

Locke's Resemblance Theses

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1 Preparatory Remarks

Locke asserts that “the *Ideas of primary Qualities of Bodies, are Resemblances of them, and their Patterns do really exist in the Bodies themselves; But the Ideas, produced in us by these Secondary Qualities, have no resemblance of them at all.*”¹ On an unsophisticated way of taking his words, he means that ideas of primary qualities are like the qualities they represent and ideas of secondary qualities are unlike the qualities they represent.² I will show that if we take his assertions in this unsophisticated way, our reward will be a straightforward and satisfying interpretation of the central arguments of his chapter on primary and secondary qualities. With these arguments, Locke attempts to justify his assertions about resemblance.

Some may be skeptical, thinking that the assertions, interpreted literally, are either too absurd or too obvious to have reasons supporting them. I take this skepticism to rest on deep foundations of charity, so half of the paper will be devoted to undermining these foundations by giving a sympathetic and historical exposition of Locke's positive thesis that primary qualities resemble the ideas that represent them. I criticize rival interpretations of Lockean resemblance, say what it means to believe that ideas resemble qualities, explain the plausibility of the belief in Locke's environment, and examine his descriptions of how ideas resemble particular primary qualities. Once I establish that we should take Locke's resemblance theses literally, I can describe their place in his theory of representation. After that, I can describe his reasons for believing the resemblance theses. I will conclude by showing how Locke's belief that ideas of secondary qualities do not resemble anything in bodies leads him to conclude that secondary qualities are merely powers to produce ideas.

Let me begin near the end, however. Before defending a literal interpretation of the resemblance theses, I want to criticize three rival interpretations. In order to motivate two of these rivals, I need to make a quick pass over our destination and give an abridged account of Locke's argument for his theses.

He seems to suppose that they follow from his corpuscularian explanation of sense perception. At 2.8.11, on the grounds that the alternatives are inconceivable, he argues that the bodies involved in

perception only interact by impulse. From this doctrine of physics, and the premise that the bodies we perceive at a distance must causally interact with our sense organs, he concludes that unperceived intermediate bodies must be knocking about between the perceived objects and our senses (2.8.12). Locke spends three sections on the resulting theory of perception. He devotes one section to the perception of extension, figure, number, and motion, one to the perception of color and smell, and one to the perception of taste and sound, and conceives of the production of all these ideas as occurring “after the same manner . . . viz. by the operation of insensible particles on our Senses” (2.8.13).³ After giving these parallel accounts of the production of ideas, Locke concludes that “it is easie to draw [the] Observation” that ideas of primary qualities resemble the corresponding qualities in bodies and ideas of secondary qualities do not (2.8.15). Commentators attempting to understand Locke’s notion of resemblance have naturally begun by trying to understand his puzzling inference from premises concerning the physics of perception to a conclusion concerning the relation between qualities and our ideas.

2 Literal Resemblance

2.1 *Literal Resemblance and Three Rival Interpretations*

One group of interpreters emphasizes Locke’s allusions to the scholastic theory of perception. On this theory, at least as most early moderns understand it, bodies transmit real qualities through transparent media. These qualities or species fly through the air, strike our sense organs, and inhere there.⁴ Locke explicitly associates the term ‘resemblance’ with the scholastic theory of perception in his “Examination of P. Malebranche’s Opinion of Seeing All Things in God” (see Woolhouse 1977, 95-96; Heyd 1994, 16). There he describes as “learned gibberish” the “peripatetic doctrine of the species” that “material species, carrying the resemblance of things by a continual flux from the body we perceive, bring the perception of them to our senses” (Locke 1823, 9:215). By denying that the ideas of secondary qualities resemble anything in bodies, Locke intends in part to reject the scholastic theory of perception.

Edwin McCann (1994, 64) and Thomas Heyd (1994, 13) imply that this background alone should enable us to understand the resemblance theses (see also Palmer 1974). However, as John Carriero observes (1990, 28-30), even if the contrast with scholastic theory explains the meaning of Locke’s negative thesis that secondary qualities do not resemble our ideas of them, this contrast cannot explain his positive

thesis that primary qualities do resemble the ideas that represent them. Locke does not believe that scholastic theory adequately explains our perception of primary qualities. After all, he does not believe that disembodied forms of bulk, figure, number, and solidity fly across the air and strike our eyes. From the standpoint of the twentieth century, the positive thesis is the puzzler. Like Berkeley,⁵ we have no difficulty seeing how ideas of secondary qualities might not resemble something outside the mind; the difficulty lies in seeing how any ideas might.

I do not mean to underestimate Locke's interest in refuting the scholastic theory of perception. Still, those who limit his claims to a rejection of scholasticism only provide us with an interpretation of one of two resemblance theses; they do not interpret his contention that ideas of primary qualities resemble qualities of bodies.⁶ I want to pursue the unexplained remnant.

A second interpretation of the resemblance theses results from tailoring Locke's conclusions about resemblance to fit the argument that precedes them. Several commentators have done this by interpreting his notion of resemblance so that an idea 'resembles' its quality just in case the quality explains the production of its idea. For instance, Jonathan Bennett (1971, 106) writes that

since ideas cannot resemble either bodies or qualities of bodies, [Locke's theses] must be either discarded or transformed. The only plausible transformation is into something like the following: in causally explaining ideas of primary qualities, one uses the same words in describing the causes as in describing the effects (shape-ideas etc. are caused by shapes etc.); whereas in causally explaining ideas of secondary qualities one must describe the causes in one vocabulary and the effects in another (colour-ideas etc. are caused by shapes etc.). If this is not what Locke's 'resemblance' formulations of the primary/secondary contrast mean, then I can find no meaning in them.

Edwin Curley less reluctantly gives a similar account (1972, §5). Plainly, Bennett's reluctance is understandable. One could stipulate that by 'resemblance' one means the relation that holds between a quality and its idea when the quality helps to explain the production of the idea. However, Locke does not thus stipulate and without some such special linguistic background, the English word cannot bear that meaning.⁷

Bennett and Curley sweep resemblance under the rug by asserting that Locke is merely obscurely reiterating what he said in §§11-14. Such an approach does not judiciously confront the resemblance theses. Locke does believe that all and only those qualities that resemble ideas explain the workings of perception, but surely he does not suppose that is what the word ‘resemblance’ *means*.

According to a third interpretation, resemblance is just accuracy of representation. An idea of a quality resembles that quality in a body just in case the body has that quality. A. D. Woozley (1964, 34-35) advances this interpretation in the introduction to his edition of the *Essay*.⁸ As Michael Ayers points out (1986, 21f.), such an interpretation domesticates Locke’s notion of resemblance and avoids the baffling implication that anything in the mind actually takes on a shape when we contemplate that shape.

On Woozley’s reading (1964, 34), when Locke denies that the ideas of secondary qualities resemble the corresponding qualities, he denies that bodies actually have secondary qualities. However, we may be confident that Locke believes that some objects actually are red, some are loud, and some are bitter. He repeatedly asserts that secondary qualities are powers to produce ideas in us (at 2.8.14, 15, 23, 24, 26 and elsewhere); for example, a fire’s heat and color are its powers to produce the corresponding ideas (2.23.7). Since fire manifestly does have these powers, it follows on his account that it is hot and red. We may infer that something is wrong with Woozley’s account.

I should say on Woozley’s behalf that Locke does not think that snowballs are white in the primary sense of ‘white’. Nor does Locke think that the idea of white represents them as well as the idea of round does. Nevertheless, he does believe that the word ‘white’ applies to snowballs in a derivative sense and that the idea of white represents them adequately enough. Understanding why he believes that snowballs are not white in the primary sense and why he believes that they are imperfectly represented by the idea of white requires understanding why he believes that nothing in snowballs resembles the idea of white. That will have to wait until we understand what he means by resemblance.

2.2 *Literal Resemblance and a Veil of Imagery*

To determine what Locke means by asserting that ideas can resemble something in bodies, we should determine what sort of mental entity the relevant ideas are supposed to be. The revisionist suggestion from John Yolton and others that Locke is a crypto-direct realist has spawned a vast secondary

literature.⁹ I do not want to go into this debate except to say that I entirely agree with Nicholas Wolterstorff's assessment of the evidence: "What emerges is that certain passages are ambiguous. All the clear ones, however, seem to me to be in favor of the interpretation of ideas as mental objects" (1996, 16n).¹⁰

Given the state of the evidence, I say that we should embrace the traditional interpretation. Locke believes that ideas are intermediate entities between the world and us and that these ideas constitute a veil of appearance epistemologists have to reckon with. We should take him seriously when he tells us that "the Mind knows not Things immediately, but only by the intervention of the *Ideas* it has of them" (4.4.3). We should also take him seriously when he asks, "How shall the Mind, when it perceives nothing but its own *Ideas*, know that they agree with Things themselves?" (ibid.) I will explain Locke's answer in §3 after setting up a literal interpretation of the resemblance theses.

Some Lockean ideas are mental images and some of them are not. A text that shows this nicely is at 4.3.19. Locke tells us that geometrical "diagrams drawn on Paper are Copies of the *Ideas* in the Mind, and not liable to the Uncertainty that Words carry in their Signification." In contrast, we cannot use written copies of our "*moral Ideas*, we have no sensible marks that resemble them, whereby we can set them down" (see Ashworth 1984, 69-71).¹¹ Any mental entity you can draw a picture of is an image. Lockean ideas of figures are images of figures, something like the images cast on the back wall of a *camera obscura* (2.12.17).

Recognizing the importance of images among Lockean ideas moves us towards a sensible literal interpretation of the resemblance theses. It is easier to see how Locke can believe in square mental images than to see how he can believe in square thoughts. I want to consider two initial difficulties with this line of interpretation before arguing that the positive resemblance thesis, taken literally, is a plausible doctrine in Locke's intellectual environment.

The first difficulty is that focusing on mental imagery restricts our inquiry to ideas received through sight. For the most part, this is not an obstacle to understanding the resemblance theses. Since Locke believes that sense organs other than the eyes produce mostly ideas of secondary qualities, there is no need to figure out what he means by saying that these ideas resemble something in bodies; he says nothing of the sort. If we must speculate, perhaps Locke hypothesizes that his opponent thinks of smells,

tastes, sounds, and warmth as stuffs and thinks of having the idea of one of these qualities as a matter of having some of that stuff in the brain or in the mind.

Though it is somewhat idle to wonder what Locke would mean if he said that ideas of non-visual secondary qualities resembled something in their causes, my focus on imagery does threaten to neglect the idea of solidity, since he believes that we get that idea only through touch (2.3.1). I do, in fact, believe that solidity poses special difficulties for his account. You may, in turn, suspect that solidity poses special difficulties for my interpretation of his account. In any case, I promise to address the quality.

The second difficulty is that images are primarily of things and not of qualities of things. When Locke discusses his paradigmatic resembling ideas, ideas of figure, he gets over this difficulty through loose use of language. We ought to distinguish between, for example, a square, which is a regular four-sided polygon, and a squareness, which is a quality that inheres in a square.¹² Squares have four sides, but a squareness is not the sort of thing that can have sides. Since both the geometrical entities that bodies resemble and the geometrical qualities that bodies possess may be called figures, Locke can slide between the two by discussing the ideas of triangle, circle, and square as if they were ideas of qualities.

This kind of slide is more difficult to make with other qualities. To make sense of Locke's treatment of some ideas as images, we need to find some connection between images and simple ideas. Ayers offers the helpful proposal that "simple ideas are not so much parts as aspects of what is presented in experience" (1991, 1:17). Unfortunately, the texts he cites in defense of his interpretation are at best inconclusive (*ibid.*, 1:49-51). Still, the reading has its attractions, including the more congruous interpretation of the positive resemblance thesis that flows from treating simple ideas of qualities as aspects of more complex images. If some simple ideas are aspects of images, just as qualities are aspects of bodies, it will be easier to make sense of a resemblance between a simple idea and a quality.

I should admit that most of what Locke says suggests that simple ideas are components of complex ideas and not aspects of them (for example, at 2.2.2 and 2.11.6). His belief that we construct complex ideas out of the raw data of the senses guides some of his remarks (2.2.1). On the other hand, if we follow Locke's instructions, we will think of a visually received idea of a refrigerator as an image. I find it difficult to think of the ideas of rectangle, white, unity, existence, and height as literal parts of that image. I suspect that his blanket use of the term 'idea' fosters looseness in his theory.

By saying that a complex idea strictly resembles a body with respect to F, I mean that the idea is F and the body is F. Along the same lines, a simple idea of F strictly resembles a quality in a body, if the idea is an aspect or component of a complex idea, and the complex idea strictly resembles the body with respect to F. Literal resemblance does not require strict resemblance. The plastic Statues of Liberty on sale in the gift shop resemble the original without metaphor or partial truth, even though they may not possess exactly the same shape or color as the original. Strict resemblance is the limiting case of literal resemblance. I bring it up only to help explain what I mean when I say that I want to interpret Locke's resemblance theses literally.

Locke implies that resembling ideas represent by exemplifying, which is to say that they represent in virtue of sharing or nearly sharing some attribute with the body they depict. Consider the equivalence he draws between resembled qualities and patterns. In 2.8.15 he writes, "the *Ideas of primary Qualities* of Bodies, are *Resemblances* of them, and their patterns do really exist in the Bodies themselves" (see also 2.30.2). A pattern is an exemplar from which copies are supposed to be made. Not every aspect of the pattern is usually supposed to be copied, but at least one attribute should belong to the exemplar and the imitation, at least approximately. Perhaps this point is otiose. After all, the term 'resemblance' itself connotes that the resembling objects share or come close to sharing some attribute. Still, the connection between resemblance and exemplification drives the point home.

Most commentators have resisted literal interpretations of the resemblance theses, in part because they think that on such an interpretation the positive resemblance thesis would be too crazy to for Locke to believe.¹³ An interesting exception is Ayers. He believes that Locke intends the positive resemblance thesis literally, but Ayers hates the thesis thus interpreted so much that he only indirectly attributes it to Locke. After criticizing the Yoltonian interpretation of Lockean ideas, he writes,

the notion of 'resemblance' between ideas and qualities, and the remark that 'A Circle or Square are the same, whether in *Idea* or in Existence', now take on a disturbing ambivalence, being open both to the 'charitable' [Yoltonian] interpretation and to one which is considerably more problematic (1991, 1:64-65).

What is it about the interpretive ambivalence that Ayers finds so disturbing? I suggest that his caution and his distress result from attributing an opinion to Locke that he takes to be not just mistaken, but inconceivable.

I personally do not think that Locke's opinion is especially scandalous, but that does not matter. For exegetical purposes, the important question is not whether the positive resemblance thesis, literally interpreted, seems crazy to us, but whether it would seem crazy to a competent seventeenth century philosopher. In fact, at the time, it is a perfectly ordinary view. In the next sub-section, I defend this assertion by describing the traditional view that mental images are figures traced upon the organ of the soul. I begin by describing Aristotle's treatment of corporeal imagery, since his ghost haunts Locke's philosophy, and I go on to describe an exchange between Gassendi and Descartes on the subject. I finish the sub-section by explaining Locke's idiosyncratic reaction to this background.

2.3 *Literal Resemblance and Corporeal Images*

Locke is taught Aristotelian philosophy at Oxford and he teaches it to students as a tutor. He does not appreciate this philosophical education much, but some of it sticks. In *On Memory and Recollection*, Aristotle declares that memory is the possession of something "like a sort of picture" (450a25-30).¹⁴ He seems to think that this picture is mechanically produced, since he calls it "a sort of imprint, as it were, of the sense-image" and says that it is produced by perception "as people do who seal things with signet rings" (450a30-31).¹⁵ Aristotle's cautious language suggests that he may be speaking metaphorically, but the piece of speculative physiology that follows these statements resists such an interpretation. He conjectures that

this is also why memory does not occur in those who are subject to a lot of movement, because of some trouble or because of their time of life, just as if the change and the seal were falling on running water. In others, because of wearing down, as in the old parts of buildings, and because of the hardness of what receives the affection, the imprint is not produced. And this is why the very young and the old have poor memory, since they are in a state of flux, the former because they are growing, the latter because they are wasting away (450a32-450b6).

Aristotle surmises that this sort of consideration can also explain why neither the clever nor the dimwitted have good memories, “for the former are too fluid, the latter too hard. Therefore with the former the image does not remain in the soul, while with the latter it does not take hold” (450b8-450b10). If this is a flight of metaphor, it is a long and acrobatic one (see Sorabji 1992, 221).

I do not mean to suggest that this is all that Aristotle believes that there is to memory. In book one of *De Anima*, he asserts that anger has matter and form. Its matter is “the boiling of the blood and hot stuff round the heart” while its form is “a desire for retaliation or something of the sort” (403a31-34). As Richard Sorabji points out, he would presumably say something similar about memory (Aristotle 1972, 14-16). Nevertheless, even if a physical impression on the organ of the soul is not all that there is to memory, there is at least that much. According to Aristotle, memory requires possessing a literally extended image.

Locke’s chapter “Of Retention” reprises some aspects of Aristotle’s *On Memory and Recollection*. Like Aristotle, Locke is tempted to speculate about the physiological basis of memory, including guesswork about the malleability of the organ of thought. He tells us that he will not inquire

whether the Temper of the Brain make this difference, that in some it retains the Characters drawn on it like Marble, in others like Free-stone, and in others little better than Sand, . . . though it may seem probable, that the Constitution of the Body does sometimes influence the Memory; since we oftentimes find a Disease quite strip the Mind of all those *Ideas*, and the flames of a Fever, in a few days, calcine all those Images to dust and confusion, which seem’d to be as lasting, as if grav’d in Marble (2.10.5).

Locke warily associates ideas with images drawn on the brain.

As I said, Locke does not enjoy his scholastic education. He tells Lady Masham that “the first books . . . which gave him a relish of philosophical studies were those of Descartes” (Cranston 1957, 100; see also Milton 1994a, 39). There are, moreover, deep doctrinal similarities between Locke and Pierre Gassendi, and historians of philosophy have been at work tracing Locke’s debt to Gassendi (Michael and Michael 1990; Jones, 1985).

With this in mind, consider the following exchange between the Frenchmen. Gassendi tells Descartes that “I do not so much dispute that you have an idea of body as insist that you could not have

such an idea if you were really an unextended thing". In defense of this insistence, Gassendi launches a long series of pointed questions:

For how, may I ask, do you think that you, an unextended subject, could receive the semblance or idea of a body that is extended? If such a semblance comes from a body then it is undoubtedly corporeal, and has a number of parts or layers, and so is extended. If it is imprinted in you from some other source, since it must still represent an extended body, it must still have parts and thus be extended. For if it lacks parts, how will it manage to represent parts? If it lacks extension, how will it represent an extended thing? . . . It seems, then, that the idea does not wholly lack extension. Yet if it is extended, how can you, if you are unextended, have become its subject? How will you adapt it to yourself or make use of it? (Descartes 1984-85, 2:234)

Gassendi believes that ideas of extended things must resemble the things they represent. Descartes paraphrases Gassendi's challenge as a request to explain "how I think that I, an unextended subject, could receive the semblance or idea of a body that is extended." He replies temperately that

the mind does not receive any corporeal semblance; the pure understanding both of corporeal and incorporeal things occurs without any corporeal semblance. In the case of imagination, however, which can have only corporeal things as its object, we do indeed require a semblance which is a real body: the mind applies itself to this semblance but does not receive it (ibid., 2:265).

He takes Gassendi's talk of resemblance literally, and he does not treat the challenge as if it were foolish.

In his response, Descartes alludes to his theory that the soul inspects corporeal images on the pineal gland. In the earlier *Treatise on Man*, he asserts that the rational soul directly considers figures "which are traced in the spirits on the surface of gland H [the pineal gland] . . . when it images some object or perceives it by the senses" (ibid., 1:106).¹⁶

Gassendi and Descartes's belief that the mind sometimes contemplates a literally extended corporeal image is common in the 17th century (Michael and Michael 1989). Nicolas Malebranche, Robert Hooke, and Thomas Willis all share it (see Malebranche 1674-75/1996, 88-89; Macintosh 1983; Clarke and O'Malley 1996, 333-34).

Gassendi raises the puzzle of how an unextended soul can make use of an extended image. Far from impressed by the problem, Descartes believes that the soul's contemplation of corporeal images on the pineal gland plays a central role in perception and helps anchor the soul to its body. Locke avoids confronting Gassendi's problem by declaring that it is not his topic. His remarks about the malleability of the brain notwithstanding, he generally shies away from the sort of physiological speculation that Descartes undertakes in the *Treatise on Man* and in *The Passions of the Soul*.¹⁷ Near the beginning of the *Essay*, Locke stipulates that

I shall not at present meddle with the Physical Consideration of the Mind; or trouble my self to examine, wherein its Essence consists, or by what Motions of our Spirits, or Alterations of our Bodies, we come to have any Sensation by our Organs, or any *Ideas* in our Understandings; and whether those *Ideas* do in their Formation, any, or all of them, depend on Matter, or no. These are Speculations, which, however curious and entertaining, I shall decline, as lying out of my Way, in the Design I am now upon (1.1.2).

For our purposes, we should note his statement that he will not examine whether any or all of our ideas depend upon matter.

Instead of the physical consideration of the mind, Locke proposes to use what he calls a "Historical, plain Method" to "consider the discerning Faculties of a Man, as they are employ'd about the Objects, which they have to do with" (ibid.). Judging by the book that follows this proposal, the historical, plain method consists in examining the evidence provided by tales about other cultures, anecdotes about the blind and mad, observations of children and animals, and careful and skeptical introspection. It does not include the dissection of the eye or brain, nor does it include positive conjectures about the relations between mind and body or ideas and animal spirits.

Locke's declaration that he will not pursue the physiology of the mind is remarkable since he knows more about physiology than his peers. As J. R. Milton observes (1994a, 39), "he was alone among the major philosophers in coming to the mechanical philosophy from medicine". Locke's knowledge of medicine teaches him modesty (see Yost 1951, 129).

John Norris, an English Malebranchian, wants Locke to say whether he believes that ideas are corporeal, asserting that until the nature of ideas is explained "all further Discourse about them is but to

talk in the *Dark*" (1690/1961, 3). In Locke's *Essay*, Norris complains, this task is "wholly omitted and passed over in deep silence; which I cannot but remark, as a *Fundamental* defect in this Work" (*ibid.*, 2-3).

Locke responds with churlish vigor:

Perhaps I was lazy and thought *the plain historical method* I had proposed to myself was enough for me perhaps I had other business and could afford no more of my time to these speculations, nay possibly I found that discovery beyond my reach and being one of those that do not pretend to know all things am not ashamed to confess my ignorance in this and a great many other . . . There are some happy geniuses who think they either are not or ought not be ignorant of anything . . . If you once mention ideas you must be presently called to an account *what kind of things you make these same ideas to be* though perhaps you have no design to consider them any further than as *the immediate objects of perception* or if you have you find that they are a sort of sullen things which will only show them what but will not tell you whence they came nor whither they go nor what they are made of and yet you must be examined to all those particulars whether they be *real beings* or no, in the next place whether they be *substances or modifications of substances* and whether they are *material or immaterial substances* and then upon their being material you must answer to an hundred solid questions (Locke 1971, 10-11).

All right, then. An idea is an immediate object of perception and, as such, "can be no other but such as the Mind perceives it to be" (2.29.5). Even so, ideas have their mysteries, mysteries that Locke does not believe that the plain historical method can solve.¹⁸ He does not pretend to know whether ideas are corporeal.

Since corporeal images possess primary qualities and Locke does not think it absurd that ideas might be corporeal images, he does not think it absurd that ideas might possess primary qualities. Conceding that much does not yet concede that Locke could rationally unconditionally believe the positive resemblance thesis. I say that he straightforwardly believes that ideas of primary qualities resemble primary qualities, and I say that he believes that ideas may be incorporeal. In order for my interpretation to be right, he must countenance the possibility that incorporeal ideas possess primary qualities

Four considerations, side by side, convince me that Locke does not reject the possibility that primary qualities might inhere in incorporeal ideas. First, the possibility that ideas might possess primary qualities is in the intellectual culture and rejecting that possibility outright would require taking a stand on a question that seems insoluble to Locke. Second, the laws of logic do not demand that everything extended be corporeal. After all, the images cast by a slide projector are extended and incorporeal. (I call these images incorporeal since their colors do not inhere in any body. The screen remains white throughout the slideshow; light is not paint.) Third, Locke is an unusually imaginative philosopher. He may have been the first human being to think of the inverted spectrum (2.32.15), a child raised in a black and white world (2.1.6), and multiple souls undetectably animating a single person (2.27.10, 13). Fourth, the point of view that makes it hardest to conceive of extended incorporeal ideas is the point of view that Locke refuses to adopt. Using introspection or the other tools of the plain, historical method, a philosopher can raise up a mental image and consider it as extended and shaped. A much harder task: thinking of the soul as an immaterial substance with ideas as its immaterial modes while imagining that these modes might somehow be extended. For the most part, Locke refuses to take up this point of view, except to illustrate the limits of human understanding. Perhaps people cannot know more by willfully closing their minds to certain perspectives. Nevertheless, they can imagine more that way.

I am not asking the reader to imagine that mental images are extended and shaped. I am asking the reader to imagine that Locke believes that mental images are extended and shaped. All of this is groundwork. I want to prepare the possibility that he has this belief so that when I present supporting texts, they are not dismissed or reinterpreted.

2.4 *Literal Resemblance and Particular Primary Qualities*

Locke explicitly asserts that figures exist in ideas just as they exist in bodies. At 2.8.18 he writes, “A Circle or Square are the same, whether in *Idea* or Existence.” At 4.4.6 he writes, “Is it true of the *Idea* of a *Triangle*, that its three Angles are equal to two right ones? It is also true of a *Triangle*, where-ever it really exists.” These passages imply that our ideas have shapes and that these shapes have geometrical properties. If it is a mistake to say that images have figures in the same sense that bodies do, then Locke makes that mistake.

Consider his remarks about looking at a uniformly colored globe: “’tis certain, that the *Idea* thereby imprinted in our Mind, is of a flat Circle variously shadow’d, with several degrees of Light and Brightness coming to our Eyes” (2.9.8). On its own, this quotation proves nothing; all Locke says is that the imprinted idea is of a circle, not that it is a circle. However, he goes on to assert that “the *Idea* we receive from [the globe], is only a Plain variously colour’d, as is evident in Painting.” He believes that the received idea not only is of a circle variously colored, but it actually is a circle variously colored, akin to the ones we see in paintings (compare Goodman 1977, chapters 8, 10).

It should be uncontroversial that Locke believes that we can number ideas just as we can number bodies. According to him, “Number applies it self to Men, Angels, Actions, Thoughts, every thing that either doth exist, or can be imagined” (2.16.1). For what it is worth, Frege approvingly quotes this passage in §24 of *The Foundations of Arithmetic*.

Someone might retort that this resemblance is irrelevant. Though three images may be three in number in the same sense as three mice, an image of three mice is just one image. True enough, but an image of three mice is threefold in a certain way; it has three salient parts. Perhaps this is not enough for strict resemblance, but it puts the relation between an image of three mice and three mice within the outer limits of literal resemblance. Notice that not all things that represent multiplicities resemble their objects in this way. The phrase ‘the Chicago Seven’ represents seven people, but it does not contain seven salient parts.

We may also take the positive resemblance thesis literally when it comes to motion, though Locke has a complicated account of the perception of motion. He gives the following example of the idea of motion at work: “A piece of *Manna* of a sensible Bulk, is able to produce in us the *Idea* of a round or square Figure; and, by being removed from one place to another, the *Idea* of Motion. This Idea of Motion represents it, as it really is in the *Manna* moving” (2.8.18). On a quick reading, one might think that this supports Wozzley’s interpretation. The idea of motion properly represents the fact that the manna is moving. Locke, however, does not say that the idea of motion represents the manna as the manna really is. He says rather that the idea of motion represents motion as motion really is. How does the idea of motion represent motion so aptly?

Locke's most interesting treatment of the perception of motion occurs in his chapter on duration. He wants to show that the idea of duration does not necessarily depend upon the idea of motion.¹⁹ He begins by asserting that if we are to see a motion as motion, it needs to produce "a continued train of distinguishable *Ideas*" (2.14.6). The individual ideas in this succession do not suffice to produce the idea of motion (ibid.); the individual ideas in any succession, however made, "include no *Idea* of Motion in their Appearance" (2.14.16).

Locke tells us that witnessing two bodies moving relative to one another at a moderate pace produces a succession of ideas in our minds. He implies that the idea of motion is an aspect of one of these trains of ideas, though not of any individual idea in the train. I suggest that Locke has a film reel conception of the appearance of motion. No individual frame in the reel has the appearance of motion, but, as played out in the theater of mind, the sequence of frames does. If we take this conception of the idea of motion and consider it in light of Locke's assertion that motion is "nothing but change of distance between any two things" (2.13.14),²⁰ we get the following account of how the idea of motion can resemble motion in the world. An idea of motion is an aspect of a succession of ideas representing the positions of a body. If the ideas of position resemble the relevant positions—if the individual frames are reasonable likenesses with respect to position—and the elapsed durations are about the same, then the idea of motion accurately represents and literally resembles the motion out in the world.

A passage in Locke's "Examination of Malebranche's Opinion" suggests that we take resemblance literally for extension as well. There, after arguing that Malebranche commits himself to the proposition that ideas are spiritual substances, Locke remarks "how inconceivable it is to me, that a spiritual, *i.e.* an unextended substance, should represent to the mind an extended figure, *v.g.* a triangle of unequal sides, or two triangles of equal magnitudes" (1823, 9: 219). We should be cautious in applying this text to our present project for two reasons. First, Locke believes that human understanding is too weak for the inconceivability of an opinion to entail its falsity (4.3.6). He reiterates this belief throughout the "Examination of Malebranche's Opinion." Second, he may believe that the putative substantiality of Malebranchian ideas makes it less conceivable that they represent extended things without being extended themselves. Notwithstanding these two reasons for caution, the passage indicates that Locke feels the tug of Gassendi's intuition that only extended ideas can represent extended things.

If mental images are pictures in the brain, then they will be literally extended, though there will be a small upper bound on their size. The pineal gland, for instance, is about the size of a pea. Corporeal ideas could not strictly resemble bodies bigger than a breadbox with respect to determinate length. Still, given a comparison with other corporeal images and the laws of perspective, we know what an assertion of literal resemblance amounts to. If someone inspecting a drawing of the Statue of Liberty complains that the portion representing the torch is too small to resemble the original, she is not demanding the torch be drawn life sized.

Lockeans may hesitate before saying that incorporeal ideas might be measurable in inches; perhaps they will deny that adherents of the plain, historical method should try to hold a ruler up to a mental image. Still, we can guess how they would apply some length predicates to ideas. My first inclination is to say that my image of the Statue of Liberty is taller than it is wide, for example. Mental images take up a certain portion of the visual field, and we have a large amount of control over how much of the visual field they occupy. One mental image of the Statue of Liberty can be larger than another, and not because the first represents the statue as larger. If one mental image takes up more of the visual field than a second does, then the first is larger than the second. To speak that way is not to speak in metaphors. Indeed, the sizes of mental images have been subjected to extensive and ingenious empirical investigation (Kosslyn 1980, 35-91).

So there is a possible Lockean view according to which incorporeal ideas may be taller than they are wide although they are not measurable in inches. On this view, ideas literally resemble bodies with respect to *taller than wide* but not with respect to *1/4 of an inch wide*. Should the advocate of such a view say that ideas literally resemble bodies with respect to *extended*? I think so. I would rather admit that there are extended things that cannot be measured in inches than admit that anything non-extended is taller than it is wide. Philosophers whose ontology includes the unit circle from analytic geometry probably consider that circle to be an extended thing not measurable in inches.

The Lockean view I have been sketching may be Locke's view. It is possible, however, that he adopts a more extreme line. In a later response to Norris, he writes that "an idea of a circle, of an inch diameter, will represent, where, or whensoever existing, all the circles of an inch diameter; and that by abstracting from time and place" (1823, 10:250).²¹ Is it possible that we should take the punctuation seri-

ously and that Locke intends to assert that some ideas are an inch wide? I would not put it past him. Although the rules of punctuation are not settled in the 17th century, his description of the representation of size here echoes his description of the representation of shape at 4.4.6 of the *Essay*, and there, as we have seen, he emphatically asserts that ideas share geometrical properties with bodies.

However, we cannot say that Locke unreservedly believes that ideas strictly resemble bodies with respect to determinate size, since that would exclude the possibility of corporeal ideas. Though I do not suppose that reason demands that extended incorporeal ideas be in physical space or even in any space at all, corporeal ideas are just images traced on the organ of thought and thus cannot be larger than the brain. No one could possibly maintain that a circle and a corporeal idea of a circle could be both four feet wide in the very same sense; the human skull is not big enough for that. I conclude that the phrase “the idea of a circle, of an inch diameter” expresses a mere tendency in Locke’s thought. It does not establish that ideas are incorporeal on his considered view any more than his reference to characters drawn on the brain establishes the opposite. His earlier reply to Norris makes it clear that Locke’s considered answer to the question “Are ideas corporeal?” is “I don’t know.”

Locke is conspicuously silent about whether the idea of solidity literally resembles solidity. In fact, he does not mention solidity in the section containing the resemblance theses or in the preceding four sections defending the corpuscularian theory of perception. This means that he does not include an account of the production of the idea of solidity. Moreover, these sections contain four distinct lists of primary qualities that explain the production of ideas, and solidity is missing from them all.

On reflection, we should not expect Locke to say explicitly whether the idea of solidity literally resembles solidity. Since he believes that solidity is pretty much definitive of corporeality (2.4.2, 3.10.15), to settle that question would be to settle the question of whether the relevant ideas are corporeal. As we have seen, Locke intends to avoid the topic.

On my reading of the texts and the gaps in the texts, Locke wants to assert that ideas literally resemble bodies with respect to shape, and he wants to reserve judgment on whether they literally resemble bodies with respect to solidity. If this reading is right, then he is making conceptual room for a new thing, a mental image that is both literally shaped and incorporeal.

3 Locke's Theory of Representation

Literal resemblance matters to Locke; it plays a part in his explanation of how we can think about external things. As I have said, he believes that there is a serious question about how the mind can know that its ideas correspond to anything out in the world. He answers his own question by trying to show that “two sorts of *Ideas* ... we may be assured, agree with Things” (4.4.3).²² The first sort comprises simple ideas that correspond to the outside world by a causal connection. These

are not fictions of our Fancies, but the natural and regular productions of Things without us, really operating upon us; and so carry with them all the conformity which is intended; or which our state requires . . . Thus the *Idea* of Whiteness, or Bitterness, as it is in the Mind, exactly answering that Power which is in any Body to produce it there, has all the conformity it can, or ought to have, with Things without us (4.4.4).

Ayers nicely describes Locke as treating such ideas as “blank effects” and remarks that within Locke’s theory of perceptual knowledge “such effects represent external things . . . solely in virtue of their evident external origin” (1991, 1:62).

According to Locke, complex ideas that are not ideas of substance also assuredly agree with things. In my opinion, most of what he says about these ideas does not respond to the worry that our putative knowledge does not correspond to anything out in the world. Even so, Locke does offer an account of applied mathematics that rests on the putative similarity of ideas and bodies and thus describes a second way in which our knowledge may correspond to reality. It is in this context that he writes, “Is it true of the *Idea* of *Triangle*, that its three Angles are equal to two right ones? It is true also of a *Triangle*, where-ever it really exists” (4.4.6).

Ideas of figure are not mere blank effects. They do not just notify us of the presence of their causes. Considering them gives us interesting knowledge of things that resemble them, things of their sort. Since figures “are the same, where-ever, or however they exist” (ibid.) contemplating ideas of figure gives us universal truths, truths that apply not only to the triangles in our minds but also to triangular bodies. Ideas of figure represent what they resemble, and the mathematician does not intend to make assertions about objects that do not “agree with those his *Ideas*” (ibid.). Locke concludes that the mathematician “is sure what he knows concerning those Figures, when they have barely an *Ideal Existence* in his

Mind, will hold true of them also, when they have a real existence in Matter” (ibid.). Admittedly, these considerations alone do not show that any triangles reside in the external world, but Locke has said enough to offer an account of the possibility of applied geometrical knowledge.

He has also said enough to explain why he believes that ideas that represent through resemblance reveal more about bodies than ideas that represent solely through being an effect. By contemplating a resembling idea, we can think of a body as it is in itself. By contemplating more than one resembling idea, we can think how bodies relate to one another, independently of the ways that they affect our senses. As many commentators have recognized, Locke appeals to the causal ancestry of our ideas as a source of information about the outside world (Mackie 1976, 38-41, 62-67; Ayers 1991, 1:38-39, 155-57; Chappell 1994, 53-54). Though Locke puts less emphasis on resemblance, it is a more promising source. Ideas that resemble bodies do not just provide us with the knowledge that some object has the power to produce a certain idea, they also provide us with objective, instructive, universal knowledge of the world beyond the veil of appearance.

Locke is not the first to place resemblance in the center of a theory of representation. In *On Memory and Recollection*, Aristotle wonders how a memory can represent an absent object. He thinks that considering the less puzzling case of a “figure drawn on a panel” can ease the mystery. Such a drawing “is both a figure and a likeness,²³ . . . and one can contemplate it both as a figure and as a likeness” (450a21-24). Aristotle believes that the images of memory represent other things “in the same way.” Just as a drawing is a figure and a likeness, “one must also conceive the image in us to be something in its own right and to be of another thing. In so far as it is something in its own right, it is an object of contemplation or an image. But in so far as it is of another thing, it is a sort of likeness and a reminder” (450b24-27). The word Sorabji translates as ‘image’ is ‘phantasma’. ‘Phantasm’ is one of three philosophical terms Locke offers as acceptable substitutes for the word ‘idea’ (1.1.8). I take it that Aristotle and Locke are saying the same thing.

According to James Gibson, Locke believes that ideas are “essentially representative” (1917, 20). Gibson argues that “a ‘psychical fact’ which is not the apprehension of an object is for [Locke] a sheer impossibility” since “to have admitted it would have been to run directly counter to the principle which was fundamental for his conception of mind, that ‘to be in the understanding is to be understood’” (ibid.).²⁴

Gibson's interpretive argument does not have persuasive force. We may grant that Locke believes that every idea is in the understanding and thus that every idea is understood. He is not therefore committed to the proposition that every idea represents something. On the contrary, Locke believes that the ideas of pain and sickness do not intrinsically represent anything outside themselves.²⁵ According to him, they are merely unpleasant sensations that befall us.

In fact, Locke's chapter on the reality of our knowledge implies that he believes that ideas represent in virtue of contingent relations between them and the outside world. He argues that our ideas signify external entities (and therefore can be constituents of real knowledge) because they happen to stand in the relations of causation and resemblance to external bodies. Simple ideas have a certain etiology and can thus represent their causes. Some ideas share geometrical features with external bodies and can thus represent their patterns. Since Locke believes that we build representation out of such contingent relations, he cannot believe that ideas represent merely in virtue of being ideas.

4 The Justification of the Resemblance Theses

4.1 Locke's Perspective

According to Locke, then, ideas of primary qualities represent through resemblance. Ideas of secondary qualities, however, represent only through causation. We have not yet discovered what lies behind this asymmetry. He would say that almost every mental image of the Statue of Liberty is taller than it is wide, just as the statue itself is taller than it is wide. In this respect, images of the statue resemble the statue. If someone is willing to go this far with Locke, why should she bridle at saying that her image of the Statue of Liberty is green, just as the statue itself is green? She may look at a tuft of grass and ask whether that grass is a darker green than her image of the Statue of Liberty. Suppose she asks whether her image of the statue is the same shade of green as the statue. If her visual memory is accurate, why would the answer be no?

Such considerations do not prove that images have colors in the same sense as statues.²⁶ Nevertheless, Locke needs to offer a justification for his asymmetrical treatment of the resemblance of ideas. Look at the problem from his perspective. Imagine that you believe that the immediate objects of perception are ideas and that these only problematically and extrinsically represent external things. Contem-

plating this field of ideas, you perceive some shapes, motions, colors, and sounds. Think of this as a matter of perceiving that certain shapes, motions, colors, and sounds inhere in your ideas. Which of these features resemble qualities outside your head and which do not?

Adopting Locke's point of view and posing this question not only helps us understand his reasoning, but also helps us understand his use of language. Because he starts with ideas and reasons his way outward, he takes color words, sound words, and so on to apply in their primary sense to ideas.²⁷ He concludes that images do not possess secondary qualities in the same sense as bodies. If a twentieth century philosopher were to think that bodies do not resemble images with respect to color, he might express this thought by saying that whiteness and the like are in bodies but not in our minds. Locke, in contrast, says that whiteness is in our minds but not in bodies. He argues that the idea of light, as opposed to the cause of the idea of light, is called 'light' in the primary and strict sense (3.4.10). This is odd usage, but he emphasizes the point.

Locke answers the question of what the world beyond our ideas is like by declaring that ideas of primary qualities resemble something in bodies and ideas of secondary qualities do not. We can comprehend how he reaches these conclusions if we recognize that he believes that the veil of ideas creates a presumption against thinking that anything in bodies resembles anything in the mind. Locke offers considerations for setting this presumption aside for primary qualities, and argues that no similar considerations justify setting it aside for secondary qualities.

4.2 *The Justification of the Positive Resemblance Thesis*

Let us first consider what leads Locke to say that ideas of primary qualities resemble something in bodies. The main reason he adopts the positive resemblance thesis is that he believes that it follows from the corpuscularian theory of perception. If primary qualities are involved in the production of sensations, and we can perceive those very primary qualities inhering in our field of ideas, then it really is easy to draw the consequence that ideas of primary qualities resemble qualities of bodies.

Although it follows from his theory of perception that bodies possess primary qualities, we might still wonder whether Locke is entitled to conclude that they exist in bodies in same sense that they exist

in ideas. Since he believes that simple ideas represent either by being effects or by being similar, we can see why he chooses similarity. If ideas of primary qualities were mere blank effects that told us nothing about the workings of bodies, then corpuscularians could not take the first steps towards a theory of perception. At bottom, Locke's conclusion rests on his difficulty in seeing how we could represent the intelligible qualities of bodies if our ideas do not resemble those qualities.

Someone might deny that the argument has any merit, even while conceding the conditional proposition that if the corpuscularian theory of perception is true, then external bodies resemble ideas with respect to primary qualities. After all, if we are seriously calling the objectivity of primary qualities into question, we cannot pretend at the same time to be certain of the truth of corpuscularianism. Bennett puts the point harshly:

It is true that Locke tries to confute the sceptic by covert appeals to empirical evidence; but even he would see that in the context of the anti-sceptical debate—the veil-of-perception doctrine—open references to 'physical inquiries' and to what 'experience shows us' would be merely grotesque (1971, 118).

Bennett does not deny that Locke appeals to physical considerations in determining what lies beyond the veil of perception; he just thinks that Locke would have enough shame to hide such appeals behind obscure talk. Bennett seems to identify the project of finding out what lies beyond the veil of ideas with the project of finding certain knowledge about the physical world. He uses the term 'the veil-of-perception doctrine' as an appositive gloss on 'the anti-sceptical debate'. If by 'the anti-sceptical debate' Bennett means the debate over whether we have certain knowledge of the external world, then this is a conflation; someone can surmise what lies beyond her ideas without aiming for certainty.

Someone who believes in a veil of perception has to put her best foot forward in judging what lies beyond that veil. Appealing to the conceivability and intelligibility of a physical hypothesis is a perfectly legitimate response to such a predicament. Locke does not think that we can be certain of the truth of corpuscularianism; at his most cautious, he writes merely that it "is thought to go farthest in an intelligible Explication of the Qualities of Bodies" (4.3.16). Bennett is quite right to insist that Locke would not appeal to such a theory to refute someone who denies that we can have certain knowledge. Nevertheless,

since he believes that this hypothesis makes the most sense of experience, he is within his rights to assume its truth for the different project of determining what the world beyond our ideas is like.

A second reason for believing that primary qualities exist out in the world is that they cannot be separated from matter (2.8.9). Locke's assertion that primary qualities are inseparable from bodies comes almost immediately before his defense of the corpuscularian theory of perception. The structure of the chapter thus allows that he might draw his positive resemblance thesis partially from his inseparability thesis.

In his discussion of inseparability, Locke denies that matter, by presenting us with misleading ideas, only appears to have primary qualities. He puts some effort into assuaging this concern. In case we worry that our hands and eyes deceive us into thinking that figure, bulk, and solidity are out in the world, he assures us that "the Mind finds them inseparable from every particle of Matter, though less than to make it self singly be perceived by our Senses" (ibid.). In case we worry that this reasoning is just groundless theorizing, unconnected to the empirical world, he assures us that primary qualities are "such as Sense constantly finds in every particle of Matter, which has bulk enough to be perceived" (ibid.). If primary qualities are inseparable from matter, then, on the supposition that matter exists, primary qualities exist out in the world. (The supposition that matter exists is not the question begging supposition that primary qualities exist in the world. Rather it is the supposition that solid substance exists out in the world (3.10.15).) If reason can only draw this extra-mental conclusion if the relevant ideas resemble bodies, then the relevant ideas must resemble bodies.

If you find it improbable that someone might reach a conclusion about the nature of our ideas from such considerations about inseparability, consider an earlier 17th century treatment of primary and secondary qualities. In "The Assayer," Galileo declares that

whenever I conceive any material or corporeal substance, I immediately feel the need to think of it as bounded, and as having this or that shape; as being large or small in relation to other things, and in some specific place at any given time; as being in motion or at rest; as touching or not touching some other body; and as being one in number, or few, or many. From these conditions I cannot separate such a substance by any stretch of the imagination (1623/1957, 274).

Like Locke, Galileo cannot conceive of a body without thinking of primary qualities, and again like Locke, he can conceive of it without thinking of secondary qualities. Galileo “does not feel compelled to bring in as necessary accompaniments” to a body “that it must be white or red, bitter or sweet, noisy or silent, and of sweet or foul odor” (ibid.). Immediately after these statements, he derides secondary qualities by asserting that “without the senses as our guides, reason or imagination unaided would probably never arrive at qualities like these” (ibid.). From his capacity to think of bodies without secondary qualities, Galileo seems to infer that we derive our ideas of secondary qualities from the senses.

He also seems to infer that all such ideas are mere blank effects. Just as Locke compares the generation of our ideas of secondary qualities to the production of a pain by a fire (2.8.16), Galileo compares their generation to the production of a ticklish sensation by a feather (ibid., 275-77).

Locke owns Galileo’s works (Harrison and Laslett 1965, 140), and Boyle, Locke’s mentor in corpuscularianism, learns Italian in order to read them in the original language (Stewart 1991, xii). David R. Hilbert observes that these passages from *The Assayer* are “a striking anticipation of Locke” (1987, 3), but we should be careful. Locke agrees that mere blank effects cannot represent qualities that are inseparable in the relevant sense. On the other hand, he rejects Galileo’s assumption that ideas of secondary qualities are psychologically second-rate in virtue of coming from the senses. According to Locke, ideas of primary qualities also come from the senses (2.4 and 2.5). If he is to give us any account of how ideas of primary qualities allow us to perceive the inseparability of primary qualities, he must find some other feature of these ideas that makes them more than mere blank effects. Resemblance is in the air, so he picks that.

We should return to the problem of solidity. As we have seen, because of the intelligibility of corpuscularianism and our inability to conceive of the separation of primary qualities from matter, Locke concludes that ideas of primary qualities represent especially well. Since he can see how ideas of figures could accomplish this feat by literally resembling the corresponding qualities in bodies, he explicitly states that they do and also states that the ideas of primary qualities generally resemble the corresponding qualities in bodies. Because Locke wants to avoid committing himself on the corporeality of ideas, he is elusive on whether the idea of solidity literally resembles something in bodies.

I suggest that if Locke became convinced that images are incorporeal, then he would say that when he calls an idea of solidity a resemblance of the quality, he is using the word ‘resemblance’ as an

honorific, an honorific chosen because of its literal application to shape, number, and motion, but in its application here signifying no more than that the idea of solidity represents especially well. In this eventuality, Locke would be without an explanation of how the idea of solidity represents, but perhaps he would be unashamed of his ignorance. After all, he does say that the topic of the reality of our ideas “seems not to want difficulty” (4.4.3), and he never claims to be a happy genius who knows or ought to know everything.

4.3 *The Justification of the Negative Resemblance Thesis*

Let us now turn to the negative resemblance thesis, that ideas of secondary qualities do not resemble anything in bodies. Locke denies that bodies possess such qualities in the same sense as ideas and believes that this is the claim that readers will resist. According to him, secondary “Qualities are commonly thought to be the same in those Bodies, that those *Ideas* are in us, the one the perfect resemblance of the other, as they are in a Mirror; and it would by most Men be judged very extravagant, if one should say otherwise” (2.8.16). Indeed, Locke considers this the chapter’s main thesis. While apologizing for his “Excursion into Natural Philosophy” in a book devoted to the human understanding, he excuses himself by claiming that the digression is “necessary, to make the Nature of Sensation a little understood, and to make the *difference between the Qualities in Bodies, and the Ideas produced by them in the Mind*, to be distinctively perceived, without which it were impossible to discourse intelligibly of them” (2.8.22). Locke cannot be attempting to correct the sloppiness of philosophers who have muddled the concepts of idea and quality; he would not need to discuss natural philosophy to make that point. Besides, no philosopher in history has been sloppier in his use of the terms ‘idea’ and ‘quality’. Rather, he draws the distinction between ideas and qualities

so we *may not* think (as perhaps usually is done) that [ideas] are exactly the Images and *Resemblances* of something inherent in the subject; most of those of Sensation being in the Mind no more the likeness of something existing without us, than the Names, that stand for them, are the likeness of our Ideas, which yet upon hearing, they are apt to cause in us (2.8.7).

Thus, Locke's main goal in his discussion of primary and secondary qualities is to show that secondary qualities are not out in the world in the same sense that they are in the mind. Berkeley's position that no idea could resemble a quality in an unthinking substance does not seem to occur to him. He worries only about the opponent who maintains that our ideas of secondary qualities do resemble qualities existing outside our minds.

As I said before, I take Locke's argument to be as follows: the veil of ideas establishes a presumption against thinking that anything like our ideas of secondary qualities inheres in bodies. Nothing about these ideas overcomes this presumption. Therefore, we should not believe that ideas of secondary qualities resemble anything in bodies.

Colors, smells, tastes, and sounds only make their entrance at the end of the corpuscularian story of perception. Locke believes that we have no reason to think that anything like our ideas of them exists outside the mind. We do not need to appeal to secondary qualities to explain the workings of perception, and we do not find them inseparable from bodies. A critic who accepts Locke's theory of perception cannot object that we directly see, smell, taste, or hear that external objects are white, stinking, sweet, or loud, since, according to that theory, the immediate objects of perception are ideas. As we have seen, these ideas do not intrinsically represent anything outside themselves.

To persuade his reader that ideas of secondary qualities are subjective states that have nothing in common with their causes, Locke compares these ideas to pains. He asserts that this comparison reveals the possibility that a cause might not resemble its effect, since it is

no more impossible, to conceive, that God should annex [ideas of color and smell] to such Motions, with which they have no similitude; than that he should annex the *Idea* of Pain to the motion of a piece of Steel dividing our Flesh, with which that Idea hath no resemblance (2.8.13).

A little later, he tries to show that the idea of warmth and the idea of pain are phenomenologically continuous by imagining someone getting closer and closer to a fire (2.8.16).

With this similarity between the ideas of warmth and pain in hand, Locke argues that no compensating difference allows the reader to conclude that the ideas of color and temperature resemble something out in the world. He asks, "Why is Whiteness and Coldness in Snow, and Pain not, when it pro-

duces the one and the other *Idea* in us; and can do neither, but by the Bulk, Figure, Number and Motion of its solid Parts?" (ibid.) This question makes little sense without the right background and makes perfect sense on my interpretation. Whiteness, coldness, and pain are, in the first instance, simple ideas and there is a presumption against thinking that they are features of snow, strictly speaking. This presumption would be overcome if attributing the qualities to bodies did some explanatory work, but in the present case, the primary qualities of the snow produce all the relevant ideas. Locke offers the same presumptive challenge two sections later. He tells us that since pain, sickness, sweetness, and whiteness are "all effects of the operations of *Manna*,²⁸ on several parts of our Bodies, by the size, figure, number, and motion of its parts," it follows that his opponents need to explain "why the Pain and Sickness . . . should be thought to be no-where, when they are not felt; and yet the Sweetness and Whiteness . . . should be thought to exist in the *Manna*, when they are not seen nor tasted" (2.8.18). Locke believes that no such reason can be provided and thus that we ought to believe that sweetness and whiteness are not, in the strict and primary sense, out in the world.

Near the end of the chapter, Locke offers a diagnosis of "the Reason of our mistake" in believing that ideas of color, sound, and heat resemble something in their causes.²⁹ The diagnosis rests on a comparison between the sun's production of ideas in us and its production of other effects in bodies. When a fair face is sunburned red, we are not tempted to think that the sun is also red, since the sun does not look red. As Locke puts it, "when we see Wax, or a fair Face, receive change of Colour from the Sun, we cannot imagine, that to be the Reception or Resemblance of any thing in the Sun, because we find not those different Colours in the Sun it self" (2.8.25). In contrast, we cannot compare the ideas that the sun produces in us with the sun itself, so we jump to the conclusion that our ideas resemble something in their cause. Because of our inability

to discover any unlikeness between the *Idea* produced in us, and the Quality of the Object producing it, we are apt to imagine, that our *Ideas* are resemblances of something in the Objects, and not the Effects of certain Powers, placed in the Modification of their primary Qualities, with which primary Qualities the *Ideas* produced in us have no resemblance (ibid.).

We cannot directly inspect the qualities in the object; our ideas get in the way. True, on Locke's considered view, we cannot directly perceive the external bodies involved when the sun burns a fair face. In spite of that, we can set the image of the sun next to the image of the face and compare. Through this comparison, we may indirectly compare the external bodies. No similar proxies are available for a comparison between the idea of a secondary quality and its cause.

5 A Consequence of the Negative Resemblance Thesis

I said before that Locke believes that bodies possess colors, tastes, and the like in a derivative sense. I should say enough about this derivative sense to avoid the difficulty that besets Woozley's interpretation. That is, I should explain how I think that Locke avoids the implication that bodies do not possess secondary qualities. He recognizes that ordinary judgments about secondary qualities are useful (4.2.14), and he thinks that he can make them into a source of knowledge (4.4.4). He accomplishes this by appealing to the notion of extrinsic denomination from scholastic semantics. Aristotle and his medieval students teach that some things, such as climates and apples, can be called 'healthy' in a derivative sense in virtue of making organisms healthy in the primary sense (see, for example, *Metaphysics*, IV.2 1003a34-b1). Locke believes that apples are red in the same sense that they are healthy; that is, they produce something red in the paradigmatic sense.

The strongest evidence for this is Locke's repeated assertion that we "denominate" bodies from our ideas of secondary qualities (2.8.15, 16, 22, see also Ayers 1991, 1:63-64). In 17th century English to say that one thing is denominated from another is to say that the word for the first thing is derived from the word for the second. In fact, this talk is close to being scholastic technical language for the derivative reference that I have described (Spencer 1628/1970, 142).

Locke's semantic trick turns ordinary judgments about secondary qualities into knowledge. If our only acquaintance with a body is with the idea of blue that the body produces, we can still be certain that the body is blue, at least in the derivative sense. His semantic trick also explains why he asserts that secondary qualities are merely powers to produce ideas in us and not real qualities in the body. The relevant secondary quality predicates apply to bodies only because they produce certain ideas in us.

We have seen that Locke believes that his main argumentative burden in the chapter on primary and secondary qualities is to show that ideas of secondary qualities do not resemble anything in bodies. We should think of the more famous doctrine that secondary qualities are merely powers to produce ideas in us as a palliative measure in the face of the negative resemblance thesis— a semantic doctrine adopted to save the truth of ordinary judgments about secondary qualities.

Whatever consequences the resemblance theses have, it is worth knowing what they mean and why Locke believes them. In the detailed table of contents, he summarizes §§15-23 of the chapter on primary and secondary qualities with the line “*Ideas of primary Qualities are resemblances; of secondary, not.*” Most of the summaries in the table of contents are for single sections; nowhere else does Locke summarize so many sections with a single line. If we are to understand his purposes in these nine sections and in the chapter that contains them, we need to take this summary seriously. Which is to say, we need to take Locke’s resemblance theses seriously.³⁰

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1. *An Essay Concerning Human Understanding*, 2.8.15 (1689/1975, 137). My citations consisting of three numbers separated by periods are to book, chapter, and section of that edition of that work.
 2. We could read the relevant sentence as a comparison between ideas and bodies, but, judging by 2.8.7, 16, 25 and 2.32.14, Locke has qualities in mind.
 3. Locke does not imply, of course, that taste and touch occur at a distance.
 4. See Carriero (1990, 9-11) and McCann (1994, 63-64). As Carriero points out, “Locke’s words images and resemblances are his English rendering for the Latin *imago* and *similitudine*, both of which were used by the scholastics to describe . . . cognitive species” (1990, 12). A general discussion of medieval theories of perception may be found in Lindberg (1976). A detailed examination of the late thirteenth and early fourteenth century controversy over flying species may be found in Tachau (1988).
 5. *The Principles of Human Knowledge*, part 1, §8.
 6. I am indebted to Mike Thau for this way of putting the difficulty.
 7. In a useful paper that properly emphasizes the importance of the resemblance theses, John Campbell attributes something more unusual to Locke. According to him, Locke means by ‘resemblance’ the relation that holds between a simple idea and a quality, just in case only one “fine structure” corresponds to the simple idea (1980, 582). Not only does Campbell groundlessly attribute to Locke the doubtful doctrine that objects that are three feet long, spherical, or solid are more likely to have a common fine structure than objects that are yellow or smell of almonds, but his interpretation strays too far from the ordinary meaning of ‘resemblance’.
 8. J. L. Mackie offers a related reading in his *Problems from Locke* (1976, 49-50). John McDowell criticizes Mackie’s Locke on the grounds that “the relation between how things are and how an experience represents them as being [is] identity, not resemblance, if the representation is veridical” (1988, 170-71).
 9. In, for example, *Perceptual Acquaintance from Descartes to Reid* (1984, 4-6, 88-104). According to Yolton, his reading has a long history as a minority interpretation. He claims that Father Barnabite Gerdil advanced it in 1748 (Yolton 1984, 94-98). Other interpretations akin to Yolton’s have been advanced by James Gibson (1917, 20-21), Woozley (1964, 24-35), and Douglas Greenlee (1967).

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10. For detailed arguments against Yolton's position, see Peter Dlugos (1996), Ayers (1986, 17-31; 1991, 1:56-65), Roland Hall (1990, 15-17), and Chappell (1994, 31-33). For criticisms of interpretations similar to Yolton's see H. E. Matthews (1971), Mackie (1976, 37-41), and Gunnar Asplin (1967).
11. Ayers believes that every idea described in the *Essay* is an image, but he may have a somewhat idiosyncratic conception of what that means (1991, 1:28-29, 44-51). At 2.10.7 Locke refers to remembered ideas as "dormant Pictures"; at 2.29.8, he writes that ideas are "as it were, the Pictures of Things" (see Hall 1990, 15-16).
12. Here I am indebted to Rogers Albritton. I use the indefinite article with 'squareness' because Locke's nominalism commits him to the view that distinct squares possess distinct squarenesses, as D. M. Armstrong (1989, 64) observes.
13. As we have seen in Bennett (see also Curley 1972, 451).
14. Gavin Lawrence directed me to these passages. I have used Richard Sorabji's translation (Aristotle 1972).
15. Aristotle presumably borrows this simile from Plato, *Theaetetus* 191c f.
16. On Descartes's theory of the corporeal imagination, see Norman Kemp-Smith (1963, chapter 6).
17. I mean 'physiological' in the modern sense.
18. François Duchesneau (1996) considers Locke's application of his methodological strictures to the closely related problem of the materiality of the mind.
19. Presumably, against the doctrine that Aristotle propounds in *Physics*, IV.11 (219a4-219b2), though Aristotle seems to be working with a broader conception of motion.
20. At 3.4.8-9, Locke argues that motion is indefinable as an instance of his thesis that words that signify simple ideas cannot be defined. His argumentative zeal leads him to adulterate a definition that he found perfectly serviceable in 2.13.14 and to disparage the resulting definition as circular (3.4.9). If we take Locke's arguments against the analyzability of motion seriously, then the account of the resemblance between motion and its idea will be simpler than the one given in the body of the text. An idea of motion will resemble a quality of motion in a body, just in case the idea is an aspect of an image that moves across

the visual field in pretty much the same way and in the same indefinable sense as the body moves across space.

21. Norris's criticisms inspire Locke to write three pieces in response, the earlier "JL Answer to Mr. Norris's Reflections," and the later "Remarks upon Some of Mr. Norris's Books, Wherein he asserts P. Malebranche's Opinion of our seeing all Things in God" and "An Examination of P. Malebranche's Opinion of Seeing All Things in God" (see Milton, 1994b, 19). The quoted passage is from "Remarks upon Norris's Books."

22. Actually, at 4.4.12f Locke suggests that a third sort of idea corresponds to external objects, but he does not describe a new sort of agreement in these passages, so we do not need to concern ourselves with them.

23. Following J. I. Beare (Aristotle 1941), I substitute 'likeness' for Sorabji's 'copy' as a translation for 'eikôn'. I thank Kathleen McNamee for linguistic advice.

24. The quotation from Locke occurs at 1.2.5. On this subject, see also Chappell (1994, 52-53).

25. This is implicit in 2.8.13, 2.8.16, and 2.8.18, passages we will examine in §4.3 (see also 2.20.2 and Ayers 1991, 1:63).

26. Ned Block (1983, 518) has a reasonable response to a similar argument.

27. Here I am indebted to Peter Alexander, who argues that Locke only uses "such words as 'colour' and 'red' for *ideas* of secondary qualities rather than for secondary qualities themselves." (1985, 168) Alexander should allow for exceptions—snow is called 'white' at 2.8.16, a chess-piece is called 'black' at 2.13.9, and saffron is called 'yellow' at 1.4.19—but he is more right than wrong.

28. 'Manna' refers to a kind of laxative. From a medical point of view, 2.8.18 is a physician's diatribe against a constipation remedy.

29. The quoted words are from Locke's table of contents summary of §§24, 25. Palmer (1974, 43-47) has a good discussion of these sections.

30. This paper grew out of conversations I had with Alex Rajczi about sense data. I thank John Carriero, Rogers Albritton, Vere Chappell, Amy Kind, Seana Shiffrin, Michael Della Rocca, and anonymous reviewers for comments on various drafts. I thank Frank Menetrez, Gavin Lawrence, Barbara Herman, and

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