

**Locke: Theist, Agnostic, Dualist
(Ontology Edition)**

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1. Introduction

The debate over Locke's position on substance is as old as the *Essay* itself. As their 1696-98 correspondence reveals, one of Edward Stillingfleet's concerns is that Locke's views entail substance monism (type not token). In this context, substance monism is the view that there are ontologically independent concrete particulars called 'substances' and all of them belong to a single fundamental kind.¹ If substance monism were true, then the Anglican position—Stillingfleet was an Anglican bishop—that God the Father and Christ's body were of fundamentally different kinds would be threatened. Ensuring that we can have "certainty that there are both bodily and spiritual substances" (3:30²) is an essential first step to defending this Anglican doctrine.

Despite the early origins of this debate, relatively little scholarly attention has been given to Locke's general substance ontology. On Locke's view, how many fundamental kinds of substances are there, and what are they? Some have argued that Locke is a substance dualist, while many maintain that Locke was unable to commit to substance dualism, given his epistemological agnosticism, or that Locke could not be a substance dualist, given his metaphysics.³ Yet, few interpreters have dedicated significant ink to this question in isolation.⁴ A great quantity of interpretative energy has been devoted to Locke's accounts of what substances, substrata, and real essences are, and likewise there is great interest in Locke's position on the nature of our minds and bodies. But many of the same considerations commentators use to argue that Locke is not a substance dualist in that more limited domain cut against attributing the more general form of substance dualism to him. If the substrata of our bodies are unknown and unknowable, then why should we not interpret Locke as an idealist?⁵ And if Locke is a substance

¹ An ontologically independent concrete particular does not depend on any other concrete particulars in order to exist. As Locke writes, substances are "distinct particular things subsisting by themselves" (II.xii.6).

² Citations of this form, with Arabic numerals first, are for the original and unrevised twelfth edition of the *Works of John Locke* (1824), which I am using solely to cite the Stillingfleet correspondence contained therein. The citation format is volume:page.

³ Richard Aaron (1937, 143) and Peter Alexander (1985, 255) argue that Locke is a substance dualist (see also Alexander 1974, 1980, 1981), while Michael Ayers and Han-Kyul Kim (2010) maintain that his agnosticism prevents him from being one or, at least, a committed one. Indeed, Ayers argues that substance dualism was, for Locke, "dispensable *in toto*", despite his occasional "dualist lapses" (1991b, 39). Those, like Jonathan Bennett (1971, 1987, 2001), who argue that substrata are bare particulars must hold that Locke could not be a substance dualist due to this part of their interpretation, as Nicholas Jolley (2015, 60-61) has argued.

⁴ Ayers (1991b, 33-39) and Kim (2010) are notable exceptions. The lack of work dedicated to the question is surprising, given that an answer to questions like it is, as Edwin McCann puts it, one of the main desiderata traditionally demanded of a theory of substance. See McCann 2001, 87-90. (Of course, McCann also denies (2001, 90-91) that Locke sought to or could satisfy this desiderata (or any of the others) with his theory of substance. Hence McCann's defense of the "no-theory" reading.)

⁵ This is a possibility that must be ruled out, contra Matthew Stuart who claims that Locke offering "what he takes to be absolutely decisive arguments for God's existence and God's immateriality" is "enough to make him a substance dualist" (2013, 245; c.f. 221-223, 246-250, 264). At the very least, we also need to find Locke asserting that there

dualist when it comes to our minds and bodies, as some prominent interpreters maintain, then Locke must be a substance dualist more generally. Thus the importance of settling the latter issue is at least as great as the importance of settling the former. This paper is concerned with the latter.

As will become clear, Locke could not be a substance monist without abandoning many of his core principles. The strength of the case against this attribution of substance monism to Locke explains why Locke was so adamant to—and exasperated by—Stillingfleet's reading of him. However, this aspect of the issue is only one of my concerns in this paper. I also seek to show why Locke thinks that substance dualism is the preferred alternative, how Locke can maintain substance dualism given his tenets and his agnosticism, and why Locke is (and should be) open to being wrong about what the correct form of dualism is.

As I develop a comprehensive account of Locke's statements related to the question of substance dualism in the fourth edition of the *Essay* and in his letters with Stillingfleet, I present an argument on Locke's behalf for substance dualism. Along the way, I side with those who maintain that Locke thinks that the substrata of substances (probably) do in fact have qualities of their own, opposing the so-called "bare particular" reading. And I identify the substratum of each substance with its real essence, opposing those who identify it with the substance itself. Throughout, my focus is on the ontology as much as is possible. Much of the epistemological side of the story, including a compatible interpretation of Locke's theory of ideas, will have to wait for another day.

2. An argument from various Lockean tenets

2.1 - The argument itself

Substance dualism is the view that there are ontologically independent concrete particulars called 'substances', all of them belong to one and only one of two fundamental kinds, and there is at least one member of each kind in existence.⁶ In IV.x⁷ and IV.xi of the *Essay*, there are the materials for the skeleton of an argument for the claim that Locke is a substance dualist. Indeed, if those chapter were more explicit, this paper could be much shorter. However, there are too many gaps unfilled. Those chapters do not mention substance itself; they do not tell us the relation between substances, their substrata, and their real essences; they do not address the possibility of superaddition and the related distinction between spirits and immaterial substances; and they encourage us to overstate the confidence that Locke has in substance dualism.

If we draw from a wider range of Locke's texts, we can fill the gaps on Locke's behalf. I have organized an argument for Locke's substance dualism in premise-conclusion form below. Since

are material substances and that God is a substance, as well as a view on substrata like the one that I attribute to him in this paper.

⁶ Note the lack of necessity operators in this formulation. I take it that Locke's theism and agnosticism cut against his endorsement of the claim that substance dualism (or any general ontology) is necessary. God could have made the world in many different ways, for all we know.

⁷ Citations of this form, with Roman numerals first, are for the fourth edition (1700) of Locke's *An Essay Concerning Human Understanding* as it is rendered in P.H. Nidditch's Oxford University Press edition (1975). The citation format is book.chapter.paragraph.

Locke endorses all of its premises and it is valid, Locke is implicated in holding its conclusion, which makes him a substance dualist.

- P1. There are solid bodies that are substances that have solid substrata.
- P2. God exists, He is not solid, He is a substance, He has a substratum, and His substratum is not solid.
- P3. There is a non-solid substance that has a non-solid substratum. [P2]
- P4. Solid and non-solid substrata belong to different kinds.
- P5. Substances are differentiated into kinds by the kind to which their substrata belong.
- C. There are two kinds of substances that are exhaustive and exclusive, and each of them has at least one member in existence. [P1, P3, P4, P5]

To claim this argument implicates Locke in substance dualism is to assume that Locke is consistent and that there are no cases where Locke denies its conclusion. I see no reason to attribute inconsistency to him on this issue. Whether there are cases where Locke denies the conclusion is examined in section 3. In the intervening subsections, I show that Locke endorses each premise.⁸

2.2 - Explaining and justifying P1

Explaining and justifying P1 will take the bulk of the rest of the paper. There is great disagreement about how we should understand Locke's account of what substances are. Even to presume that substances *have* substrata—rather than to hold, say, that they are identical to substrata—is controversial. Although there is direct textual evidence for P1 (which I will ultimately provide), it only functions as evidence for P1 as I formulate it if I am on firm ground about these other issues. Presenting and discussing Locke's strongest argument for P1 is the best way for me to unpack what I mean by P1. Along the way, I will defend my position on those other issues. Here is the argument:

- P1*. There are bodies.
- P2*. All bodies are solid.
- P3*. Solidity is a primary quality.
- P4*. All primary qualities inhere in or are supported by substrata.
- P5*. There are solid bodies that are substances that have substrata. [P1*-P4*]
- P6*. Some of our ideas that represent as solid some of the bodies that are substances resemble those bodies as they are in themselves and independent of our perception of them. [P3*]
- P7*. If the bodies that are substances that we accurately represent as solid (with our resembling ideas) have substrata that have qualities (P8*), then these substrata are solid. [P5*, P6*]
- P8*. The bodies that are substances that we accurately represent as solid (with our resembling ideas) have substrata that have qualities.

⁸ As this methodology makes clear, my position is that Locke was "implicitly committed" to substance dualism, to use José Luis Bermúdez's terminology (1996, 226). Locke does not explicitly advocate the argument I attribute to him in one fell swoop, and Locke does not explicitly advocate for its conclusion since all of the most promising passages are ambiguous when considered in isolation (e.g. II.xxiii.15).

P1. There are solid bodies that are substances that have solid substrata. [P4*, P5*, P7*, P8*]

Throughout, I will use 'bodies' to refer to ontologically independent material concrete particulars. Since, for Locke, substances just are those concrete particulars which are ontologically independent, this means that I will use 'bodies' to refer to material substances, just as Locke does.⁹ So P1*, which states that there are bodies, is equivalent to both the claim that there are material substances.

P1* is most directly addressed by Locke in IV.xi. There Locke argues that we have sensitive knowledge of bodies existing independent of our minds for a variety of reasons. First and foremost is an argument from God's goodness. Locke seems to think that we can trust God to have created us with the capacity to acquire this sort of sensitive knowledge because bodies cause us pleasure and pain, having ideas of bodies that truthfully inform us of those bodies' existence and macroscopic nature allows us to interact with them in the most beneficial way, and God is all-good (IV.xi.3; c.f. IV.ii.14).¹⁰ And if we have knowledge of bodies existing independent of our minds, it follows that there are such bodies.¹¹ Locke confirms this view in many places elsewhere in the *Essay* (e.g. II.xii.6, II.xxx.5, II.xxxi.2, IV.ii.14, IV.iii.21, IV.xi.3) and in passages from his correspondence with Stillingfleet like the one quoted later in this section (3:29; c.f. 3:236, 3:241, 3:345).

As for P2*, Locke maintains that solidity—and not extension—is what makes bodies what they are and so differentiates them from space, which Locke thinks is void or vacuum (II.iv.1, II.xiii, 3:460-1, 3:470-1).¹² Still, Locke does not deny that "Solidity cannot exist without extension" (II.xiii.22). That solidity is a primary quality (P3*) follows from it being an "inseparable" property that is essential to bodies given that the primary qualities are the inseparable properties that are essential to bodies.¹³ Locke also explicitly lists solidity as the first of the primary qualities (II.viii.9).

It is uncontroversial that Locke maintains that all primary qualities inhere in or are supported by substrata (P4*)—where 'substrata' here is simply a plural term referring to more than one substratum—although what Locke thinks about the nature of the substrata is disputed. Often when Locke writes about substrata, his focus is on how our ideas of them are constituents of our ideas of substances. Here is a representative passage:

⁹ See III.x.15 for his discussion of this terminological choice and the contrast with 'matter'

¹⁰ Of course, the extent to which our faculties are veridical is relatively limited in Locke's view, since he holds that God's main aim is to constitute us with faculties that are "necessary for the Conveniences of Life, and Information of Vertue" (I.i.5). See Connolly 2015, 55, and Rossiter 2014 for further discussion of the delicate balancing act Locke engages in here. More on veridicality later in this section.

¹¹ Of course, there is a live debate over the nature of sensitive knowledge in Locke, including whether it is in fact knowledge or, rather, assurance. For a recent defense of the latter view, see Rickless 2015.

¹² For discussion of Locke's position on solidity, see Jacovides 2017, 91- 99. For discussion of Locke's positions on space and related issues, including his position that many disputes regarding them are merely verbal, see Newton 2012, 145-56.

¹³ As Margaret Atherton (1984a, 420) notes, Locke argues at II.xiii.25 that some property being inseparable from some being does not make it an essential property of that being. Hence my inclusion of the modifier "that are essential to bodies". See also IV.iii.14. For a discussion of the origins and nature of Locke's interest in the inseparable properties of bodies, see Jacovides 2017, 86-91.

[. . .] it be manifest, and every one upon Enquiry into his own thoughts, will find that he has no other *Idea* of any *Substance*, v.g. let it be *Gold, Horse, Iron, Man, Vitriol, Bread*, but what he has barely of those sensible Qualities, which he supposes to inhere, with a supposition of such a *Substratum*, as gives as it were a support to those Qualities, or simple *Ideas*, which he has observed to exist united together. (II.xxiii.6; bracketed ellipsis added)

In a prior paragraph in the same chapter (II.xxiii.2), Locke argues that we cannot even conceive primary qualities without conceiving of them being supported by substrata that do not themselves require substrata. That this relation of support is what prior authors had called "inherence" is confirmed in the above quoted passage from II.xxiii.6 and also in II.xiii.20, where Locke uses similar language to assert that the former term is the "plain English" version of the latter.

A passage from Locke's correspondence with Stillingfleet is perhaps the clearest case of Locke precluding the possibility that the inconceivability of independently existing primary qualities is merely a feature of our cognitive faculties.¹⁴ Locke is emphatic that the substrata cannot fail to exist, which clarifies that Locke thinks that they are mind-independent subjects of primary quality inhesion that support primary qualities wherever they exist (c.f. 3:5-7, 3:18-9, 3:345). Although Locke does not use the term 'substratum' here—he uses 'support' and 'subject of inhesion' instead—it is clear from the role played by the 'support' or 'subject of inhesion' that Locke is referring to substrata:

First, as to the existence of bodily substances, I know by my senses that something extended, and solid, and figured does exist; for my senses are the utmost evidence and certainty I have of the existence of extended, solid, figured things. These modes being then known to exist by our senses, the existence of them (which I cannot conceive can subsist without something to support them) makes me see the connexion of those ideas with a support, or, as it is called, a subject of inhesion, and so consequently the connexion of that support (which cannot be nothing) with existence. (3:29)¹⁵

With P4* in hand, we are almost in a position to infer P5* on Locke's behalf. However, since P5* asserts that there are solid bodies that are substances that have substrata., the assumption that substances *have* substrata and are not simply *identical to* substrata must be defended. Although I cannot argue for this at length in the present paper, I deny the identification of substrata with substances, contra those who defend the so-called 'deflationary interpretation'.¹⁶ It is my position that Locke's use of the term 'substratum' indicates that substrata, primary qualities, and all those

¹⁴ This is a possibility that must be precluded since Locke frequently denies that inconceivability implies impossibility, as at 3:467-72.

¹⁵ Note that here is a case of a passage where—as is quite common—Locke refers to ideas and qualities both as 'ideas'; Locke does this because his definition of 'idea' from I.i.8 is "whatsoever is the Object of the Understanding when a Man thinks" and Locke considers both what represents and what is represented to be objects in this sense (c.f. I.i.7, II.viii.8, 3:130-1, 3:233). Also note the use of the term 'mode', which is used in the Cartesian sense here to emphasize the primary qualities' dependence on the substrata.

¹⁶ Including Daniel Z. Korman (2010), Robert Pasnau (2011), and Michael Jacovides (2017), among others.

secondary qualities and powers that supervene on the primary qualities jointly constitute substances. This precludes the possibility that substances are identical to substrata.

One reason to favor my interpretation on this point is that it is the only one that explains Locke's descriptions of our *ideas* of substances. Locke thinks that our idea of a given bodily substance is a complex idea that is composed of our ideas of its qualities, powers, and *its substance*, as the following passage indicates (c.f. II.xxiii, 3:29):

[. . .] The *Ideas* of *Substances* are such combinations of simple *Ideas*, as are taken to represent distinct particular things subsisting by themselves; in which the supposed, or confused *Idea* of Substance, such as it is, is always the first and chief. Thus if to Substance be joined the simple *Idea* of a certain dull whitish colour, with certain degrees of Weight, Hardness, Ductility, and Fusibility, we have the *Idea* of *Lead* [. . .] (II.xii.6; bracketed ellipses added)

Note the two different uses of 'substance' here. Locke does not think that our idea of a given substance is identical to one of its constituents (our idea of *its* substance), nor does Locke think that the objects of the two ideas are the same. Although it is common for Locke to use 'substance' to refer to particular substances and *their* substances¹⁷, Locke also uses distinct terms for each when Locke calls the substance of a substance its 'substratum' (e.g. I.iv.18, II.xxiii.1, II.xxiii.5, II.xxiii.6, II.xxiii.37, IV.vi.7, 3:7, 3:13, 3:18). As a consequence, with 'substratum' I interpret Locke to be referring to the substance of a particular substance, and I follow him in this usage for the sake of clarity.¹⁸ The question of what exactly substrata are will be discussed throughout the rest of the paper.

Assuming this is the correct way of understanding the relationship between substances and substrata, we can infer P5* on Locke's behalf. If there are bodies, all bodies are solid, solidity is a primary quality, and all primary qualities inhere in or are supported by substrata, then there are solid bodies that are substances that have substrata.¹⁹ P5* is independently supported by innumerable passages where Locke asserts that bodily substances exist (e.g. IV.xi, 3:5-7, 3:18, 3:445, 3:454).

¹⁷ As well as to refer to *kinds* of substances and *their* substances. More on this below.

¹⁸ That Locke uses 'substratum' to refer to the substance of a substance is noted by many commentators, including Martha Brandt Bolton (1976a, 489fn5; 2015, 72-3), C.B. Martin (1980, 3), Kim (2015, 29), and Korman (2010, 75). However, 'substratum' is also used by Locke as a mass noun to refer to the stuff that constitutes substrata (i.e. one or more particular substance's substratums), as Peter Millican notes (2015, 9-10). In this paragraph here, I am using 'substrata' as a count noun to refer to the substances of particular substances. For further discussion of the mass noun usage, see Stuart 2013, 222-3, including footnote 12 on the latter. More on this in section 2.3. As the reader will see in that section, since I identify substrata (count noun) with real essences, I endorse the option that Stuart pursues beginning with the sentence which states "One could try to read 'the substance of' locution as a reference to real essence." Finally, to be clear, I deny that Locke holds that our idea of "pure substance in general" is our idea of a particular substratum (count noun), as it has often been argued; rather, the former idea is generated by a maximally general process of abstraction from ideas of the latter sort and represents all of them equally. Discussion of this issue will have to wait for the "epistemology edition" version of this paper.

¹⁹ It is worth noting that Locke presumes that there is exactly one substratum (read: count noun) per substance and vice versa. Assumedly this is because the unity of the primary qualities that partially constitute a bodily substance is best explained by a unified substratum.

Next is P6*, which is the claim that some of our ideas that represent as solid some of the bodies that are substances resemble those bodies as they are in themselves and independent of our perception of them. P6* can be attributed to Locke because solidity is a primary quality (P3*) and because of what primary qualities are. In summarizing his claims about the primary-secondary quality distinction, Locke describes primary qualities as being "in the things themselves, whether they are perceived or no" (II.viii.23; c.f. 3:75).²⁰ Secondary qualities, in contrast, are defined as the arrangements of primary qualities in bodies that cause us to perceive those bodies as colored, odorous, and so on. These arrangements of primary qualities would exist even if we did not exist, but the secondary qualities themselves would not, for they depend constitutively on our perceptual responses to the arrangements.

Corresponding to the distinction between the two kinds of qualities is a distinction between the ideas that we have of them. Locke states 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" (II.viii.15). Our ideas of the primary qualities of bodies could not be resemblances of them unless the primary qualities "do really exist in the Bodies themselves" independent of us and our ideas. Note that P6* is formulated as an existential claim because Locke does not deny that there could be cases where we fall prey to hallucinatory ideas in dreams that represent non-existent bodies as solid (II.i.17).

The conditional P7* follows from P5* and P6*, although the connection requires some unpacking. P7* states that if the bodies that are substances that we accurately represent as solid (with our resembling ideas) have substrata that have qualities (P8*), then these substrata are solid. The thought here is that if there are solid bodies that are substances that have substrata (P5*) and our ideas of those bodies' macroscopic primary qualities are in fact (sometimes) veridical, as P6* ensures, then this veridicality must hold at the level of the substrata, if the substrata have qualities at all. In what sense would our perception of bodies as solid be veridical if their substrata were not solid as well? Locke's justification for his belief in the veridicality of our perception of the macroscopic primary qualities of objects largely comes from the arguments that help him make the primary-secondary quality distinction in the first place, like that from perceptual relativity (II.viii.16-26; c.f. 3:399).

The power of this appeal to veridicality rests upon an assumption about the way Locke thinks about the relation that the substrata bear to the macroscopic primary qualities of substances. Although Locke is coy about the relation amounts to—and he repeatedly chides his predecessors for being confident about it—he does make some assertions about its nature. Aside from describing it as a relation of support (e.g. I.iv.18, II.xiii.19-20, II.xxiii.2, 3:8, 3:19, 3:21, 3:33, 3:42, 3:450-3) and inherence (e.g. II.xiii.20, II.xxiii.2, II.xxiii.6, 3:21, 3:25, 3:33), Locke also says that the primary qualities of a substance are caused by (e.g. II.xxiii.6) and depend on (e.g. 3:25²¹) its substratum.²² (Given the other terms used, the relevant sort of causation here could not

²⁰ As Jacovides puts it (2017, 109), primary qualities "belong to bodies intrinsically, independently of how they are perceived and, indeed, independently of how things stand with respect to everything aside from the bodies in which they inhere."

²¹ There Locke says "that substance is differently modified in the different species of creatures, so as to have different properties and powers whereby they are distinguished". I am taking the relation expressed by "so as to

be efficient causation.) And Locke is clear that it is in virtue of the macroscopic primary qualities of a substance bearing this relation to their substratum that they exist at all and, furthermore, that they are unified to form a single body (e.g. II.xxiii.3, II.xxiii.6). Since this relation is asymmetric, I infer from Locke's descriptions that substrata are more fundamental or explanatorily basic than the macroscopic primary qualities that they support. If there is anything that a bodily substance is like in itself, then it is whatever its substratum is like.

With this in mind, the argument from veridicality goes as follows. First, suppose $\sim P7^*$ for the purpose of a *reductio*. That is, suppose that the bodies that are substances that we accurately represent as solid have substrata that have qualities ($P8^*$) but these substrata are not solid. It follows immediately that our ideas that represent the bodies as solid (at the macroscopic level) do not resemble the bodies' substrata (at least with regard to that primary quality). But the fact that our ideas of the macroscopic primary qualities resemble the bodies as they are in themselves is central to the distinction that Locke draws between the primary and secondary qualities. If there were an equally great divide between *our representations of the macroscopic primary qualities of substances* and *the nature of the substrata of these substances* as there is between *our representations of the secondary qualities of bodies* and *the macroscopic primary qualities of those bodies*, then our perception of bodies as solid would not be veridical. That is, our ideas of solid bodies would not resemble them as they ultimately are in themselves.

This lack of resemblance would make a puzzle out of Locke's claim that the distinction between our ideas of primary qualities and our ideas of secondary qualities is, in large part, a distinction between representations that resemble bodies and those that do not. Our ideas of primary qualities are supposed to resemble the ways bodily substances are in themselves, while our ideas of secondary qualities are supposed to not resemble anything further, however otherwise useful they may be. If the substrata of bodies were nothing like their macroscopic primary qualities, then it would be hard to see how our ideas of the primary qualities would not be reduced to useful fictions just like our ideas of the secondary qualities.²³ So, $P7^*$: if the bodies that we accurately represent as solid have substrata that have qualities ($P8^*$), then these substrata are solid.

The reasoning behind the preceding argument from veridicality lends nearly as much credence to $P8^*$ as it lends to $P7^*$. $P8^*$ asserts that the bodies that we accurately represent as solid have substrata that have qualities. To be sure, this line of reasoning is more persuasive upon the assumption that the substrata have qualities in the first place, but it can also serve to justify this very assumption. If our ideas of primary qualities resemble how bodily substances are in

have" as a relation of dependence. Assuming the identification of substratum with real essence, which I will discuss and defend in section 2.3, there are many other passages where the relation is referred to with dependence language include II.xxxi.6, III.iii.15, III.vi.2, IV.vi.12, 3:79, and 3:88.

²² Assuming the identification in the prior footnote, other passages where the relation is referred to with 'flow' include II.xxxi.6, III.iii.17, III.vi.9, 3:82, and 3:91.

²³ Although Jacovides does not agree with my interpretation of Locke's views on substrata, we agree that Locke holds "that primary qualities are not mere powers to produce ideas in us" (2017, 89). Indeed, as Bolton (1976b) convincingly argues, there is a shift from the early drafts of the *Essay* to the final version (i.e. the fourth, Nidditch edition) from treating the primary qualities as powers to their distinctive categorical status. This shift creates Locke's primary-secondary quality distinction as we know it today. For a different interpretation, see Downing 2008, 104-110.

themselves and the substrata of bodily substances asymmetrically support their primary qualities in the aforementioned way, then these ideas—being ideas of qualities—provide good reason to believe that the substrata have qualities too. And the same reasoning lends credence to P1, which is the claim that there are solid bodies that are substances that have solid substrata. After all, solidity is the quality that the substrata would have, were our ideas of solidity to resemble how the bodily substances are in themselves.²⁴

There is evidence Locke holds that substrata are, in some ways, probably unlike anything that we have heretofore observed. This enables him to avoid the charge that the solidity of a substratum must itself inhere in or be supported by something further (and so on). Although we have arrived at P1, blocking this potentially vicious infinite regress is crucial to the defense of P8*. The concern goes like this: if the substrata of particular bodily substances are solid, then this solidity itself must inhere in or be supported by something further—particularly if it is possessed by the extremely small parts of the substrata of the substances. And if this "something further" must itself be solid, then the problem simply reiterates itself. What stops the looming infinite regress? E. J. Lowe argues that this objection is a serious problem for Locke (2005, 79-80), and it is indeed a problem if my interpretation is the correct one.²⁵ Yet, my solution to this problem relies on a particular position on Locke's views on the relationship between real essences and substrata—a position that is implicit in some of the above argumentation—so I will address these issues in the next subsection. In the subsequent subsection, I will explain my solution. Then, in subsection 2.5, I grapple with how Locke's agnosticism impinges on the foregoing. The discussion of the overall argument carries on after these detours in subsection 2.6.

2.3 - A substance's substratum just is its real essence

Although it is clear that Locke thinks that all primary qualities must inhere in or be supported by the substrata of substances (P4*), it is disputed whether the substratum of a given substance is to be identified with the real essence of that substance and whether real essences are in any sense knowable, much less that we can justifiably assert that they are solid. I hope the reader can see how it might be that the substrata of bodies would have to be solid if they have qualities at all and if our ideas of the solidity of bodily substances resemble the bodies as they are in themselves. Still, understanding more about *what substrata are* is essential to understanding how exactly this could work in Locke's system. If substrata are real essences, then what Locke tells us about real essences is relevant to the present project.

Following some before me, it is my position that Locke maintains that the real essences of particular bodily substances just are their microscopic internal constitutions, and it is these internal constitutions upon which the substances' macroscopic (token) primary qualities depend for their existence and their unity.²⁶ We group ideas of (type) macroscopic primary qualities, along with the ideas of (type) sensible qualities and powers that we observe to supervene on

²⁴ The foregoing argumentation could be described as (part of) a "move from property dualism to metaphysical dualism", where 'metaphysical dualism' refers to substance dualism as I have defined it. Bermúdez (1996, 236-239) argues that this move is "illegitimate", but Bermúdez fails to respect the veridicality claim at the root of Locke's primary-secondary quality distinction.

²⁵ Other discussions include La Bossiere 1994, Lowe 2000, 506-508, and Stuart 2013, 213-214, 218-219.

²⁶ Jean-Michel Vienne (1993) and Atherton (1984b) deny that real essences are internal constitutions for Locke, but since Locke uses the terms interchangeably, I take this to be strong evidence against their view.

them, under abstract ideas Locke calls 'nominal essences' that we associate with a term and which are our ideas of kinds (of substances). Once we demarcate these kinds via our ideas, we then can think of them (the kinds of substances) as having real essences, which just are those microscopic (type) qualities instantiated by the real essences of members of each (nominally defined) kind.²⁷ The real essences of the members themselves instantiate (tokens of) these qualities. Our ideas of these latter real essences are accurate when they resemble them—that is, when they resemble the microscopic internal constitutions of the particular bodily substances in question. Since Locke holds that we lack any privileged access to these internal constitutions, he repeatedly expresses agnosticism about the nature of real essences. Crucially, it is my view that the real essence of a particular substance just is its substratum.²⁸ This last part of the view, which identifies substrata with real essences, is controversial. It contrasts with the 'bare particular' reading, the 'deflationary' reading, the 'functionalist' reading, and the 'no-theory' reading.²⁹

This description matches with Locke's in III.vi, which is perhaps where Locke best links together the various strands of his thought on these issues (c.f. III.iii.12-7, 3:83-6). Some passages that corroborate this reading find Locke asserting that the real essences of bodily substances are not only in some sense knowable but, furthermore, probably solid. Here is a passage where Locke explicitly states that the real essences are solid (c.f. II.xxiii.8, II.xxiii.12, IV.vi.12):

The particular parcel of Matter which makes the Ring I have on my Finger, is forwardly, by most Men, supposed to have a real Essence, whereby it is *Gold*; and from whence those Qualities flow, which I find in it, *viz.* its peculiar Colour, Weight, Hardness, Fusibility, Fixedness, and change of Colour upon a slight touch of Mercury, *etc.* This Essence, from which all these Properties flow, when I enquire into it, and search after it, I plainly perceive I cannot discover: the farthest I can go, is only to presume, that it being nothing but Body, its real Essence, or internal Constitution, on which these Qualities depend, can be nothing but the Figure, Size, and Connexion of its solid Parts [. . .] (II.xxxi.6; bracketed ellipsis added)

In this passage, Locke treats the real essence of the matter that makes the ring on his finger what it is ("whereby it is *Gold*"; i.e., whereby it has the sensible qualities that constitute its nominal essence and thus lead us to call it 'gold' and 'a ring')³⁰; Locke describes the relation between the real essence of his gold ring and its qualities as one of "flow" and dependence; Locke indicates that 'internal constitution' is a synonym for 'real essence' (c.f. 3:25, 3:78, 3:82-3, 3:88); and

²⁷ Dan Kaufman (2007, 517) calls the first type of real essence "the *n-relative*" real essences and Locke calls the second type "individual" real essences.

²⁸ Those who share my position or occupy a broadly similar one in identifying substrata with real essences include Atherton (1984a, 1984b), Maurice Mandelbaum (1964), John W. Yolton (1970), Ayers (1975, 1991), and Gábor Forrai (2010). Some commentators, like Ayers and Brandon C. Look (2009), deny that there would be real essences were there to be no nominal essences. Others, like David Owen (1991), Lisa Shapiro (1999), Kaufman (2007), McCann (2007), and Bolton (2015, but see 1976a), agree with my position on real essences, but do not commit to a position on the identification of substrata with real essences or reject my position. For a significantly different reading of these issues, see Leary 2009, 275-8.

²⁹ Prominent defenders of the bare particular reading are Leibniz, Jolley (1999), and Bennett (1971, 1987, 2001). As mentioned previously, Korman (2010), Pasnau (2011), and Jacovides (2017), among others, defend the deflationary interpretation. The functionalist reading is defended by Kim (2010, 2014, 2015). The no-theory reading is defended by McCann (2001).

³⁰ On this particular point, see the strongest version of this claim at III.iii.17.

Locke asserts that the real essence of his ring "can be nothing but the Figure, Size, and Connexion of its solid Parts". The passage, then, confirms nearly every aspect of my position.³¹

The issue that has not been addressed—either by this passage or me—is why we should interpret Locke as holding that the substratum of his gold ring is its real essence. There are two main reasons why we should interpret Locke as identifying substrata with real essences. First, contrary to what is often claimed, there are rare passages where Locke is more explicit and identifies the two in the Stillingfleet correspondence. Here is one:

Your lordship adds, "for although we cannot comprehend the internal frame and constitution of things, nor in what manner they do flow from the substance."

Here I must acknowledge to your lordship, that my notion of these essences differs a little from your lordship's; for I do not take them to flow from the substance in any created being, but to be in every thing that internal constitution, or frame, or modification of the substance, which God in his wisdom and good pleasure thinks fit to give to every particular creature, when he gives a being: and such essences I grant there are in all things that exist. (3:82)

In this paragraph, Locke could not be using 'the substance' in "the substance in any created being" to refer to the created beings themselves (i.e. particular substances), since the substance in question is said to be *in* them. Instead, Locke is referring to the substrata of the created beings. It is also evident from the context that Locke wants to resist Stillingfleet's assertion that the real essences, which are the essences being discussed in this passage, "flow from the substance". Locke says that real essences just are "that internal constitution, or frame, or modification of the substance". Given the prior substitution, this is just to say that real essences are configurations of substrata, which brings us to an important distinction.

Here, as elsewhere, Locke implicitly relies on a count noun-mass noun distinction. As we can see from the above passage, the real essence of a particular substance is the configuration of the (partially) unknown stuff that gives rise to the primary qualities of that substance. In this way, 'the substratum of that horse', with 'substratum' used as a mass noun to refer whatever stuff gives rise to the primary qualities of the horse, and 'the real essence of that horse' have the same referent. 'Real essence' is here, as always, used as a count noun.³² The distinction between 'substratum' used as a count noun and 'substratum' used as a mass noun seems to be analogous to the Aristotelian distinction between matter modified by form into a particular substance and unmodified matter (of some variety; not prime matter, on my view). So, although the substratum (count noun) of a particular substance just is its real essence, that same substratum (mass noun)

³¹ Given that Locke takes pains to talk specifically about the ring on his finger, it also indicates the priority of particular substances' real essences to the real essences of the (nominally defined) kinds to which they belong. Locke makes a similar indication at III.vi.19 in a passage which is discussed with clarity and care by Owen (1991, 113-5).

³² In this connection, note that 'matter' is properly used, Locke argues, as a synonym for 'substratum' used as a mass noun. Locke is most direct about this in III.x.15: "For *Body* stands for a solid extended figured Substances, whereof *Matter* is but a partial and more confused Conception, it seeming to me to be used for the Substance and Solidity of Body, without taking in its Extension and Figure: And therefore it is that speaking of *Matter*, we speak of it always as one, because in truth, it expressly contains nothing but the *Idea* of a solid Substance, which is every where the same, every where uniform."

could be modified to constitute a different real essence, although any modification of that real essence would result in its non-existence.³³

The second main reason to identify the substrata of particular substances with their real essences is that the real essences are the best candidates to fulfill the substrata role.³⁴ Arguments like the one I gave from veridicality provide strong reason for thinking that substrata have qualities and solidity in particular. Given that, as already noted, Locke is explicit that real essences are solid as well (see II.xxiii.8, II.xxiii.12, II.xxxi.6, IV.vi.12), this parallel provides us with good reason to identify substrata with real essences. Otherwise, we have two kinds of beings, both of which bear an asymmetric explanatory relation with the sensible qualities and which are solid, but are nonetheless entirely distinct. This is implausible.

One way to push back against this reason is to contrast Locke's use of 'substratum' for "logical" work with his use of 'real essence' for explanatory work.³⁵ However, this contrast in usage is not consistent with all of the texts. For instance, Locke uses explanatory language speaking of substratum, as in the below passage ("from which they do result"):

[. . .] Because, as I have said, not imagining how these simple *Ideas* can subsist by themselves, we accustom our selves, to suppose some *Substratum*, wherein they do subsist, and from which they do result, which therefore we call *Substance*. (II.xxiii.1; bracketed ellipsis added)³⁶

Still, it must be granted that the contexts in which Locke uses 'substratum' and 'real essence' are often different. 'Substratum' is generally used when Locke discusses how qualities must be qualities of *something*. 'Real essence' is more often used in discussions of the origin of the sensible qualities, corpuscularianism, natural kinds, and related topics. But these differences in sense and usage does not mean that Locke is *not* referring to the same thing with the two words in those contexts. As Edwin McCann notes, every interpreter in my camp grants these differences:

We should be careful to note that this interpretation does not claim that the concept of a substratum (support to qualities) is the same as the concept of a real essence (the causal basis of the powers and qualities of an object), but instead that these different concepts pick out the same thing, that is, that the real essence of an individual substance also functions as the substratum to the properties and qualities of that individual substance. (1994, 81)³⁷

Yet, one might worry: why does Locke effect this referential collapse without being more explicit about it?³⁸ Contra McCann (2007, 186-7) and others of a kin, I do not think that his

³³ The failure to make these distinctions makes McCann (2007, 189-90) draw odd conclusions from this very passage.

³⁴ Arguments from role like this one have a long history and are used by Mandelbaum (1964, 39) and Ayers (1977, 77-80, 84-5, 90-6).

³⁵ For objections of this sort, see Bennett 2001, 109-110, and Stuart 2013, 217.

³⁶ See also II.xxiii.3 and II.xxiii.6. The language in those two passages is not purely "logical".

³⁷ See also McCann 2007, 185.

³⁸ See Forrai 2010 for an analysis of drafts of the *Essay* where Locke is more explicit about the collapse.

silence is puzzling. Part of Locke's overarching project is to naturalize the canonical notions of Aristotelian metaphysics and bring them into alignment with the fruits of the science of his day. Thus, at times, Locke is speaking to the Aristotelians and putting his philosophy in their idiom, and it is then that Locke uses 'substratum'. That Locke is effecting a translation of this sort is clear from his explicit commentary on the elusiveness of the ancient and medieval terminology, and his stated preference for "plain English" (II.xiii.20, II.xxiii.2, 3:91). Beyond the language, Locke rejects substantial forms as plausible candidates for what substrata are, and it is in no small part because Locke sees them as "chimeras" (III.iv.30)—that is, as products of mysterious metaphysical speculation that are not merely "wholly unintelligible" (III.iv.10) but that have also set back the sciences (see II.xxiii.3, III.iii.13, III.iii.17). At other times, Locke is interested in the progress that the sciences have made since Aristotle and the medievals in discovering the microscopic structures underlying the qualities of the sensible world, and Locke turns his attention to these structures and to diagnosing the reasoning involved in thinking about them. Locke is not committed to the truth of corpuscularianism, and thus the identification of substrata with real essences *that are constituted by arrangements of corpuscles*, but Locke thinks it provides a useful template.³⁹ Surely it is closer to the truth than hylomorphism.

Turning the tables, two questions can be posed to those who deny the identification on the basis of this supposed duplicity. First, what sort of thing is a substratum? Is it a natural being or a non-natural one (like substantial form)? As noted, Locke is clear throughout his works that he has no use for anything of the latter sort. But if, then, it is a natural being, what else could it be? To say, as Martha Brandt Bolton does (2015, 71), that a substratum is not a substance's "real internal constitution, but something lurking beyond" is to ignore crucial texts like 3:82 and the reasoning I have presented above on Locke's behalf. And to claim more substantively that "substratum does for the particles that compose real internal constitutions what constitutions do for the sensible qualities found together in gold or a horse, that is, 'support' their qualities in the sense of potentially explaining them" is to ignore the fundamentality of the constituents of real essences on Locke's view. Locke envisions the constituents of the real essences of particular substances as fully explaining everything about those substances.⁴⁰ There is nothing more fundamental than them.

Second, if the problem with the identification is that Locke fails to make it more explicit, why think he would have done so? To say, as McCann does (2007, 187), that Locke would have known to make it more explicit "because of his Scholastic training and because of Boyle's discussion of a related issue in his major work, *The origine of Formes and Qualities*" is to ignore the consistency with which Locke maintains ironic distance from direct criticism of the Aristotelians. In this case, instead of attacking them outright, Locke tries to show them that their use of the idea of substratum is normal but ripe for refinement and naturalization via a theory of real essence informed by the sciences. If, as Locke tries to show, such a theory can usefully

³⁹ That is, even with recent scientific advances, Locke would retain *the structure* of his theory of substrata/real essence but simply supplant the corpuscularian details with something more up-to-date. And yet this updated filler would still pale compared to the knowledge had by God or other spirits. As Atherton puts it in a slightly different context (1984a, 417): "It is not substance that serves as a 'surrogate,' but rather the things the corpuscular scientist says that represents the lesser knowledge, which must stand-in for the greater knowledge of substance achievable only by spirits whose faculties are not limited as ours are."

⁴⁰ This is not to claim that all of the *powers* of particular substances are fully explained by the constituents of *their own* real essences. That would only be the case if each was the only substance in the world.

explain various phenomena—e.g. natural kinds and thought about them—but involves no reference to mysterious non-natural beings like forms, then it will replace Aristotelian alternatives. And, indeed, it did.

This is not to claim that there are not mysteries concerning the role that a particular substance's substratum—that is, its real essence—is supposed to play for Locke. For one, as noted previously, it is not clear what relation the qualities of a particular substance bear to its substratum or real essence. Yet, whatever this relation ultimately amounts to, there is no reason to think that its specification and analysis is a task that I alone must undertake in virtue of my kind of interpretation of Locke on substratum, contra the claims of E. J. Lowe (2005, 79-80; see also 66). Every interpretation except those which identify substrata with particular substances themselves features this lacuna. And that is not a bad thing: it is a lacuna for Locke too!

2.4 - Blocking the regress?

As noted previously, I propose that Locke thinks that there *could be* something special about the real essences of particular bodily substances that stops the aforementioned vicious regress. Why? Well, Locke thinks that there are properties of the real essences of particular bodily substances that are unobservable by us and that are unlike anything that we can observe. It follows that Locke is in principle open to there being properties of the real essences of particular bodily substances that explain why the primary qualities of the real essences need no substrata of their own. One reason to interpret Locke in this way is found in the passages where Locke argues that if we knew the nature of the real essences of particular bodily substances, then we would know their causal powers *a priori* (IV.iii.25, IV.vi.11, 3:81-2).

In passages like these, Locke argues that were we to grasp the nature of the fundamental constituents of the real essences of particular bodily substances, we could know *a priori* the way in which they would causally interact. Locke claims that the knowledge that we would have would be just like our present knowledge of "the Properties of a Square or a Triangle". This is an interesting claim. From our knowledge of the essential properties of triangles and the essential properties of squares, we can in fact infer the necessary connections between them *a priori*. For instance, we can infer that the square can be divided into two triangles. This is because, as Locke says elsewhere (III.iii.18), we do in fact have access to the real essences of these figures. Locke's claim is that the analog would be true of, say, bits of rhubarb and particular humans, if only we had access to their real essences. In virtue of knowing the properties of some rhubarb's real essence and the properties of the real essence of a human (and any other real essences that generate the background conditions for a given interaction between them; see IV.iii.29), we would be able to infer the necessary connections between them *a priori*. In particular, Locke tells us that we could infer that the rhubarb would purge the human.⁴¹

It seems that—and this is where the regress gets blocked—Locke is thinking that knowledge of the real essences of bodily substances would simply consist of knowledge of all of what makes the substances what they are. In fact, this seems to follow by definition, for the essence of any

⁴¹ For a similar reading of these passages, see Downing 2007, 368-71. Stuart (2013, 274-77) argues that Locke is not talking about "particular parcels" of matter (i.e. bodies) in these passages, and instead Locke's interest is the real essences of *kinds*, but I take the wording of IV.iii.25 to be strong evidence to the contrary (e.g. "of any two Bodies").

being, in Locke's preferred sense, just is all of what makes it what it is. Indeed, as Locke says in III.iii.15, "*Essence* may be taken for the very being of any thing, whereby it is, what it is." In knowing all of the essential properties of a triangle or a square, we know what it is that makes the figure a triangle or a square. To put it another way, we know the conditions that are necessary and sufficient for there to be a triangle or for there to be a square.

Likewise, if we were to know all of the essential qualities of some rhubarb and some human, we would have knowledge of what it is that makes them what they are. We would know the necessary and sufficient conditions for the existence of these bodily substances. Perhaps there are properties of the fundamental solid constituents of bodies that explains why their solidity need not or could not inhere in or be supported by anything more fundamental. That is, there could be an explanation of why the primary qualities of the real essences need no substrata of their own. Of course, it is hard to imagine what knowledge of the nature of real essences would be like. But Locke need not commit to what it is about the real essences of bodily substances that provides the ultimate grounds of the existence of the substances and that of their primary qualities, since it is precisely his position that we do not know them, and perhaps that we cannot (see II.xxiii.29 for an instance where Locke seems to indicate the latter).

It is for this reason that there is room to read Locke's statements about the consequences of our knowledge of the nature of the real essences of particular material substances as giving him a means to stop the aforementioned regress. One possible wrinkle is that it is not entirely clear how these passages relate to Locke's claim in IV.iii.14 that "we neither know the real Constitution of the minute Parts, on which their Qualities do depend; nor, did we know them, could we discover any necessary connexion between them, and any of the secondary Qualities [. . .] Our Knowledge in all these Enquiries, reaches very little farther than our Experience." It is not evident why the necessary connection between the primary qualities of the real essence of a particular substance and the secondary (macroscopic) qualities of that substance is any different from the necessary connection between the active powers of a particular bit of rhubarb and the passive powers of a particular man.

On the basis of this latter passage, Atherton (1984a, 422) argues that Locke did not think that "a detailed knowledge of corpuscles would amount to a necessary science of bodies", and she proposes that it is crucial that Locke limits himself to talk of powers in IV.iii.25.⁴² In whatever manner one comes down on that issue, I believe Locke has the resources to block the troublesome regress, assuming he would have been willing to soften claims like that in IV.iii.14. Either Locke thinks real essence knowledge could be as substantive as I have suggested Locke does, or Locke has his doubts and thinks it would still leave us in the dark in many regards (à la Atherton). On the first disjunct, the regress has a possible resolution in the way I describe. On the second disjunct, there is room for a possible resolution as well, since the more mystery that one attributes to the real essences, the more room there is for there to be something about them that does the trick.

2.5 - Squaring Locke's agnosticism with P1

⁴² See also Wilson 1979, 147-58, and McCann 1994, 69-71.

One mystery is that Locke often describes the real essences or substrata of particular substances as "unknown". If they are in fact unknown, then why should we read Locke as asserting that there are solid bodies that are substances that have solid substrata (P1)? Indeed, as many have noted, Locke repeatedly expresses agnosticism about the ultimate nature of real essences. Consider this passage:

And, after all, if we could have, and actually had, in our complex *Idea*, an exact Collection of all the secondary Qualities, or Powers of any Substance, we should not yet thereby have an *Idea* of the Essence of that Thing. For since the Powers, or Qualities, that are observable by us, are not the real Essence of that Substance, but depend on it, and flow from it, any Collection whatsoever of these Qualities, cannot be the real Essence of that Thing. Whereby it is plain, that our *Ideas* of Substances are not *adequate*; are not what the Mind intends them to be. Besides, a Man has no *Idea* of Substance in general, nor knows what Substance is in it self. (II.xxxi.13)

There is no denying that Locke repeatedly seems to say that we have no idea of substrata or real essences at all, as when Locke claims that "we are as far from the *Idea* of the Substance of Body, as if we knew nothing at all" (II.xxiii.16; c.f. 3:26, 3:28, 3:77-9, 3:82). Completely answering this challenge would require an lengthy jaunt into Locke's theory of ideas. Since the focus in this paper is on Locke's ontology, this exercise will have to wait. Still, there are two points that can be made in response at this juncture.

First, note that one might take Locke's statement above that "any Collection whatsoever of these Qualities, cannot be the real Essence of that Thing" to be a direct denial of P1. After all, solidity is a quality and, given the identification of substrata with real essences, P1 states that the real essences of particular bodily substances are solid. Yet, this objection lacks force because the referents of 'these Qualities' in the above quote are the token qualities that are observed by us to exist in bodies and not those that constitute the real essences of those bodies. Simply because we observe a body to be solid, it does not follow that we thereby observe the solidity of the real essence of that body. Simply because we observe a rock to have mass, it does not follow that we thereby observe the mass of its fundamental particles. More generally, simply because two beings have the same property, it does not follow that in observing one, you observe the other, even if one of the beings (or properties) depends on the other. Locke makes this exact point when Locke asserts that were we to have more powerful vision and were we to turn our eyes to bodies, we would not have the same ideas of their qualities that we now have, though we would likely find that their real essences are solid (II.xxiii.11-12; c.f. III.vi.3).⁴³

Second, despite the pressure on us to think that real essences are solid on Locke's account, I grant that there is countervailing pressure from his agnosticism, and the final two sentences of the above passage are a typical expression of it. Because of passages like these, I think it is clear that Locke does not believe that we can represent the nature of real essences as well as we can represent the nature of the macroscopic primary qualities. However, I do not think that this cuts against any of the premises of the second argument for substance dualism, including P8* and P1. The full story is complicated, but, in short, Locke holds that our representations of real essences are *relative* ideas, which are inadequate and inferior to *positive* ideas, which are those ideas we

⁴³ Atherton (1984a, 419) makes a similar point but not in connection with this passage.

represent the macroscopic primary qualities with. Locke makes it very clear to Stillingfleet throughout their correspondence that we can still achieve knowledge and certainty concerning matters in which we lack positive ideas.

What about the passages where Locke expresses extreme agnosticism about the ultimate nature of bodies? The worry that these passages present is that if we have no knowledge about the ultimate nature of bodies, then how could Locke be so sure that they are solid all the way down? Doesn't this cut against the arguments from veridicality? An instance where Locke makes room for this worry is in the (second) famous Indian passage:

If any one should be asked, what is the subject wherein Colour or Weight inheres, he would have nothing to say, but the solid extended parts: And if he were demanded, what is it, that Solidity and Extension inhere in, he would not be in a much better case, than the *Indian* before mentioned; who, saying that the World was supported by a great Elephant, was asked what the Elephant rested on; to which his answer was, a great Tortoise: But being again pressed to know what gave support to the broad-back'd Tortoise, replied, something, he knew not what. (II.xxiii.2)

One reason that Locke has for emphasizing his agnosticism in this way is well-known: Locke has some doubts about the prevailing corpuscularianism of his time.⁴⁴ In light of these reservations about the truth of the scientific theories of his day, Locke's statements like that about "the *Indian*" should be interpreted as instances or consequences of his more general tendency to be humble and honest about the limitations of human knowledge. Such humility is part of his broader position, as has been well documented by many commentators.⁴⁵ Locke thinks that our faculties being limited is in no small part a function of God creating us in a way that best fits our interests. His assertions about corpuscularianism are expressions about the dissatisfaction about the explanatory power of the results of (what had been) the best science of his era. Nonetheless, the agnosticism that these statements represent and flow from does not imply that Locke cannot consistently hold that there are reasons provided by his other principles—those undergirding the primary-secondary quality distinction foremost among them—to maintain that real essences of bodily substances are a certain way (i.e., solid) rather than another. There is a tension here, but its net effect is to lower Locke's credence in the proposition that the real essences of bodily substances are solid, but not to make him suspend belief in it entirely.

2.6 - Premises P2-P5, and the conclusion C

With these issues addressed, we can proceed to the other premises of the main argument. P2 is the claim that God exists, He is not solid, He is a substance, He has a substratum, and His substratum is not solid. Locke is firm that God is a substance (II.xxiii.21, II.xxiii.32, II.xxvii.2, 3:468). It is likely the case that Locke thinks that all substances have substrata, for this is no small part of what makes them substances in the first place—without substrata, there would be no distinction between substances and modes (in the Lockean sense). Still, some direct evidence for spirits like God having substrata is found in the texts where Locke discusses spirits more

⁴⁴ For discussion, see McCann 1994, 58-9, 67-76 and Atherton 1991, 48. For primary text examples of Locke doubting, see II.xxiii.24, II.xxiii.28, IV.iii.6, IV.iii.13, IV.viii.11, 3:464-8.

⁴⁵ See, e.g., Connolly 2015 and Rossiter 2014.

generally. There Locke argues that just as we cannot conceive of the primary qualities except as inherent in or as supported by substrata, so too can we not conceive of the faculties of spirits (the "Modes of Thinking"; see II.xix) existing in isolation (II.xxiii.5). Just as is the case with material substances and the primary qualities, spiritual substances are in part constituted by substrata that provide support for their faculties. And our ideas of spirits—including those of our selves—represent this fact (II.xxiii.15).

Turning to whether God or His substratum is solid, we see that Locke holds that bodies are divisible since they are solid, as in II.viii.9. In fact, this passage shows that Locke thinks any being with primary qualities is divisible. This follows from the conjunction of his views that the primary qualities are inseparable from one another, that extension is a primary quality, and that anything extended has extended parts. Recognizing that this implicates him in infinite divisibility (though Locke is careful to say we have no positive idea of infinity in II.xxix.16 and Locke says that infinite divisibility is a "difficult" and "absurd" doctrine in II.xxiii.31), Locke confirms as much in II.xv.9: "Every part of Duration is Duration too; and every part of Extension is Extension, both of them capable of addition or division *in infinitum*." Elsewhere, as in II.xxiii.23, 3:38, and 3:63, Locke commonly refers to divisibility as if it is an essential feature of bodies.⁴⁶

The foregoing suffices to show that Locke maintains that if either a being is solid or has a solid substratum, then that being is divisible, for anything which is solid is divisible, whatever sort of being it is. So if God is solid or God has a solid substratum, then God is divisible. But God is not divisible. Therefore, God is not solid and given that God has a substratum, God's substratum is not solid. The crucial assumption that God is not divisible is supported by a premise of an argument found in IV.x.14 (see also the subsequent two paragraphs, as well as IV.x.19).⁴⁷ There Locke argues that if God is divisible, then there are an infinite number of Gods. Since Locke maintains that there is only one God, Locke infers that God is not divisible (and so not material). This is corroborated by Locke's passing comment in II.xxiii.35 that "in his own Essence, (which certainly we do not know, not knowing the real Essence of a Peble, or a Fly, or of our own selves,) God be simple and un compounded".

With P2 in hand, we can derive P3 from existential generalization: there is a non-solid substance that has a non-solid substratum. Recall P1 is the claim that there are solid bodies that are substances that have solid substrata. The move from P1 and P3 to the conclusion C that there are two kinds of substances that are exhaustive and exclusive, and each of them has at least one member in existence, relies on two additional premises: P4 and P5. P4 states that solid and non-solid substrata belong to different kinds and P5 states that substances are differentiated into kinds by the kind to which their substrata belong (if their substrata belong to different kinds, so do they). Before I discuss the conclusion C, I will briefly address these two premises.

⁴⁶ How, then, is Locke an atomist, given that corpuscularianism is a form of atomism? In short, Locke defines atoms as extended beings that have parts that are immobile relative to one another and that have naturally unchangeable boundaries (see II.xxvii.2). So, atoms still have parts, but they can only be divided into them by God. See Stuart 2013, 54-55, 259 and Bolton 2015, 67-68.

⁴⁷ For discussion of these arguments and the ways in which they are similar to contemporary arguments against certain views on the supervenience of the mental on the physical, see Ott 2010.

The best argument I can give on Locke's behalf for P4 relies on his views about inseparability of the primary qualities. As mentioned before, Locke maintains in II.viii.9 and elsewhere that the primary qualities are inseparable from one other, such that solid beings are extended (and vice versa), extended beings have figure (and vice versa), and figured beings are in motion or at rest (and vice versa). It follows from this inseparability thesis that solid substrata must be extended, figured, and in motion or at rest. It also follows from this thesis—and this is the important bit—that non-solid substrata could not be extended, could not be figured, and could not be in motion or at rest. This means that solid and non-solid substrata do not differ in *only* one quality; rather, they differ with respect to all of the primary qualities. Whatever non-solid substrata are like in themselves, they lack all of the primary qualities. This is sufficient to differentiate them by kind from solid substrata.

P5 is supported by Locke's position on kinds and real essences more generally. To be sure, as I mentioned, Locke is adamant that beings are generally differentiated into "Species" by their nominal essences because we lack knowledge of their real essences (III.iii.13, 3:83-6). Nevertheless, as we have seen, Locke does not deny that there are in fact real essences, knowledge of which would allow us to differentiate substances as they are in themselves into kinds (just as we can do now with beings like triangles that have known real essences). Locke is very clear that there are real kinds:

I would not here be thought to forget, much less to deny, that Nature in the Production of Things, makes several of them alike: there is nothing more obvious, especially in the Races of Animals, and all Things propagated by Seed. (III.iii.13)

It must be admitted that the "kinds" to which solid and non-solid substrata belong are different from the kinds that real essences differentiate substances into. For there are innumerable kinds of substances, differentiated by their real essences, that fall into the solid substrata "kind" (e.g. gold, cedar, quartz, and so on). The "kind" to which beings with solid substrata belong contains a wide range of sub-kinds. It is, for lack of better words, a kind of kinds. Still, just as real essences differentiate individual kinds, so too do general shared features across sets of real essences differentiate them into kinds of kinds. Two of these sets (the solid and non-solid substrata) form the two kinds of kinds at issue in the question of whether Locke is a substance dualist.⁴⁸

As for the conclusion C, it is worth noting that since those substances with non-solid substrata are not defined in positive terms (i.e., in terms of a quality that their substrata *have* rather than one that they *do not have*), room is left for there to be multiple kinds of substances that have non-solid substrata. One possible differentiator of kinds of substances with non-solid substrata could be whether they are finite or not.⁴⁹ This distinction would result in a more fine-grained three

⁴⁸ For an argument for the negation of P5, see Martin 1980, 7. The source of the disagreement seems to be our different positions on whether Locke identifies substrata with real essences or not.

⁴⁹ Another possible differentiator would be whether they are thinking or not. Alexander (1985, 226) suggests this as an interpretation of Locke in the *Essay*. In a different context, Peter Anstey argues on the basis of IV.x.9 and others that Locke indicates "a preference for a cogitative/incogitative distinction over the material/immaterial distinction" (2015, 230). I do not think that this preference, if Locke had it more generally, is evident from either the *Essay* or the Stillingfleet correspondence. I grant that Locke eschews the material/immaterial distinction in many contexts, and this is an innovation, as Anstey rightly notes. However, as I argue, the material/immaterial distinction is the *only* relevant one when it comes to Locke's ontology. Indeed, whether a being is thinking or not would not be Locke's

substance view, one that Locke mockingly considers at one point in the *Essay* while discussing space:

And I desire those who lay so much stress on the sound of these two Syllables, *Substance*, to consider, whether applying it, as they do, to the infinite incomprehensible GOD, to finite Spirit, and to Body, it be in the same sense; and whether it stands for the same *Idea*, when each of those three so different Beings are called *Substances*?
(II.xiii.18)

Locke does not mock the three substance view because Locke thinks that it is clearly false. Indeed, Locke concludes the above-quoted paragraph with the question "And if they can thus make three distinct *Ideas* of *Substance*, what hinders, why another may not make a fourth?" I take this question, and the rest of the paragraph, to be a statement of his typical agnosticism about how many kinds of substances there ultimately are. This agnosticism does not cut against the conclusion C because although Locke is open to the possibility that he should be more discriminating with his ontology, I believe Locke thinks that the division of substances into those that have solid substrata and those that do not is the most natural or probable (in fact, Locke explicitly makes this division at 3:464-5, 3:468, and 3:491).⁵⁰ Still, it must be admitted that perhaps this is a case where his theism should have encouraged a more fine-grained approach and led him to treat God as a special kind of substance.

3. Two objections considered

Before concluding, I want to briefly consider two objections to the overall argument I attribute to Locke. The first objection is owed to the famous passage (IV.iii.6) where Locke seems to indicate that there could be a "mere material Being" that thinks, if only God decided to "superadd to Matter a Faculty of Thinking".

I do not think that this passage is problematic for my claim that Locke is a substance dualist. It does not make room for a denial of substance dualism because even if God were to make it so that *all* thinking beings other than Himself are bodies, He could not make Himself a body for the reasons already provided. That is, even if all non-divine thinking beings were bodily substances with divisible substrata, and so all non-divine beings were bodily substances of this sort, God would still be a non-bodily substance because He is indivisible. And so long as Locke must maintain that God belongs to a different kind of substance than bodily substances, which Locke maintains exist as well (for the reasons cited), Locke remains a substance dualist.⁵¹ Of course,

preferred differentiator since Locke maintains that nothing (except God, perhaps) is always thinking—in other words, thinking is not a property that beings always or essentially have, if they have it.

⁵⁰ So, although my view is, as Stuart (2013, 221-223) puts it, "a dualist version of [Ayers'] Mysterious Stuff reading—a Mysterious *Stuffs* reading", I maintain that Locke is sufficiently confident to distinguish the non-solid substrata from the solid substrata. The stuffs are mysterious but they can still be divided into two fundamental kinds. That is, although on Ayers' "interpretation it is easy to see how Locke's teachings about substance might be thought to undermine substance dualism with regard to the created world" (Jolley 2015, 58) or in general, the case I make in this paper is intended to undermine this natural presumption.

⁵¹ A point that Kim (2010, 190) tentatively grants in passing: "It could be argued that Locke is a substance dualist with respect to God and creation, but there is no clear evidence that Locke proposes a substance dualism within the created world." Stuart (2013, 221) makes a similar claim: "Locke is a substance dualist, holding that God and

although Locke maintains that it is probable that the mind is immaterial despite it being indemonstrable (3:33, 3:457, 3:482), this passage does complicate the debate over Locke's position on our mind and bodies, but that is not my concern here.

It is worth noting in this connection that Locke explicitly makes a distinction in his correspondence with Stillingfleet at 3:33 that helps illuminate the terminology that Locke uses to describe the possibility of divine superaddition. There Locke distinguishes between *spiritual* substances and *immaterial* substances (c.f. 3:460-1, 3:470-1). Locke defines a spiritual substance as a substance that has "the modification of thinking, or the power of thinking joined to it [. . .] without considering what other modifications it has, as whether it has the modification of solidity or no", while Locke implies that an immaterial substance, by contrast, is one that is not solid (and thereby not extended, figured, and so on). Given that Locke also asserts that a "substance, that has the modification of solidity, is matter, whether it has the modification of thinking or no", we can say that the possibility of divine superaddition is the possibility that there are material substances that are also spiritual.⁵² Since no material substance can be immaterial (as Locke writes at 3:465, even God "cannot make a substance to be solid and not solid at the same time"), the only way that the possibility of divine superaddition could undermine the attribution of substance dualism to Locke would be if there were no spiritual substances that were immaterial. But God is a spirit of that sort, as Locke explicitly confirms to Stillingfleet in this very passage (3:33), so the conclusion of my argument is secured.⁵³

A more serious objection can be generated from the previously cited chapter where Locke discusses space (II.xiii). There Locke seems to allow that space is extended but not solid. Locke's goal is to differentiate himself from Descartes and others who maintain that space just is a body. Locke argues for a real distinction between space and body by using the same kind of argument from conceivable separability that Descartes uses to defend his mind-body dualism:

And if it be a Reason to prove, that Spirit is different from Body, because Thinking includes not the *Idea* of Extension in it; the same Reason will be as valid, I supposed, to

angels, at least, are immaterial thinking substances." Although Kim joins Ayers in arguing that ultimately Locke's agnosticism cuts against attributing substance dualism to him, many likeminded commentators simply fail to engage with the issue at any depth. Many are interested in Locke's position on our minds and our bodies instead. As Lisa Downing (2015, 128) writes, "the question here is about dualism [. . .] about *finite* thinkers." Still others, like Bermúdez (1996, 224n6), following Roger Woolhouse (1983), argue that this sort of substance dualism is not in fact (the relevant sort of) substance dualism: "On my usage, which I take to be the standard one, the view that there are, on the one hand, material substances, and, on the other, God as an immaterial thinking substance, will not come out as dualist." Since I am in the business of excavating Locke's general ontology, I take interpreters' divisions between Creation and Creator to be irrelevant to my purposes.

⁵² Locke asserts elsewhere that "I justified my use of the word spirit in that sense, from the authorities of Cicero and Virgil, applying the Latin word spiritus, from whence spirit is derived, to a soul as a thinking thing, without excluding materiality out of it." See 3:483.

⁵³ Locke argues that God is immaterial in at least two other places. First, in IV.x.10 that there is matter and claims that it is inconceivable that matter could produce thought on its own (c.f. 3:293). Since we exist, we are thinking beings, we have not existed since eternity, and there is no natural creation *ex nihilo*, but God has existed from eternity and is all-knowing, Locke concludes that God must be immaterial. A similar argument is found in the Stillingfleet correspondence (3:468-9; c.f. 3:62-3, 3:291; 3:294, 3:299). There Locke argues that perception is essential to God but not essential to matter, so, by the indiscernibility of identicals, it follows that God is not material. Note that Locke is more explicit in the correspondence and describes the conclusion of this argument as the claim that "God is an immaterial substance."

prove, that *Space is not Body*, because it includes not the *Idea* of Solidity in it; *Space and Solidity* being *as distinct Ideas*, as Thinking and Extension, and as wholly separable in the Mind one from another. (II.xiii.11)

The problem is that if this argument goes through, its conclusion would appear to be a denial of the aforementioned inseparability thesis, which is essential to the argument. In fact, Locke doubles down on this conclusion, ultimately arguing that the existence of extension that is not solid (i.e. empty space, void, or vacuum) is necessary for the possibility of movement (II.xiii.22; c.f. II.xvii.4). Locke seems to be aware of the consequence of his apparent denial of the inseparability thesis and Locke simply bites the bullet in response to a "*Dilemma*" from his opponents:

Those who contend that *Space and Body* are *the same*, bring this *Dilemma*. Either this *Space* is something or nothing; if nothing be between two Bodies, they must necessarily touch; if it be allowed to be something, they ask, whether it be Body or Spirit? To which I answer by another Question, Who told them, that there was, or could be nothing, but solid Beings, which could not think; and thinking Beings that were not extended? Which is all they mean by the terms *Body* and *Spirit*. (II.xiii.16)

And, as quoted at the conclusion of section 2.6, Locke subsequently considers the possibility of a three substance view—God, finite spirits, and bodily substances—and refuses to rule it out, in part because Locke thinks there is a real distinction between those spirits that can move and those that cannot (II.xxiii.21). Furthermore, prior to that (II.xiii.17), Locke refuses to admit if space is itself a substance or not, much less whether it belongs to the same kind as body or the same kind as spirit.

In light of these troubling passages, all I can affirm is that Locke appears to be open to the possibility that there could be—under a still more fine-grained schema than that discussed above—four kinds of substances: God, finite spirits, space, and bodily substances. Locke expresses a similar thought in IV.iii.27 (c.f. III.vi.11-12, 3:18), where Locke wonders: "But that there are degrees of Spiritual Beings between us and the great GOD, who is there, that by his own search and ability can come to know?" Yet, the fact that Locke is open to these possibilities does not undermine C at all. C is not a claim about what must be true. Instead, as above, the foregoing indicates that Locke leaves room for a more fine-grained account, despite the weight of the texts indicating that Locke thinks that the fundamental divide is between solid and non-solid substances.

On the other hand, a rejection of the inseparability thesis would spell trouble at two key junctures in my overall argument: first, the argument for P2 relying on the link between solidity and extension (and thereby divisibility) and, second, P4. Still, I think that there is room for Locke to maneuver here. Locke could just maintain that the inseparability thesis is not a general truth of the form 'all beings with any primary qualities have all of the primary qualities'. Instead, Locke could argue that it is in fact a necessary truth but simply one that obtains for bodies and bodies alone: 'all bodies with any primary qualities have all primary qualities'. Since space is not a body, per Locke's position contra Descartes, it need not comply with the inseparability thesis. And the

inseparability thesis would still hold true of bodies, which is all that matters for my (Locke's) argument.

4. Conclusion

Now we can see why Locke in the *Essay* describes substance monism as "a very harsh Doctrine" (II.xiii.18). Locke is certain that there are two general kinds of substances: the solid ones and the non-solid ones. So, although Locke holds that we will never know how many species belong to each kind of kinds, we can still be confident that substance monism is false. And we can also be confident that God the Father lacks "body" or "parts" while Christ had a body and "all things appertaining to the perfection of Man's nature", just as is stated in the Thirty-Nine Articles of Religion of the Anglican Church from 1562. If, as seems to be the case, one of Stillingfleet's concerns was whether Locke had precluded the possibility of there being two fundamentally different kinds of beings, one to which God the Father belongs and one to which Christ's body belongs, then Locke had no good reason for concern. Locke was wary of commenting on Anglican doctrine in his correspondence with Stillingfleet, but Locke was right to repeatedly and emphatically deny that his position on substance runs afoul of it. Locke is a substance dualist and, contra Stillingfleet, there is "certainty that there are both bodily and spiritual substances" (3:30). Whether God the Father and Christ's body could be the same token substance, on the other hand, is another question entirely, and one that Stillingfleet would have been wise to press on Locke, especially given Stillingfleet's concerns about the import of the divine superaddition passage.

Bibliography

- Aaron, R. (1937). *John Locke*. Oxford: Oxford University Press.
- Alexander, P. (1974). "Boyle and Locke on Primary and Secondary Qualities," *Ratio* 16, pp. 51–67.
- Alexander, P. (1980). 'Locke on Substance-in-General [I]', *Ratio* 22, pp. 91–105; reprinted in *John Locke: Critical Assessment*, R. Ashcraft, ed. London : Routledge. 1991. Vol. 4, pp. 182–198.
- Alexander, P. (1981). 'Locke on Substance-in-General [II]', *Ratio* 23, pp. 1–19; reprinted in *John Locke: Critical Assessment*. Vol. 4, pp. 198–217.
- Alexander, P. (1985). *Ideas, Qualities and Corpuscles: Locke and Boyle on the External World*. Cambridge University Press.
- Anstey, P. R. (2015). "John Locke and the Philosophy of Mind," *Journal of the History of Philosophy*, 53:2, pp. 221-244.
- Atherton, M. (1984a). "Knowledge of Substance and Knowledge of Science in Locke's Essay," *History of Philosophy Quarterly*, 1:4, pp. 413-428.
- Atherton, M. (1984b). "The Inessentiality of Lockean Essences," *Canadian Journal of Philosophy*, 14:2, pp. 277-293.
- Atherton, M. (1991). "Corpuscles, Mechanism, and Essentialism in Berkeley and Locke," *Journal of the History of Philosophy*, 29:1, pp. 47-67.
- Ayers, M. (1975). "The Ideas of Power and Substance in Locke's Philosophy, " *Philosophical Quarterly*, 25, pp. 1-27.
- Ayers, M. (1991a). *Locke, Volume I: Epistemology*. Routledge.
- Ayers, M. (1991b). *Locke, Volume II: Ontology*. Routledge.
- Bennett, J. (1971). *Locke, Berkeley, Hume: Central Themes*. Oxford University Press.
- Bennett, J. (1987). "Substratum," *History of Philosophy Quarterly*, 4, pp. 197-215.
- Bennett, J. (2001). *Learning from Six Philosophers, Volume 2*. Oxford University Press.
- Bermúdez, J. L. (1996). "Locke, metaphysical dualism and property dualism," *British Journal for the History of Philosophy*, 4:2, pp. 223-245.
- Bolton, M. B. (1976a). "Substances, Substrata, and Names of Substances in Locke's *Essay*,"

- Philosophical Review*, 85:4, pp. 488-513.
- Bolton, M. B. (1976b). "The origins of Locke's doctrine of primary and secondary qualities," *Philosophical Quarterly*, 26:105, pp. 305-316.
- Bolton, M. B. (2015). "Locke's Account of Substance in Light of his General Theory of Identity," P. Lodge & T. Stoneham (eds.): *Locke and Leibniz on Substance*, Routledge, pp. 63-88.
- Connolly, P. J. (2015). "Lockean superaddition and Lockean humility," *Studies in History and Philosophy of Science*, 51, pp. 53-61.
- Downing, L. (2007). "Locke's Ontology," L. Newman (ed.): *The Cambridge Companion to Locke's 'Essay Concerning Human Understanding'*, Cambridge University Press, pp. 352-380.
- Downing, L. (2008). "The 'Sensible Object' and the 'Uncertain Philosophical Cause,'" D. Garber and B. Longuenesse (eds.): *Kant and the Early Moderns*, Princeton University Press, pp. 100-116.
- Downing, L. (2015). "Locke's Choice between Materialism and Dualism," P. Lodge & T. Stoneham (eds.): *Locke and Leibniz on Substance*, Routledge, pp. 128-145.
- Forrai, G. (2010). "Locke on Substance in General," *Locke Studies*, 10, pp. 27-59.
- Garber, D. (1982). "Locke, Berkeley, and Corpuscular Scepticism," C. M. Turbayne (ed.): *Berkeley: Critical and Interpretive Essays*, University of Minnesota Press.
- Jacovides, M. (2017). *Locke's Image of the World*. Oxford University Press.
- Jolley, N. (1999). *Locke: His Philosophical Thought*. Oxford University Press.
- Jolley, N. (2015). *Locke's Touchy Subjects: Materialism and Immortality*. Oxford University Press.
- Kaufman, D. (2007). "Locke on Individuation and the Corpuscular Basis of Kinds," *Philosophy and Phenomenological Research*, 75:3, pp. 499-534.
- Kim, H. (2010). "What kind of philosopher was Locke on mind and body?," *Pacific Philosophical Quarterly*, 91, pp. 180-207.
- Kim, H. (2014). "Lockean Humility," *Philosophy*, 89:4, pp. 537-558.
- Kim, H. (2015). "The Supposed but Unknown: A Functionalist Account of Locke's Substratum," P. Lodge & T. Stoneham (eds.): *Locke and Leibniz on Substance*, Routledge, pp. 28-44.

- Korman, D. Z. (2010). "Locke on substratum: a deflationary interpretation," *Locke Review*, 10, pp. 61-84.
- LaBossiere, M. C. (1994). "Substances and substrata," *Australasian Journal of Philosophy*, 72:3, pp. 360-370.
- Leary, N. (2009). "How Essentialists Misunderstand Locke," *History of Philosophy Quarterly*, 26:3, pp. 273-292.
- Locke, J. (1975). P. H. Nidditch (ed.): *An Essay Concerning Human Understanding*. Oxford University Press.
- Locke, J. (1823). *The Works of John Locke*. Twelfth Edition.
- Look, B. C. (2009). "Leibniz and Locke on Natural Kinds," V. Alexandrescu (ed.): *Branching Off: The Early Moderns in Quest for the Unity of Knowledge*, Zeta Books, pp. 380-406.
- Lowe, E. J. (2000). "Locke, Martin, and Substance," *The Philosophical Quarterly*, 50:201, pp. 499-514.
- Lowe, E. J. (2005). *Locke*. Routledge.
- Mandelbaum, M. (1964). *Philosophy, Science, and Sense Perception: Historical and Critical Studies*. The Johns Hopkins Press.
- Martin, C. B. (1980). "Substance substantiated," *Australasian Journal of Philosophy*, 58:1, pp. 3-10.
- McCann, E. (1994). "Locke's philosophy of body," V. C. Chappell (ed.): *The Cambridge Companion to Locke*, Cambridge University Press.
- McCann, E. (2001). "Locke's Theory of Substance under Attack!," *Philosophical Studies*, 106:1/2, pp. 87-105.
- McCann, E. (2007). "Locke on Substance," L. Newman (ed.): *The Cambridge Companion to Locke's 'Essay Concerning Human Understanding'*, Cambridge University Press, pp. 157-191.
- Millican, P. (2015). "Locke on Substance and Our Ideas of Substances," P. Lodge & T. Stoneham (eds.): *Locke and Leibniz on Substance*, Routledge, pp. 8-27.
- Newton, J. W. (2012). "Locke, Language, and Meta-Philosophy: An Interpretation of Book III of John Locke's *Essay Concerning Human Understanding*." Dissertation. University of Virginia.
- Ott, W. (2010). "Locke's Exclusion Argument," *History of Philosophy Quarterly*, 27:2, pp. 181-

196.

Owen, D. (1991). "Locke on Real Essence," *History of Philosophy Quarterly*, 8:2, pp. 105-118.

Pasnau, R. (2011). *Metaphysical Themes: 1274-1671*. Oxford University Press.

Rickless, S. (2015). "Locke's 'Sensitive Knowledge': Knowledge or Assurance?," D. Garber & D. Rutherford (eds.): *Oxford Studies in Early Modern Philosophy, Volume VII*, Oxford University Press, pp. 187-224.

Rossiter, E. (2014). "Locke, providence, and the limits of natural philosophy," *British Journal for the History of Philosophy*, 22:2, pp. 217-235.

Shapiro, L. (1999). "Toward 'Perfect Collections of Properties': Locke on the Constitution of Substantial Sorts," *Canadian Journal of Philosophy*, 29:4, pp. 551-593.

Stuart, M. (2013). *Locke's Metaphysics*. Oxford University Press.

Vienne, J. (1993). "Locke on Real Essence and Internal Constitution," *Proceedings of the Aristotelian Society*, 93, pp. 139-153.

Wilson, M. D. (1979). "Superadded Properties: The Limits of Mechanism in Locke," *American Philosophical Quarterly*, 16:2, pp. 143-150.

Woolhouse, R. (1983). *Locke*. Harvester Press.

Yolton, J. W. (1970). *Locke and the Compass of Human Understanding*, Cambridge University Press.