision becomes three-dimensional through a process of perceptual learning (Bolton, 1994, 80).

One of the dialectical motivations of the minimal view, however, is that it claims to answer an objection that the middle view cannot. This objection comes from a contemporary of Locke, Edward Synge. Synge answered "yes" to the Molyneux question. He reasoned that the Molyneux patient would be able to arrive at a positive answer via inference (Locke, 1979b, *Correspondence* V:1984). She could reason that the visual image of the cube has sharp terminations, much like her tactile experience of the cube, whereas the visual image of the sphere is continuous and smooth, much like her tactile experience of the sphere. In short, the middle view's answer to the tension question assumes a difference in dimensionality resolves the inconsistency. However, Synge's objection is that, while not being identical, a circle looks *similar enough* to a sphere to enable recognition. Even on the middle view, the objection goes, Locke still should have answered *yes* to the Molyneux question.[6] The minimal view avoids this consequence since the Molyneux patient does not perceive *any* shape whatsoever.

How does the minimal view answer the *text question*? Bolton finds support for the view from three sources. First, Locke was aware of Synge's objection and dismissed it out of hand (Locke, 1979b, *Correspondence* V: 2059). Bolton thinks Locke's nonchalant response indicates that Synge had misunderstood his views (1994, 79). Second, Bolton refers to Locke's discussion of Malbranche, where he writes:

> he says, that when we look on a cube, 'we see all its sides equal." This, I think, is a mistake, and I have in another place shown how the idea we have of a regular solid, is not the true idea of that solid, but such an one as by custom (as the name of it does) serves to excite our judgment to form such an one. (1823, IX: 218)

Third, Bolton cites the same passage as proponents of the middle view, II.ix.8, quoted above. Bolton highlights the final sentence as supporting her contention that this visual input lacks spatial qualities altogether (1994, 80). She reads "that which is truly variety of shadow or colour, collecting the figure," as an articulation of the minimal view: vision presents us with just color and shadows, and judgment, taking this as an input, fashions the three-dimensional visual image we all enjoy. However, the language in this passage is also indicative of the middle view. Recall that Locke writes that "the idea imprinted upon our mind is of a flat circle, variously shadowed." Bolton is not blind to the language here. But she explains it away as Locke "struggling to describe a pattern of light and colour that has no reference to figures in two- or three- dimensional space" (1994, 81).

2.3 The maximal view

The two previous views have argued for a distinction between the spatial ideas received by touch and those received by vision. The maximal view argues that such a distinction is ill-conceived. According to the maximal view, the Molyneux patient receives, from both touch and vision, ideas of three-dimensional figures. The view is argued for by Berchielli, who writes that other views presuppose "a specific distinction between ideas of shape received by sight and those received by touch, and this distinction does not exist in Locke's philosophy" (2002, 48).

The maximal view answers the *tension question* not by denying any one premise of the triad, but by denying that the triad itself is inconsistent. Berchielli maintains that one can have two of the same

[6]For a response to this objection from a middle view proponent, see Vaughn (2018).

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ideas while failing to realize they co-refer (Berchielli, 2002, 57). The Molyneux patient, then, is akin to one who has the idea of Hesperus and the idea of Phosphorus but does not know that they co-refer to the planet Venus (Bruno & Mandelbaum, 2010, 170). Given enough time and exposure to visual shapes, the Molyneux patient would learn that these ideas do in fact co-refer and gain the ability to recognize the identity between her visual and haptic ideas.

Textual support for the maximal view comes from the fact that, outside of II.ix.8, a distinction between haptic and visual ideas of shape is not present in Locke's philosophy. What is more often emphasized is how both of these different modalities can equally receive ideas of shape (Berchielli, 2002, 48). A clear endorsement of this comes from II.v, where Locke discusses the doctrine of common sensibles. Here, he is clear: both vision and touch can receive ideas of figure. Another spot in the essay Berchielli highlights is II.ix.9, where Locke describes vision as the most comprehensive sense. This proclamation, Berchielli argues, is hard to square with either the middle or minimal view, according to which vision is comparatively impoverished to touch (2002, 60).

3. The SPV

This ends my summary of extant views. In this section, I present a novel interpretation. What primarily distinguishes the various interpretations of Locke sketched in section 2 is how they answer the following question: what does the Molyneux patient *see* when they gaze upon the sphere (or cube)? The minimal view maintains that the Molyneux patient sees just light and color. The middle view maintains that the Molyneux patient sees a circle. The maximal view maintains that the Molyneux patient sees a sphere. The view I argue for falls in between the middle and minimal views. In my view, the Molyneux patient does visually receive spatial ideas, but these spatial ideas stop short of reaching the level of complexity exhibited by shapes like circles and spheres. The spatial ideas we receive from vision are *sensible points.*

But what is a sensible point? In II.xv.9, Locke responds to two objections in a footnote.[7] The first is that his definition of a simple idea—the one quoted earlier from II.ii.1—is not exact enough. Locke dismisses this objection. The second objection is that, if simple ideas are understood as specified in this earlier section, then space or extension cannot be a simple idea. The argument goes as follows:

1. Simple ideas cannot be divided into further ideas.
2. Space or extension can be infinitely divided.
3. Therefore, space or extension cannot be a simple idea.

Locke's response is to clarify what he takes our simple idea of space to be. Our simple idea of space is the smallest part of space of which we have a clear and distinct idea (Locke, 1979a, *Essay* II.xv.9: 26). Although this smallest point of extension, as it exists in the physical world may be further divided into smaller parts, our idea of it is not so divisible. To think otherwise is to, as Bolton points out, confuse the retinal image with the idea it produces (1994, 81). In matters of duration, this minimal unit is referred to as a *moment*. Locke, admitting there is no name for this minimal spatial extension, calls it a "sensible point" (Locke, 1979a, *Essay* II.xv.9).

Locke is unequivocal that only simple ideas can be received by any faculty of sensation (Locke, 1979a, *Essay* II.ii.1). Whatever idea is received from vision (or any sense) must be a simple idea. This functions as a constraint on which spatial ideas (if any) are present in the visual given. These spatial ideas must be simple ideas. And, as Locke says here, the only simple ideas of space, and thus the only spatial idea the Molyneux patient sees, are sensible points.

[7]One minor point of clarification: this footnote is actually written by Locke's contemporary, Pierre Coste, who is reporting on what Locke said to these objections.

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But what then of the cubes, circles, spheres, and squares that so often factor into our perceptual experience? If these spatial ideas are not simple, as the discussion of II.xv.9 makes clear, then it follows that they must be complex ideas, not received by sensation, but created by the understanding. This is, as a matter of fact, a view Locke explicitly endorses later in the *Essay*, in his discussion of complex ideas. Beginning in II.xii., Locke distinguishes between three types of complex ideas: substances, modes, and relations. Modes refer to our ideas of the features or properties of substances. As Locke writes, they are a complex idea that "however compounded, contain not in them the supposition of subsisting by themselves, but are considered as Dependences on, or Affections of Substances" (Locke, 1979a, *Essay* II.xxi.4). He further divides this category into two types. The first is mixed modes. Mixed modes are made from more than one type of simple idea. The second is simple modes. Simple modes are constructed from just one type of simple idea. The language here can be a bit confusing—simple modes, despite being so called, are a mode, and thus a complex idea.

On my reading of Locke, the sort of shapes proponents of the middle and maximal view say we see—circles, squares, cubes, spheres, and so on—are instead simple modes, and thus complex ideas. Locke makes this point in passing when introducing what a mode is—he lists "triangle" as an example of a mode (Locke, 1979a, *Essay* II.xii.4). However, he makes it far more explicitly in II.xiii. In this chapter, Locke elucidates the several simple modes of space. In other words, these are the complex ideas the understanding creates by joining several simple spatial ideas together. In II.xiii.5, he explicates how figure is one of these simple modes. Locke writes, "There is another Modification of this *Idea*," (by which he means—our simple idea of space) "which is nothing but the relation which the parts of the termination of extension, or circumscribed space, have amongst themselves." (Locke, 1979a, *Essay* II.xiii.5). This mode of the simple idea of space is figure.

To illustrate, let us look again at the example of the Molyneux patient in depth. Consider the Molyneux patient right when they first gaze upon the sphere. Uncontroversially, they see light and color. But do they see anything more than that? According to the minimal view, the answer is rather straightforward: no. According to the maximal view, the Molyneux patient sees a *sphere.* According to the middle view, the Molyneux patient sees a *circle.* It takes a further act of judgment that she is currently incapable of to transform this circle into a sphere. According to the SPV, the Molyneux patient does not see *a* sphere or *a* circle, but rather an array of multiple sensible points—each corresponding to a different minimally extended part of the scene presented to them. On the reading I would advocate here, this is what Locke is getting at in II.ix.8, where he introduces the Molyneux question, when he describes the role of the understanding as follows:

> So that from that which is truly variety of shadow or colour, collecting the figure, it makes it pass for a mark of figure, and frames to itself the perception of a convex figure and an uniform colour; when the idea we receive from thence is only a plane variously coloured, as is evident in painting. (Locke, 1979a, *Essay* II.ix.8)

On the view I advocate, the key part of this quote is "collecting the figure." Here, Locke describes judgment's labor, where it collects the various sensible points presented visually and forms them into a three-dimensional scene. In fact, this reading of the role of judgment, as being responsible for combining ideas (in this case, sensible points) together, is in line with how Locke describes the role of the faculty later in the *Essay.* In II.xiv.4, he describes judgment as "the putting ideas together, or separating them from one another in the mind, when their certain agreement or disagreement is not perceived, but presumed to be so." Thus, on the view I argue for, Locke's language here is strikingly prescient. He is, in a way, describing what is known in vision science as the inverse inference problem (Pizlo, 2001). This is a computational problem faced by vision: its two-dimensional retinal input is consistent with several distal causes. As Locke understands judgment, it is invoked in this case precisely because we *do not* see the world in three dimensions. There is an uncertainty about the way the world actually is on the basis of the impoverished retinal image. Judgment, "by an habitual custom, alters the Appearances into their Causes"—in other words, it solves the inverse inference problem (Locke, 1979a, *Essay* II.ix.8).

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Thus, we see that the sensible point view—like the middle and minimal view—explains away the supposed tension in Locke's answer to the Molyneux question by denying the second part of the triad—that the Molyneux patient receives the idea *sphere* through vision. The Molyneux patient, upon being presented with a sphere, has a visual experience of an array of sensible points. To construct the idea of *sphere*—a complex idea—she requires the aid of the understanding. Locke describes the construction of complex ideas as a *learned* skill (Locke, 1979a, *Essay* XX.i.22). It is not something for which we have immediate or automatic proficiency; it takes practice. But crucially, the inferential skill the Molyneux patient lacks is not that of going from the two-dimensional idea of *circle*—or from a spaceless array of light and color—to that of *a sphere*. What the Molyneux patient lacks is the ability to construct the depth-ridden, three-dimensional image of the world we all enjoy on the basis of the sensible point pixels that vision proper provides her. Anyone who has viewed a movie—or, to use an analogy more fitting for Locke's time, viewed a realist painting—has enjoyed this ability of the understanding to construct a three-dimensional image from an array of two-dimensional dots. With enough experience, so too will the Molyneux patient.

4. The SPV in Context

I will now move onto discussing how the SPV fares compared to other views in the literature. I will begin by looking at both the middle and minimal view. Ralph Schumacher (2003) argues that both the middle or minimal view runs afoul of Locke's prior philosophical commitments on two fronts. First, they violate Locke's passivity thesis, which states that the mind is passive when it receives ideas from sensation. Second, they violate Locke's anti-nativism. While the middle/minimal views are open to these criticisms, SPV avoids each. Here is how.

Locke's passivity thesis states that the mind is *completely* passive with the ideas it receives from sensation (Locke, 1979a, *Essay* II.i.25). What this means is that the mind cannot create simple ideas of its own accord. It can only receive them from perception. Both the minimal and the middle view argue that the visual ideas of experienced perceivers are created by judgment. In the case of the middle view, judgment alters two-dimensional visual ideas into three-dimensional visual ideas. In the case of the minimal view, judgment alters the nonspatial array of color and light into a three-dimensional, spatial visual field. Either story thus has the understanding producing a new, visual idea: that of three-dimensional shapes. But because this new, three-dimensional idea is *visual*, that is, a product of sensation, it must be a simple idea. So, judgment produces a new simple idea. But this is a direct violation of passivity.

This also leads to a conflict with Locke's antinativism. Locke denied that we have innate ideas (Locke, 1979a, *Essay* I). Schumacher (2003) thought this is in tension with the middle or minimal view. Both views maintain that we end up with a visual idea of three-dimensional shape as the result of judgment. Schumacher argues that, because this idea does not come from vision, it must be produced by judgment. But if judgment produces this simple idea, where does it get it from? It cannot come from haptic experience, says Schumacher, for this is a uniquely visual idea (2003, 55–56). Nor can it be created from other ideas, for then it would not be a simple idea. The only available option is to claim that this three-dimensional visual idea is somehow innate. But this conflicts with Locke's antinativism.

SPV avoids both of these worries outright. This is because, on my reading of Locke, we do not visually perceive in three dimensions. Vision, in both the Molyneux patient and experienced perceives, provides us only with simple ideas. And the only simple spatial idea is the sensible point. Three-dimensional shapes, for both experienced perceivers and the Molyneux patient, are complex ideas, and complex ideas are not provided by sense: neither touch nor vision. The point bears repeating: the idea typical perceivers have of a sphere is *not a sensory idea.* It is an idea of the understanding, furnished by judgment. When we take ourselves to perceive a sphere visually, we are mistaken, according to Locke. One might view this as a knock against SPV. Denying that we visually perceive three dimensions might clash with our phenomenological intuitions. But Locke is not a

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contemporary thinker. The notion that we do not visually perceive depth was in fact the *default* view in Locke's time (Jacovides, 2012). To read any sort of distinction between novice and expert perceivers or any sort of process of perceptual learning into Locke just to avoid this consequence is ill-motivated.

The Molyneux patient's visual given is thus the same as that of the typical perceiver. Their failure to recognize a sphere visually is not a deficit of the visual system, but the result of an inexperienced understanding. The Molyneux question, for Locke, is not a question about comparisons between haptic and visual ideas or comparisons between haptic ideas and visual ideas modified by judgment. It is a question about a comparison between one complex idea of the understanding and another complex idea of the understanding.

So, SPV avoids this first worry outright. SPV denies that the understanding alters the simple ideas received from sensation into another, *simple* idea. Rather, what the understanding does is what it does with any complex idea—combine the simple ideas it receives from sensation. Likewise, when it comes to Locke's antinativism, SPV can avoid this worry, because it does not hold that the understanding creates a new simple idea. It maintains that judgment creates a complex idea (namely, three-dimensional shape) based on the simple ideas of sensible points it receives from vision and touch. There is no need to invoke innateness here, just like there is no need for Locke to invoke innateness to explain how we get any of our other complex ideas.

Neither of Schumacher's criticisms, however, impact the maximal view. Should we prefer the maximal view over SPV? Here, I think SPV (and the middle/minimal view) can better answer the *text question*. Berchelli (2002) was right to point out that visual ideas lacking dimensionality is not mentioned in the *Essay* outside of II.xi.8. But Locke's language here is unequivocal: visual ideas are altered by the judgment to better resemble their causes. If his writing was more ambivalent on this point, then perhaps it would be more troublesome that the idea is not given more space in other portions of the *Essay*.

5. A Confusion About Simplicity?

In the next two sections, I will canvas two objections to SPV and respond to them. The first is that SPV exploits an inconsistency in Locke's notion of a simple idea. I have previously argued that the idea we have when we gaze upon a sphere is a complex idea, assembled out of an array of sensible points. But Matthew Stuart (2009) identified two distinct notions of simplicity present in Locke's writing. These two views arise out of an ambiguity. Locke states that simple ideas are "not distinguishable into different Ideas" (Locke, 1979a, *Essay* II.ii.2). However, it is unclear if he is referring to idea *tokens* or *types*. Either reading produces a different notion of simplicity. If the token reading is correct, then Locke endorses a view Stuart calls *partless* simplicity (simple-partless). If the type reading is correct, then Locke endorses a view Stuart calls *homogenous* simplicity (simple-homogenous). An idea is simple-partless if it is not decomposable into further token ideas. An idea is simple-homogenous if it is not decomposable into different idea *types*.

A simple-partless view entails a simple-homogenous view (since any idea not distinguishable into constituent tokens will not be distinguishable into constituent types). However, a simple-homogeneous view does not entail a simple-partless view. To see why, imagine an idea that is decomposable into different tokens of the same idea type. Such an idea would be simple according to the simple-homogenous view, but not simple according to the simple-partless view.

Stuart provides a reading of Locke where the simple-homogenous view is the operative notion of simplicity throughout the *Essay*. An objector persuaded by this reading might respond to SPV by saying the following: it is true that our ideas of figure are composed, as Locke writes, out of more simple spatial ideas, like sensible points, but this does not mean they are complex ideas. Rather, since they are composed of ideas all of the type (extension), it follows that these ideas of figure are nevertheless simple ideas. Thus, SPV is wrong to suggest that figure cannot be received by sensation. This thought seems to be present in both Berichelli and Bolton. Both mention the passages that

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motivate SPV, but neither author takes this fact to jeopardize figure's standing as a simple idea (2002, 54; 1994, 78, n. 11).

There are two things to note in response to this objection. First, although a precise exegesis of Locke's notion of simplicity is beyond the scope of this essay, it is worth highlighting that there are alternative readings of Locke that take the same passages to be supporting a simple-partless notion of simplicity (Ehli, 2023). But second, and more to our purposes here, if simple-homogenous is Locke's dominate notion of simplicity, then it would lead to a severe tension in his work.[8] Recall that simple modes are, for Locke, complex ideas created by combining token instances of the same simple idea. On a simple-homogeneous reading of Locke, then, simple modes would be simple ideas. But it is eminently clear that Locke does not hold this position. First, Locke's organization of the *Essay* makes it clear that simple modes are to be classified as complex ideas. Simple modes are introduced in chapter XIII of the *Essay*, entitled *Of Complex Ideas.* Their inclusion in this chapter indicates that they are complex ideas. Nowhere throughout does he clarify that, despite their being treated in this chapter, they are simple ideas. Second, Locke describes simple modes, in several places, as resulting from the compounding of simple ideas. Compounding is one of the processes by which he thinks we create *complex* ideas. This indicates that they are complex ideas.

6. Textual Inconsistencies

Another serious objection one might raise against SPV is that it contradicts certain passages in the *Essay*. Recall again the Molyneux patient looking at the sphere. The maximal view maintains she sees a sphere. The middle view maintains she sees a circle. The SPV denies both of these claims; all she (or any perceiver) sees is an array of sensible points. But this claim may seem in tension with several passages throughout book II of the *Essay* where Locke clearly states that we receive *simple ideas* of figure through sensation. This claim is made, repeatedly, throughout II.viii, where Locke introduces his much-maligned distinction between primary and secondary qualities. But it is also present in II.v, where Locke introduces the doctrine of common sensibles:

> The ideas we get by more than one sense are, of space or extension, figure, rest, and motion. For these make perceivable impressions, both on the eyes and touch; and we can receive and convey into our minds the ideas of the extension, figure, motion, and rest of bodies, both by seeing and feeling.

The view I advocate denies that the Molyneux patient sees either a circle or a sphere. But here, Locke seems to clearly state that we *see* shape. Does this not straightforwardly contradict SPV?[9]

This tension is serious. But the first thing to note in response is that it cuts both ways: although SPV is inconsistent with the content of II.viii, views that maintain the Molyneux patient *do* see shape are inconsistent with the contents of II.xiii.5. What are we to make of this interpretive confusion?

In an orthogonal debate of Lockean scholarship, namely, how he conceives of ideas, a common charge is that Locke's thinking on the point is muddled (Aaron, 1971; Ryle, 1968; Woolhouse, 1971). He switches, variously, between two distinct conceptions of ideas depending on where one is at in the *Essay*. Perhaps, what our discussion of SPV shows is that, when it comes to the perception of figure, Locke's theory is similarly muddled. Locke holds, inconsistently, that vision supplies us with just sensible points, and that vision supplies us with more intricate spatial ideas, such as circles and squares. Locke swaps between different conceptions of shape perception in different portions of the

[8]Ehli (2023) makes a similar point as well.

[9]Note that these passages would also contradict the minimal view, at least prima facie.

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Essay.[10] So, although it stops short of offering a unified Lockean theory of shape perception, as other theorists aim to do, the preceding discussion nevertheless highlights a hitherto unexamined view of shape perception operative within the pages of the *Essay*, one that likely explains why Locke answered no to the Molyneux question. It just is not the only one!

But is a stronger response available to the proponent of SPV? Is there a way of reading the passages I have highlighted that remains consistent with the view? I think so.[11] This is because SPV does not deny that we perceive figure or shape. It just denies that we perceive any figure or shape bigger than a sensible point. Allow me to explain.

Recall that Locke defines figure as the termination of extension (Locke, 1979a, *Essay* II.xiii.5). Thus, any sensible point will have some sort of figure, since it will have some sort of termination of its extension. Sensible points, thus, are not *shapeless*. So, it is true that, properly speaking, we see shape. But when it comes to something like a sphere on a table, something that occupies a larger portion of the visual field, we do not *see*, properly speaking, the shape of the sphere. We see the shape of the many sensible points that make it up and combine these together via an act of the understanding. Again, on my view, it is precisely this operation that Locke describes when he writes.

> from that which is truly variety of shadow or colour, collecting the figure, it makes it pass for a mark of figure, and frames to itself the perception of a convex figure and an uniform colour; when the idea we receive from thence is only a plane variously coloured, as is evident in painting. (Locke, 1979a, *Essay* II.ix.8)

This quote is, on the face of it, somewhat confusing. What does Locke mean when he says we collect figure to make it pass as a mark of figure? On my reading of Locke, what he is here describing is the collection of sensible points by the understanding. We take these smallest discernible points of extension, which themselves have a shape, and combine them together to create a bigger shape—such as that of a sphere.

This sort of view—where we perceive small shapes (i.e., sensible points) and use them, by way of the understanding, to produce larger shapes—as a matter of fact mirrors how Locke thinks of our perception of *number*. Locke lists *number* as a simple idea we perceive (Locke, 1979a, *Essay* II.vii.9). But he also, in later sections of the *Essay*, lists *number* as a simple mode—and thus a complex idea (Locke, 1979a, *Essay* II.xvi). Is this not also a contradiction? It is not. This is because the claim that we perceive number is ambiguous between two possibilities. Imagine you are looking at a blank screen containing two dots. Do you have a single perceptual representation of two dots or two distinct perceptual representations of an individual dot combined together? Contemporary work on numerical cognition endorses the former (Sun & Sun, 2021). But Locke endorses the latter. When he says we perceive number, what he means is that each perceptual idea we have imprints on the mind the idea of *unity* or *oneness*. As he writes:

> Amongst all the ideas we have, as there is none suggested to the mind by more ways, so there is none more simple, than that of unity, or one: it has no shadow of variety or composition in it: every object our senses are employed about…brings this idea along with it. (Locke, 1979a, *Essay* II.xvi.1)

This smallest unit gets added together in order to make our more complex number ideas:

> By repeating this idea in our minds, and adding the repetitions together, we come by the complex ideas of the modes of it. Thus, by adding one to one, we have the complex idea of a

[10]One might wonder, if this is the conclusion we reach, *why* Locke holds inconsistent views regarding figure perception. As an anonymous referee points out, one possibility comes from Ott (2020), who highlights a distinction between the theory Locke develops early in Book II, and that he develops later.

[11]Thanks to an anonymous referee for pushing me to expand more on this point.

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> couple; by putting twelve units together, we have the complex idea of a dozen; and so of a score, or a million, or any other number. (Locke, 1979a, *Essay* II.xvi.2)

So we see that Locke's claim about number perception do not entail a contradiction, because *there is a distinction between the numbers we perceive and those that are complex ideas.*

The SPV argues that Locke holds the same position regarding how we perceive extension and figure/shape. When we gaze upon an expanse of extension (such as a sphere) all that is *properly perceived* is the smallest discernible units of extension—the sensible points. Any portion of extension bigger than these sensible points is like the number two: a complex idea formed by adding simple ideas together. And, since any point of extension will have terminations (otherwise—it would not be a minimum point *of extension*!), sensible points also have some sort of figure or shape, on Locke's view. This makes sense. What does it mean for something to be extended, but lack shape? This seems impossible. But any shape bigger than a sensible point is not itself properly perceived—it is a complex idea, created by the understanding.

Thus, on the reading I am proposing here, there is no tension between earlier and later portions of book II of the *Essay*, because Locke draws a distinction between the sorts of figure we properly perceive, and the sorts of figure that are instead complex ideas generated by the understanding. Those figures crucial to the Molyneux patient's success in her task fall in the latter camp.

Indeed, Locke seems to gesture at this sort of distinction when starting his discussion of simple modes of space. There he writes:

> Though in the foregoing part I have often mentioned simple ideas, which are truly the materials of all our knowledge; yet having treated of them there, rather in the way that they come into the mind, than as distinguished from others more compounded, it will not be perhaps amiss to take a view of some of them again under this consideration. (Locke, 1979a, *Essay* II.xiii.1)

Here, Locke seems to clearly see a need to return to his discussion of the various simple ideas he has earlier mentioned and thus seems to be admitting that these earlier discussions contained in them some ambiguities. And this is just what SPV proposes: that by looking at later sections of the *Essay*, we can get a better understanding of how Locke views our perception of space.

Conclusion

Here, I have aimed to present a novel view of Lockean spatial perception. I have argued that, contrary to other views in the literature, Locke believes we see an array of sensible points, and it takes a further act of the understanding to construct these sensible points into the experiences we all enjoy. I have argued that this view can explain Locke's negative answer to the Molyneux question in a way that remains consistent with his antinativism and views on the passivity of perception and can even explain certain supposed tensions in earlier and later portions of the *Essay*.

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