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Primary and Secondary Qualities

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1. Introduction

Book II, Chapter viii of Locke's *An Essay Concerning Human Understanding* contains, in just over 10 pages, the most influential and heavily-discussed thought about the distinction between primary and secondary qualities in the history of philosophy. "Influential" and "heavily-discussed", however, do not imply "widely accepted" or "univocally understood." In fact, it was not that long ago that John Mackie could introduce his discussion of Locke's views on this topic by saying that "it is widely believed among philosophers that, whatever Locke said about primary and secondary qualities, it is wrong" (Mackie, 1976: p.7)! Even though the general evaluation of the cogency and insight within Locke's discussion has changed in the thirty years since Mackie offered his own explanation and defense of Locke's views, it remains true that contemporary and recent views of Locke's discussion of the

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distinction between primary and secondary qualities remain divided over many basic issues. These include the point and basis of the distinction in Locke, the nature of secondary qualities themselves, the role of particular examples that Locke introduces in his discussion, and the ultimate assessment of the tenability of what Locke says about the distinction.

A distinction between primary and secondary qualities antedates Locke, but it is Locke’s discussion that has become a core part of textbook discussions of the history of metaphysics and epistemology in the modern period. This is both because of the ways in which Locke’s eighteenth-century interlocutors of influence—particularly, George Berkeley and Thomas Reid—reacted to that discussion, and because of the ways in which twentieth-century commentators have returned to Locke’s discussion, either by way of offering improved (by their own lights) interpretations of how Locke should best be understood, articulating their own views of the real nature of the distinction, or as a means of making some broader philosophical or metaphilosophical points. There is much in Locke’s discussion to justify its central place in subsequent debates, whether they attend principally to historical or to contemporary issues. In this essay I will focus on Locke’s discussion itself, though I hope to say enough about that discussion to convey (and even to resolve) some of the controversies that have pervaded the literature on Locke’s distinction.

Although II.viii of the *Essay* contains Locke’s only sustained discussion of the distinction between primary and secondary qualities, the distinction itself is drawn as early as the “epitome,” “abstract,” or “abrégé” of the *Essay*, which was likely written at least in large part more than four years earlier than the publication of the *Essay* in 1689, (see Locke n.d., Hill and Milton 2003) and which can also be found in the work known as *Draft C* of the *Essay*, written in 1685 (see Walmsley 2003). Elsewhere in the *Essay* Locke does occasionally mention particular qualities that fall under each of the headings “primary qualities” and

“secondary qualities”, and about as occasionally he invokes a short list of either ideas of primary qualities or primary qualities themselves. However, as II.viii of the *Essay* contains Locke’s most sustained thought about primary and secondary qualities, it will be my focus here.

In the first half of the paper I shall lead up to a fairly straightforward reading of what Locke says about the distinction in II.viii, one that, in its general outlines, represents a sympathetic (vs. critical) understanding of Locke’s discussion. In the second half of the paper, starting near the end of section 5, I turn to consider a few of the ways in which interpreting Locke on primary and secondary qualities has proven more complicated than I will have, to that point, suggested. Here I shall take up what is sometimes called the Berkeleyan interpretation of Locke (section 6), the understanding of Locke’s resemblance thesis (section 7), and Locke’s views of qualities and their relationship to powers (section 8).

As a start, let us briefly remind ourselves of the context (section 2) and location (section 3) of Locke’s discussion, before turning to the apparent structure of II.viii itself (section 4) and then the interpretation of Locke that I want to offer (section 5).

2. **Context.** Locke’s metaphysical and epistemological views developed under the influence of the emerging corpuscularian, mechanical philosophy, particularly that of his some-time mentor, the chemist Robert Boyle. Corpuscularians revived an atomistic metaphysics according to which the whole physical world was made up of minute particles, *corpuscles*, and their fundamental properties, which were considered mechanical in nature. Corpuscularian explanations for the behavior of physical objects and our epistemic interactions with them emerged from the scientific worldview that was developed in the seventeenth century, offering a challenge to long-dominant explanations cast in terms that Aristotle had

introduced almost 2000 years previously. Thus Locke was writing during a period of transition from the approaches to understanding the world that had dominated late medieval scholastic philosophy to the newer experimental approach to understanding nature. Part of this transition involved a critical attitude towards many of the Aristotelian concepts, including those of substance, essence, and form, which, until that time, had provided the dominant intellectual framework in Western societies for making sense of the world.

Locke was very much not only a transitional figure but also a figure in transition himself, casting his ideas partly in terms of the Aristotelian framework he had inherited (e.g., in terms of the notion of qualities) and partly in terms of the concepts that corpuscularians were developing in replacing that framework. The most directly relevant of the Aristotelian concepts for our purposes is what were called *sensible qualities*, since a large part of the point of the distinction between primary and secondary qualities for Locke was to allow us to develop a better way of thinking about such “sensible qualities” and their relationship to the mechanical properties that corpuscularians thought were causally responsible for all observable changes in objects. Sensible qualities are exemplified by properties that produce ideas in us via just *one* sense: colors, tastes, smells, and sounds. (Although there is a broader use of “sensible qualities”, one that includes all qualities we detect via the senses, Locke does not seem to traffic in this broader usage in II.viii.) Such properties, and the ideas they give rise to, were of special interest to Locke, for at least two reasons.

First, since sensible qualities come to be mediated between world and mind by the senses—they are often described (as above) as properties detected by the senses, and almost as often as ideas that come in to the mind via the senses—any theory of knowledge that gives a central place to *sensory* knowledge, as does Locke’s empiricism, should fairly naturally take up discussion of such qualities. Moreover, such sensible qualities are the properties of

objects that seem most directly or readily known by perceivers and feature as a natural part of our common sense picture of the world. One might even think that such sensible qualities form the epistemic building blocks from which perceivers construct their view of the world, as did later empiricists, such as phenomenologists or sense-data theorists.

Second, proponents of the corpuscularian and experimental philosophy by which Locke was influenced either rejected or expressed serious doubts about the existence of such sensible qualities. Corpuscularian science provided several reasons for questioning whether observable objects in the world possessed colors or smells or tastes or sounds. First, as *sensible* qualities, it was unclear whether such qualities could be possessed by *insensible* bodies, such as corpuscles, which corpuscularians viewed as the basic building blocks of the material world. Second, corpuscles were held to have other kinds of properties, such as size, shape, and motion, and these properties were thought to provide an explanatorily adequate basis for *all* of the properties of material objects. Suppose that the world is ultimately made up of corpuscles, these corpuscles do not (or perhaps even *can't*) possess the properties called “sensible qualities,” and the properties that they *do* have are adequate for explaining what we observe in material objects. Then there is a real question about what the ontological status of sensible qualities is, and correspondingly, about the very category “sensible qualities.” Thus, we can see from the outset that Locke has reason to engage with the issue of what so-called “sensible qualities” *are* and a reason for that engagement to be one that identifies some way in which such qualities are other than what they are usually taken to be, i.e., as properties of objects no different from other properties of objects.

I turn now to an equally brief overview of the textual location of Locke’s discussion of the distinction between primary and secondary qualities. What leads into Locke’s discussion, and where, in turn, does it lead in the *Essay* as a whole?

3. **Location.** Although Book II of the *Essay* is long, and in places repetitious, confusing, and frustrating, the book does at least have a clear structure to it, one relevant to understanding where Locke’s discussion of primary and secondary qualities fits into his broader discussion of “ideas”. Following Locke’s protracted discussion and rejection of the doctrine of innate ideas in Book I, Book II opens with a moderately long (15 page) chapter, “Of Ideas *in general, and their Original,*” that sets out Locke’s empiricist account of the source of our ideas. If ideas are not innate, then where do they come from? Locke’s short answer is simple, and provides a capsule statement of the empiricism for which the *Essay* is perhaps best known: they come from experience. Locke continues by distinguishing two “Fountains of Knowledge, from whence all the *Ideas* we have, or can naturally have, do spring” (II.i.2), namely, “*Our senses*” (II.i.3) and “the *Perception of the Operations of our own Minds*” (II.i.4)—or, as they are commonly referred to, sensation and reflection. So empiricism, for Locke, is the idea that all ideas derive from, or originate in, sensation or reflection (or both).

At the beginning of II.ii, “Of *simple Ideas,*” Locke introduces the distinction between simple and complex ideas. “These simple *Ideas,*” says Locke, “the Materials of all our Knowledge, are suggested and furnished to the Mind, only by those two ways above mentioned, *viz. Sensation and Reflection*” (II.ii.2). Thus, since simple ideas provide the origins for complex ideas for Locke, we would expect a discussion of their nature to play a foundational role in Locke’s more general discussion of the nature of our ideas and their relationship to what they are ideas of. This is precisely what we do find in the following chapters of Book II.

Indeed, the distinction between simple and complex ideas provides the global structure for the rest of Book II. The following nine chapters (chh. 3-11, just over 40 pages)

are concerned with simple ideas, starting with those *of sensation*. Each of the last three of these nine chapters is devoted to a particular simple idea *of reflection*: perception (ch. 9), retention (or memory, ch. 10), and discerning (or categorization, ch. 11). Thus, Chapter 8, entitled “*Some farther Considerations concerning our simple Ideas,*” concludes Locke’s discussion of simple ideas of sensation. The discussion of primary and secondary qualities occupies the final ten pages of Chapter 8, and constitutes the most sustained part of Locke’s discussion of simple ideas of sensation. The Book II chapters prior to II.viii are short and programmatic, with the exception of II.iv, “*Of Solidity,*” which contains a dedicated discussion of the primary quality of solidity, the only primary *or* secondary quality that Locke devotes sustained attention to on its own.

Having concluded his discussion of simple ideas in Chapter 11, in Chapter 12, Locke turns to complex ideas, a large, general topic that occupies the following seventeen chapters (200 pages), including Locke’s important discussions of power (ch. 21, significantly augmented in the second edition), substance (ch. 23), and personal identity (ch. 27, added *in toto* to the second edition). Locke tells us here that he divides complex ideas into three kinds—modes, substances, and relations—and again quite systematically the bulk of the rest of Book II is dedicated to these in turn: Chapters 13-22 to modes (in turn, to simple modes of sensation, to modes of thinking, and finally to “mixed modes”), Chapters 23-24 to substances, and finally Chapters 25-28 to relations. Such locational facts about Locke’s discussion of the distinction between primary and secondary qualities tell us, I think, three things about that discussion.

First, the discussion has special importance for Locke, being the most sustained part of his overall discussion of simple ideas of sensation, ideas that stand as one of two “foundations of knowledge.” This is so despite the fact that there are no signs of the

distinction in the earliest version of the *Essay*, his *Draft A*, written in 1671, and signs that only gesture in the direction of that distinction in his *Draft B*, written later in that same year.

Second, Locke did not flag the discussion as being especially controversial or in need of supplementation, hedging, or revision. It was neither especially lengthy—at least by Locke’s standards of prolixity—nor followed by further discussion of implications or limitations, nor, for that matter, significantly rewritten throughout the four editions published during Locke’s lifetime. As Locke moves to draw his discussion to a conclusion, he offers an apology for “this little Excursion into Natural Philosophy” (II.viii.22), and then simply moves on to discuss the simple ideas gained by reflection.

Finally, although Locke does draw on his preceding discussion of the distinction in two well-known discussions later in the *Essay*—in his discussion of substance (II.xxiii.7-11) and in arguing for some significant limitations to our knowledge of the “discoverable” or “visible” connections between primary qualities and secondary qualities (IV.iii.8-16)—Locke seems to view his discussion of the distinction itself as self-contained and complete, at least for his purposes.

In short, Locke takes himself at II.viii to have said something important in drawing the distinction in the way that he does; he shows no sign of recognizing its contentious nature; and he takes his discussion of the distinction to stand in need of further elaboration.

4. **Structure.** I have indicated that the structure of Book II follows Locke’s own basic epistemic framework, flagging what the place of Locke’s discussion of the primary / secondary distinction in that structure indicates about at least Locke’s own view of that discussion. Consider now the structure of II.viii itself, which I also take as a reliable guide to how Locke views the distinction between primary and secondary qualities.

Locke’s discussion in II.viii falls into five parts. Locke begins (viii.1-6) with a discussion of the privative causation of ideas. He then introduces the notion of primary qualities at viii.9, and that of secondary qualities at viii.10, having distinguished, at viii.7-8, between ideas (which are in the mind) and qualities (which are in bodies). Sections 11-14 are concerned with how each of these kinds of quality in bodies produces ideas in the mind. Sections 15-22 focus on a claim that Locke takes to be a *consequence* of his discussion to this point, namely, that the ideas we have of primary qualities are, while the ideas we have of secondary qualities are not, *resemblances* of their causes. Finally, sections 23-26 provide an extended summary overview of what Locke takes himself to have shown in this chapter. This structure was in place in the very first edition of the *Essay*, with the chief change made across four editions being the addition, at viii.10, of an explicit characterization of secondary qualities that highlights the parallel that Locke draws in his concluding sections between secondary qualities and those “of a third sort”. (That Locke did not initially offer an explicit characterization of secondary qualities at viii.10 has a significance that I will return to discuss in Section 9 below.)

In addition, this basic structure to the chapter is present in the earlier Epitome or Abstract of the *Essay*, with the exception being the initial discussion of privative causation, which is a later addition that can be found in *Draft C*, drawing on less developed discussion from *Draft B* (see Walmsley, 2004, p. 443). Given this structure, one would expect to find the heart of Locke’s view of the distinction at viii.9-10, a view that Locke recapitulates at viii.23-26, with viii.11-14 adding to this distinction in a way that leads into the point about resemblance in viii.15-22.

5. **Locke’s view.** In light of the context, location, and structure of Locke’s discussion at II.viii, here is what I take Locke’s view to be of the distinction between primary and secondary qualities. A range of qualities is commonly attributed to bodies. Amongst these are real qualities that the bodies possess—solidity, extension, figure, mobility, number, bulk, texture, situation. These are what Locke calls *primary qualities*, and he gives a four-fold characterization of what defines primary qualities at viii.9. They are:

utterly inseparable from the Body, in what estate soever it be; such as in all the alterations and changes it suffers, all the force can be used upon it, it constantly keeps; and such as Sense constantly finds in every particle of Matter, which has bulk enough to be perceived, and the Mind finds inseparable from every particle of Matter, though less than to make it self singly be perceived by our Senses ...

As I have argued elsewhere (R. Wilson 2002), despite the variation that one finds across the 26 putative lists of primary qualities in the ensuing discussion contained in viii 9 -26, there is much more regularity to the lists and unity in Locke’s conception of primary qualities than has often been found by others. The primary qualities are present universally in observable bodies, and this is the basis for us conceiving of them as universal in all bodies whatsoever, including particles too small to be sensed, such as corpuscles. Such qualities come to be sensed by us through the mechanical (or “impulsive”) action of bodies on our sense organs, and here the motion of some kinds of corpuscles—corpuscles that have these very primary qualities—plays a crucial mediating role. The sensing of primary qualities (in observable bodies), gives rise to corresponding simple ideas (in the mind).

Yet amongst the qualities commonly attributed to bodies are others that, although commonly thought of in much the way that primary qualities are, are in fact nothing in bodies themselves but “Powers to produce various Sensations in us by their *primary Qualities*”

(viii.10; see also viii.14). These are what Locke calls *secondary qualities* and (following tradition) *sensible qualities*, and are exemplified by colors, sounds, tastes, and smells. While Locke does not explicitly say that such qualities are *not* universal across bodies, and so not possessed by insensible bodies, such as corpuscles, it seems clear from the contrast he draws between primary and secondary qualities that he thinks corpuscles, and perhaps insensible bodies more generally, lack these defining features of primary qualities. We have already seen that this would be a natural view to hold, given the corpuscularian background to Locke’s distinction. More generally, whatever else is true of secondary qualities, it is clear that they *do not* satisfy the four-fold characterization that Locke gives of primary qualities. Moreover, the very same kinds of properties—the primary qualities—of insensible bodies that are ultimately causally responsible for our ideas of primary qualities are also causally responsible for our ideas of secondary qualities (sections 13-14).

So, Locke thinks that secondary qualities are, first, *qualities* of bodies, i.e., properties that bodies themselves have, and, second, *secondary*, i.e., possessed in virtue of other properties that bodies have. Indeed, they are possessed in virtue of the *primary qualities* that bodies have. Any unclarity about this should be removed by attending to the parallel that Locke draws, at both viii.10 and again at viii.23-26, between secondary qualities and “a third sort” of quality exemplified by the “power in Fire to produce a new Colour, or consistency in Wax or Clay” (II.viii.10). These are powers a fire has, though they are distinct from secondary qualities since they are not powers to produce *ideas in us*; rather, they are powers to produce changes in objects, such as their color or “consistency”. Locke says that such a power is “*as much* a quality in Fire, as the power it has to produce in me a new *Idea* or Sensation of warmth or burning, which I felt not before” (my emphasis). Here Locke relies

on the idea that secondary qualities are powers *in objects* to draw attention to there being a third sort of quality that is likewise in objects.

When Locke turns to summarize his discussion at II.viii.23, he again discusses together the secondary qualities—“usually called sensible Qualities”—and this third sort of quality—“usually called Powers.” Here he is about as clear as he could be that these two kinds of quality have the very same ontological status: each is a kind of power that a body has in virtue of the primary qualities that it possesses. Contrasting both of these with what “may be properly called *real Original, or primary Qualities,*” Locke concludes section 23 with the following sentence: “The other two, are only Powers to act differently upon other things, which Powers result from the different Modifications of those primary Qualities.” Section 24 then concentrates on the differences between how these secondary and third sort of qualities are usually thought of. (Later philosophers sometimes refer to these third sort as “tertiary qualities.”) An example that Locke uses that runs between these two sections is instructive. The sun and a fire both produce ideas of light and heat in us, which we think of as “*real Qualities*” of the sun and fire. The sun and a fire also produce ideas of white, soft, and fluid in us when they melt wax or lead, but here we commonly think that these powers of the sun or fire are “*barely Powers.*” But these differences are merely putative, a point that Locke drives home in saying, of the sun, that they “are all of them equally Powers in the Sun, depending on its primary Qualities” (II.viii.24). Section 25 then attempts to explain why we make this kind of ontological mistake in our common sense thought about these powers. To further underline the parallel between the qualities “usually called sensible Qualities” and those “usually called Powers,” Locke draws the chapter to a close in Section 26 by talking of *both* as secondary qualities, the first *immediately perceivable*, the second, *mediately perceivable*.

So far I have explained Locke’s distinction between primary and secondary qualities without drawing essentially on his discussion, in sections 15-22, of resemblance. If we take the five-part structure of Locke’s discussion at face value, this is how it should be, since what is often called Locke’s resemblance thesis is a *consequence of*, rather than the core of, the distinction between primary and secondary qualities. Even so, we need some account of what Locke is up to in this important part of his discussion, and of the status of his claims about resemblance, not least of all because it has proven to be one of the most confusing (and putatively confused) parts of Locke’s discussion.

The resemblance thesis itself has two parts. The first claims that there *is* a “resemblance” between our ideas of primary qualities and the corresponding primary qualities themselves; the second claims that there *is not* such a resemblance in the case of secondary qualities. Both parts of the resemblance thesis may seem readily intelligible in light of what has been said already, provided that we allow that ideas can have qualities at all (a proviso that not all will be prepared to grant; I shall return to discuss this in Section 7 below). Consider a primary quality, such as size or shape. When, through normal perceptual processes, we form a complex idea of a table as round, or of being a meter long, the simple ideas of being round and being a meter long *resemble or are like* qualities that the table itself possesses: roundness and meter-longness. But when we form a complex idea of that table as (say) brown, the simple idea of brownness *does not resemble or is not like* some quality that the table itself possesses, brownness. This is not because the table is not brown—the table *is* brown—but because *that quality*, which the table *does* possess, is merely a power that the table has, i.e., the power to produce the idea of brownness in perceivers, a power possessed in virtue of the table’s primary qualities.

If the way in which I have presented Locke’s view is correct, then something like this should be true of what Locke acknowledges are “usually called Powers,” Locke’s third sort of qualities. Take Locke’s example of the power of the sun to cause the idea of softness in us by melting wax. Here we come to have the complex thought that the wax is soft, and recognize that the sun has the power to make wax soft. The sun *does* possess two corresponding qualities—the power to produce the idea of softness in us, and the power to melt wax—but there is no resemblance or likeness between those powers and the idea of softness itself. Secondary qualities, whether immediately or mediately perceivable, all lack this resemblance or likeness. What is distinctive of this third sort of quality, the “secondary qualities, mediately perceivable,” is that with them we have no tendency even to think that there is a resemblance or likeness between the ideas we have and the real qualities in the objects themselves.

There is an interesting, and I think open, question about how general Locke intends his “third sort” of quality to be. I have assumed above that it is general enough to include not only the power to produce the idea of softness in us but also the power to melt wax (which, in turn, produces the idea of softness in us). Along these lines, then, we might think about the powers that our brown table has of this third sort, such as its power to leave an indentation in a carpet. Here again there is an observable change in a second object, the carpet, that some object makes, and no resemblance between the resulting quality we recognize in the carpet, the indentation, and the corresponding power in the desk that brings about this effect. Whether Locke’s third sort of quality includes powers like the power a table has to support a coffee mug—call this its *mug-supportability*—or whether such powers fall outside of Locke’s trichotomy of qualities—primary, secondary, and the “third sort”—I leave as a question for further discussion elsewhere.

So Locke is claiming that there is a likeness or similarity between our ideas of primary qualities and the primary qualities themselves that does not hold between our ideas of secondary qualities and secondary qualities themselves. This likeness or similarity in the case of primary qualities, and its absence in the case of secondary qualities, is what Locke’s *resemblance thesis* amounts to. Although Locke thinks that his claim about resemblance is obvious, given what he has said, he illustrates and supports it across several pages of discussion, discussion aimed in part also at supporting his prior way of drawing the distinction between primary and secondary qualities, including the corpuscularian explanation for the causal primacy of the primary qualities. For example, consider Locke’s famous section 20, which reads, in entirety:

Pound an Almond, and the clear white *Colour*Color will be altered into a dirty one, and the sweet *Taste* into an oily one. What real Alteration can the beating of the Pestle make in any Body, but an Alteration of the *Texture* of it?

This section is clearly aimed at challenging those who would doubt that there is a corpuscularian explanation for the changes in the secondary qualities of the pounded almond, rather than at offering direct support for the claim that ideas of secondary qualities do not resemble secondary qualities themselves.

Much of the ink that has been spilt over Locke’s characterization and defense of the distinction between primary and secondary qualities appeals to claims that Locke makes in sections 15-22 that putatively focus on the resemblance thesis. And even a brief consideration of what Locke says here should suffice to show why this part of Locke’s discussion has generated much discussion. At viii.17 Locke says

The particular *Bulk, Number, Figure, and Motion of the parts of Fire, or Snow are really in them*, whether any ones Sense perceive them or no: and therefore they may be called

real Qualities, because they really exist in those Bodies. But *Light, Heat, Whiteness*, or *Coldness*, are no more really in them, than *Sickness or Pain* is in Manna.

By itself, this suggests that secondary qualities are (a) not real qualities, and (b) not really in bodies at all. More generally, since the parallel that Locke draws between the secondary qualities, on the one hand, and sickness and pain, on the other, is one drawn several times in these sections of Chapter VIII, and sickness and pain are *not* usually thought of as powers of *any kind* in objects—they inhere *wholly in the experiencing subject*—this has also been taken to suggest that secondary qualities (c) exist only in the mind.

If the picture I have sketched is to be defended as capturing the core of Locke’s view of primary and secondary qualities, then at least (b) and (c) must be rejected, and some other account of passages such as that above needs to be provided. Before discussing such passages, I turn to the historically influential interpretation of Locke commonly thought to be provided by Berkeley and taken up by Reid, both of whom attribute (a) – (c) to Locke, amongst others. This interpretation has been shown decisively—in the work of Reginald Jackson (1929), Jonathan Bennett (1971), Edwin Curley (1972), and Peter Alexander (1985)—to be mistaken, though it is perhaps only dubiously to be found in Berkeley’s work as a badly mistaken interpretation of Locke (Stroud 1980, M. Wilson 1982).

6. **The “Berkeleyan interpretation” of Locke.** In his *A Treatise Concerning the Principles of Human Knowledge* (1710, Part 1, sections 9-15), Berkeley offers a critique of those who offer the distinction between primary and secondary qualities as part of an articulation of a form of *materialism*, the view (for Berkeley) that material objects have some kind of existence independent of perceivers. Although Berkeley does not name Locke (or, indeed, any particular philosopher) either in this critique or in that which he delivered in the first

dialogue in his *Three Dialogues Between Hylas and Philonous*, Locke’s discussion is likely one of Berkeley’s targets here. Berkeley views the distinction between primary and secondary qualities as one between properties *in bodies* and sensations (of color, sound, etc.) *in minds*, treating the distinction here as a kind of refuge for those who believe in independently existing material objects. Berkeley views such philosophers as holding that material objects have just some of the properties—the primary qualities—usually ascribed to them, but not others—the secondary qualities, which are merely (for Locke) *qualities of the mind*. Berkeley famously argues that the kinds of arguments that he thinks that philosophers like Locke provide for thinking that secondary qualities are not “in” material objects, such as those appealing to the relativity of the secondary qualities, also hold of primary qualities. Thus, the primary / secondary distinction does not, after all, provide a way to defend a moderate form of materialism, one that views material objects as having only primary qualities. In fact, Berkeley thinks that such a view is absurd. On this view, if offered as an interpretation of Locke, Locke draws the distinction between primary and secondary qualities in part to highlight the causal importance of primary qualities, and to call in to question the objectivity—the existence in objects—of secondary qualities.

On this Berkeleyan interpretation, secondary qualities are *merely sensations* or, more generally, mind-dependent properties. However, this interpretation cannot reasonably be squared with Locke’s own characterization of secondary qualities as being “nothing in the Objects themselves, *but Powers to produce various Sensations in us*” (viii.10, my emphasis), nor with Locke’s repeated talk of secondary qualities as being causes of our Ideas (e.g., “the *Ideas, produced in us by these Secondary Qualities*” [viii.15]), nor with Locke’s repeated emphasis on the distinction between *qualities*, which are *in bodies*, and *ideas*, which are *in minds*. Moreover, although it is possible for someone to invoke the primary / secondary distinction as part of a

meliorated form of materialism (in Berkeley’s sense), since the view that material objects exist independent of us as perceivers was *not* a view that Locke felt the need to defend, it seems mistaken to view the rationale for Locke’s drawing of the distinction to be a defense of materialism. As I have suggested, Locke uses the distinction between primary and secondary qualities in part to move beyond the concept of a sensible quality, with the ontological dependence of the latter on the former providing a way to acknowledge both the reality of secondary qualities in bodies and their derivative status within the corpuscularian mechanical philosophy.

7. **Resemblance Revisited.** Another part of the Berkeleyan critique of the distinction between primary and secondary qualities as discussed by Locke, amongst others, has been directed at Locke’s resemblance thesis. I have suggested that we take the apparent structure of Locke’s discussion at face value, and so accept the resemblance thesis as a *consequence of*, rather than the *basis for* the distinction between primary and secondary qualities. Thus, the rejection of the resemblance thesis is relevant to the evaluation of the tenability of Locke’s distinction only as the conclusion to a putative *reductio ad absurdum* of Locke’s way of drawing the distinction at viii.9-10, which is embellished at viii.11-14. But since any such argument will contain Locke’s claims at viii.9-10 as premises, together with other premises (from viii.11-14) that generate the resemblance thesis as a sub-conclusion in the overall argument, there are a number of ways to resist such an argument against the tenability of Locke’s distinction. For example, one might simply abandon the resemblance thesis itself (in either or both of its parts), or reject the inference to that thesis from Locke’s preceding discussion at vii.9-14.

While this creates a space of options for aficionados of Locke’s distinction between primary and secondary qualities who are nonetheless skeptical about the plausibility of the resemblance thesis, I have already indicated that I view the resemblance thesis itself as defensible. The negative part of the resemblance thesis, which asserts that secondary qualities *do not* resemble the ideas we have of them, is easy to accept on the view of Locke that I have defended here, because such qualities are powers in objects, yet are not perceived as such. The positive part of that thesis, however, asserting that primary qualities *do* resemble the ideas we have of them, will seem to some a harder pill to swallow. Some may question whether an idea of *any* quality resembles that quality itself, while others may be puzzled more specifically about ideas of primary qualities: how can my idea of something’s being a meter long resemble the quality of being a meter long? (My idea, after all, is *not* a meter long: my head is just too small for that.)

I think that Locke himself does not have a very deep answer to such challenges to the positive part of the resemblance thesis, in large part because he is principally concerned to argue against the presumption that *all simple ideas resemble qualities in the world*, including those of the “sensible qualities.” It is for this reason that when Locke turns, at II.viii.12, to provide his mechanical account of how primary qualities in bodies produce ideas of primary qualities in minds, he is extremely brief and sketchy. By assuming that his readers will readily grant that we perceive objects of determinate size and shape, Locke likely takes himself simply to be providing the corpuscularian sketch for this correspondence between ideas and qualities. This assumption is made more secure, perhaps, by the focus in Locke here on *sight*, and by thinking of ideas as (at least often) *images*. When we draw a sun that is round in shape, there is a straightforward sense in which the picture exemplifies roundness, just as the sun itself does. Locke thinks, I suspect, that just the same is true when we form an idea of a

sun that is round (see also Jacovides 1999 for a more complicated defense of this “literal” interpretation of Locke).

Be that as it may, I have also acknowledged that there are passages, such as that cited from viii.17, that suggest that the negative part of the resemblance thesis—the denial of a resemblance relation between secondary qualities and the ideas we have of them—holds because secondary qualities are themselves ideas, not qualities in bodies. Such a view stands in tension with Locke’s conception of secondary qualities as powers in bodies, and so with the distinction between primary and secondary qualities. Two non-exclusive options, both concessionary in acknowledging limitations to Locke’s discussion at viii.15-22, suggest themselves here. The first is harsher, the second less harsh, on Locke.

The first is simply to concede that much of Locke’s discussion here *is* confusing, precisely because it contradicts or stands in tension with what else he says about secondary qualities in II.viii. The analogy between whiteness and coldness, on the one hand, and sickness or pain, on the other, *does support* an understanding of secondary qualities whereby they are themselves *inherently subjective*; likewise, with Locke’s other examples here. Consider his second, that of the red and white colors in porphyre. Locke asks, rhetorically,

Can any one think any real alterations are made in the *Porphyre*, by the presence or absence of Light; and that those *Ideas* of whiteness and redness, are really in *Porphyre* in the light, when ‘tis plain *it has no colourcolor in the dark?* (viii.19)

On Locke’s own view, one might allow that the answer to this question is “yes,” since there could be “real alterations” to the corpuscles and the ways they are arranged on the surface of the porphyre (part of their “texture”) when light is shone on it. Yet the implied answer “no,” together with Locke’s following claim that “whiteness or redness are not in it at any time,” suggest that colors are not in bodies at all. On this view, the confusions in Locke in

viii.15-22 are irremediable and reflect Locke’s own ambivalence about how he thought of the secondary qualities.

The second concessionary alternative treats Locke’s discussion more charitably, viewing what confusion there is here, as elsewhere in the chapter, as lying primarily at the surface-level of expression. It can be motivated in the first instance by noting that the quotation just provided continues with “but such a texture, that hath the power to produce such a sensation in us,” with this leading directly into the “Pound an Almond” passage from viii.20 that we have already quoted. In both passages, properly understood, Locke is explicitly appealing to a primary quality, texture, in bodies that is causally responsible for the powers in bodies that produce our ideas of secondary qualities. When Locke says that “whiteness or redness are not in it [the Porphyre] at any time, but such a texture, that hath the power to produce such a sensation [as an idea of whiteness or redness] in us” (viii.19), he may, misleadingly, suggest that secondary qualities *are* textures—rather than powers in objects that are causally grounded in the primary quality of texture. But he is far from implying that secondary qualities *are* not in bodies at all, or are merely ideas. Likewise, when Locke says that “what is Sweet, Blue, or Warm in *Idea*, is but the certain Bulk, Figure, and Motion of the insensible Parts in the Bodies themselves, which we call so” (viii.15), he literally says, misleadingly, that certain ideas *are* certain primary qualities. What he means, however, is that these ideas of secondary qualities are *caused by* nothing other than certain primary qualities, qualities that imbue the corresponding bodies with the powers that *are* the secondary qualities.

I suspect that what should be said about Locke’s analogies between secondary qualities and “mere ideas,” such as sickness and pain, will fall between the extreme versions of each of these alternatives. If the general interpretation I have offered of Locke is on

track, then the analogies cannot be aimed at supporting the claim that secondary qualities too are mere ideas. But is Locke simply challenging us to explain why we think of secondary qualities as inhering as “resembling qualities” in bodies, when we know that ideas can be caused without having such “resembling causes”? Is he pointing to ways in which mechanical explanations provide a common structure for understanding both sickness and pain, on the one hand, and our ideas of secondary qualities, on the other? Or should he be seen to be gesturing at an enlarged role for appeals to powers in objects in the explanations we offer for changes in them? I take these questions to remain open.

Having discussed, in this section and the previous section, two of the three complications in interpreting Locke on primary and secondary qualities that I flagged in the introduction—the “Berkeleyan interpretation” of Locke, and Locke’s resemblance thesis—I shall conclude with the third of these complications, Locke’s views of the relationship between qualities and powers.

8. **Qualities and Powers.** In setting out the context of Locke’s discussion in section 2, I identified Locke as a figure himself in transition as seventeenth-century mechanical philosophy came to replace the Aristotelian worldview, noting that the status of *sensible qualities* was of particular importance for Locke motivating his distinction between primary and secondary qualities. The concept of a quality itself had a particular meaning in the Aristotelian framework that Locke was trying to transcend, and played a special role in scholastic accounts of perception that Locke saw corpuscularian metaphysics as transcending. The qualities of a thing were what gave that thing the distinctive character that it had, and these qualities were *transmitted* from that thing to a perceiver when that thing was perceived. Thus, for the scholastics, qualities were both located in bodies, and then through

transmission, also in the mind, initially as *visible species* and then, through further abstraction, as *notions* or *intelligible species*. Thus, one could talk of qualities as they are in objects, and as they are in the mind. Locke is saying that “sensible qualities,” his secondary qualities, do not fit this model of perception, but he is also challenging this model more generally. Qualities are *not* transmitted at all from object to perceiver; rather, the mechanical arrangement of and activity between corpuscles, which have just the primary qualities, are fully causally responsible for our perception of both primary and secondary qualities. Locke not only rejected the scholastic view of perception but also groped towards a rejection of its notion of quality, resting content with the ascription of qualities *to bodies* and ideas *to minds*. It is one of the ironies of the *Essay* that Locke, having arrived at this way of distinguishing qualities and ideas, then goes on to self-consciously talk of ideas *as they are in bodies* (e.g., II.viii.8).

Locke’s primary and secondary qualities are both qualities in bodies, though they are distinguished by Locke through the labeling of the former as *real* or *original* qualities, and the latter as in truth “nothing in the Objects themselves, but Powers to produce various Sensations in us” (II.viii.10 and II.viii.14). One further problem internal to Locke’s discussion is that in introducing the distinction between qualities (in bodies) and ideas (in minds) at viii.8, he says that “the Power to produce any *Idea* in our mind, I call *Quality* of the Subject wherein that power is.” As commentators have noted, this seems to say, fairly plainly, that qualities *are* powers; moreover, they are powers to produce ideas in our minds. Yet this is just the characterization that is given to *secondary* qualities, and so it is not clear whether that characterization picks out a distinct kind of quality.

One reply is to argue that secondary qualities are distinguished by being *merely* powers to produce such ideas, whereas (presumably) primary qualities are such powers but are also something more, such as the power to produce other kinds of effects (like those

qualities “of a third sort”), or the intrinsic properties of the ultimate constituents of bodies, corpuscles. Trying to help out Locke in this way is, unfortunately, to weave a web whose tangles become tighter the further one delves into the relationship between qualities and powers in the broader context of the *Essay*. I mention just three problems.

First, qualities in general would be understood in terms of powers (to produce ideas in minds), which would seem to call into question their status as properties *in objects* by making them extrinsic: a thing could lose its power to produce particular ideas in minds because of a change not in the object but in the minds it affects. This is a general problem for dispositional accounts of properties, such as the Lockean-inspired causal theory of properties (e.g., Shoemaker 1980, 1981), but one that is especially pressing for those wishing to put an empiricist twist on such an approach. Second, the idea of power includes in it “*some kind of relation*” (II.xxi.3), the idea of relation is a complex idea that involves a comparing mind (II.xxv), and relations themselves, not being particulars, do not have an independent existence for Locke (III.iii.1). Thus, analyzing qualities in terms of powers makes all qualities mind-dependent; this, in turn, seems to undermine much of what Locke wants to say about the demarcation of primary from secondary qualities. Third, as II.xxi.1–3 makes clear, the idea of power is conceived by Locke as a simple idea, but so too is that of quality, which makes it puzzling how one could be analyzed in terms of the other, given Locke’s epistemology, according to which only complex ideas are to be analyzed in terms of other ideas.

9. **Conclusion.** I have argued elsewhere (R. Wilson 2002) that Locke had a surprisingly robust and coherent conception of primary qualities, and that there is much more systematicity to his discussion of primary qualities than has been found by the vast majority

of commentators on II.viii of the *Essay*. There I also voiced my suspicion that Locke’s conception and discussion of secondary qualities lacked these features. What I think of as Locke’s official characterization of secondary qualities, given both at viii.10 and at viii.14, as “nothing in the Objects themselves, but Powers to produce various Sensations in us” is at the core of Locke’s view of secondary qualities, but we have seen some of the stresses and strains that arise in making sense of the whole of Locke’s discussion of secondary qualities, given that characterization. Yet, I have resisted the idea that the stresses and strains are deep enough to crack open Locke’s distinction between primary and secondary qualities.

This is in part because I view the distinction as resting principally on the conception of primary qualities, rather than that of secondary qualities. In this regard, it is telling that in the first edition of the *Essay* when Locke first elaborates on what he means by *Qualities* at II.viii.9, he does not pair his detailed characterization of primary qualities there with *any* characterization of secondary qualities. Indeed, it is only in the fourth edition, published more than ten years later in 1700, that Locke adjusts viii.9-10 so as to offer the pairwise contrast between primary and secondary qualities that are the focus of much discussion of the distinction. In the first edition, Locke moves immediately from his initial characterization of primary qualities to an abbreviated form of the material in viii.11-14 concerning how bodies produce ideas in us, merely mentioning (but not explaining) secondary qualities at viii.13 before naming what are usually called “sensible qualities” as “secondary qualities” at viii.14, and using the same characterization that initiates viii.10 in the fourth edition. (The same general point is true of *Draft C*; see Walmsley, 2003, pp. 441-3).

What is crucial to the distinction is that secondary qualities *lack* the inseparability, constancy, universality in observable bodies, and (subsequently) universality in *unobservable* bodies that characterize primary qualities, but the effects that the secondary qualities have,

the ideas that they give rise to in us, are to be understood, like our ideas of primary qualities, as effects of primary qualities. Important for Locke from the outset was what we might think of as the *negative* claim about secondary qualities: that, despite how we ordinarily think about such qualities and how they were typically thought of under the heading “sensible qualities,” they are not like primary qualities in being intrinsic qualities of objects themselves. Locke’s *positive* claim about secondary qualities—that they are powers to produce ideas in us—was part of his original view of secondary qualities. But Locke’s fixation on the negative claim explains two features of his discussion: his concentration on the two-part resemblance thesis in viii.15-22 throughout all four editions published during his lifetime, and his contentment with leaving the positive claim about secondary qualities somewhat in the background of his discussion in the first three editions of the *Essay*.

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