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# Debates in Modern Philosophy

## Essential Readings and Contemporary Responses

Edited by  
Stewart Duncan and Antonia LoLordo

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- 4 I take Ayers' view to be something like this. See Ayers 1981, 213–215, 222–231, 244–246.
- 5 See Boyle's interesting discussion of the universal and particular notions of nature, in *A Free Inquiry into the Vulgarly Received Notion of Nature* (published probably in 1685 or 1686, but started in 1666 (Boyle 1772, V.177; Boyle 1979, 187–188).
- 6 For discussion of this background see Dijksterhuis (1961, 433ff), Boas (1952), Kuhn (1952), Heilbron (1979, 19–46); and for the best short introduction see Westfall (1971, esp. Chapters 2 and 4).
- 7 For plastic natures in Cudworth, see the selections from *The True Intellectual System of the Universe* in Patrides (1970, 288–325).
- 8 See Charleton (1654), a work based very much on Gassendi's *Syntagma*. For general discussions of these issues see Kargon (1966, esp. Chapters 8–9), Redwood (1976, Chapters 2 and 4), and Westfall (1966, Chapter 5, and esp. pp. 108–110).

## CHAPTER 12

### Mechanism and Essentialism in Locke's Thought

LISA DOWNING

In this chapter, I engage with Edwin McCann's interpretation of Locke, which in turn arbitrates an earlier critical dispute between Margaret Wilson and Michael Ayers. Thus, the map of interpretive positions could get complicated quickly. Let's begin with some points that I think all of us agree on: Locke was a participant in the science (better: natural philosophy) of his time.<sup>1</sup> This is in part just a matter of biographical fact: Locke's training as a physician and his interactions with Robert Boyle's circle are well known (see e.g. Woolhouse 2007). More important for our purposes, though, his epistemological and ontological views in the *Essay* show the influence of mechanist/corpuscularian natural philosophy.<sup>2</sup>

As McCann explains, Margaret Wilson's "Superadded Properties: The Limits of Mechanism in Locke" pointed out a tension that appears as one tries to articulate Locke's mechanism and its philosophical implications. On the one hand, Locke seems to accept Boylean corpuscularianism and to enshrine it in his account of what the primary qualities (the qualities they have in and of themselves) of bodies are and what the real essences (the physical constitutions which ground the observable qualities on the basis of which we classify them into kinds) of bodies are like. On the other hand, as Wilson stresses, Locke also seems to hold that some qualities (e.g. thought, gravity, cohesion) cannot be the natural consequences of the operations of Boylean corpuscles. This apparent acknowledgement of the explanatory gaps in corpuscularianism is often accompanied by the suggestion that we must chalk such qualities up to God, or, more specifically, regard them as having been 'superadded' by God. Wilson's interpretation has both negative and positive implications, as she sees it.

It does, of course, attribute to Locke an unresolved tension. However, it clears Locke of a naïve faith in the explanatory power of Boylean mechanism and, instead, attributes to him insight into its limitations (though this insight is not fully realized in his system).

McCann seeks to resolve this tension and to vindicate Locke as a consistent mechanist. He holds that once the nature of Locke's mechanism is properly understood, the apparent conflict between that mechanism and the admission of explanatory gaps can be dissolved.

I too think that Locke holds a consistent position, but not the one that McCann offers him. The best way to zero in on the difference between our two interpretations is to spell out the tension in Locke this way—Locke appears to be committed to an inconsistent triad:

1. Boylean corpuscularianism: Bodies possess only size, shape, solidity, motion/rest as intrinsic and irreducible qualities; they operate only by contact at impact.
2. Essentialism: All of bodies' qualities, powers, and behavior follow from their real essences (that is, their real and ultimate physical constitutions) plus spatial relations among bodies.<sup>3</sup>
3. Gappiness: Not all of bodies' qualities, powers, and behavior follow deductively from corpuscularian real essences plus spatial relations.<sup>4</sup>

A quick way to characterize the difference between our interpretations is this: McCann denies that Locke holds (2), while I deny that he holds (1) and thus offer a different account of the role of corpuscularianism in Boyle's thought. We both affirm (3), though we understand its import quite differently, and have correspondingly different accounts of Locke's talk of superaddition. But this is a dry, if accurate, way of putting our differences. I proceed next to lay out the two interpretations, their motivations, and their challenges in more detail. Unsurprisingly, I will argue that the essentialist interpretation of Locke is more attractive than McCann's committed corpuscularian interpretation.<sup>5</sup>

### McCann: Committed Corpuscularianism and Bare Laws

McCann urges that we take Gappiness seriously:

The problem for a mechanistic reading of Locke is therefore this: because of our inability to conceive a mechanistic explanation of such phenomena as the cohesion of bodies, their mutual gravitational attraction, their power to cause sensation in perceivers in a regular manner and thus their possession of secondary qualities and other powers defined in reference to sensation, we are forced to ascribe these phenomena to God's action as determined by his arbitrary will. Since this ascription is not merely

an epistemological place-holder but is instead an hypothesis about the causal ancestry of the phenomena, it is inconsistent with the mechanist's claim that all the phenomena of bodies can be explained in terms of the bulk, figure, texture and motion of their solid parts.

(see p. 150 above)

His solution is as follows: The phenomena of bodies are explicable, but not in terms of corpuscularian real essences alone. Rather, important and pervasive reference must be made to God's action. Specifically, "God actually forges the connections between types of material constitution and the superadded powers and qualities" (see p. 152 above). He "forges" these connections by ordaining laws:

God superadds a power or quality to body by ordaining that a law holds connecting a certain type or types of material [corpuscularian] constitution . . . with the power or quality. The law is arbitrary in that it is only one of a number of possible but mutually exclusive connections . . . and that is the one that does obtain is due only to the undetermined action of God.

(see p. 153 above)<sup>6</sup>

So, bodies have corpuscularian real essences, and their behavior flows from those real essences, but only *given* the laws arbitrarily decreed by God. This is to deny essentialism and to endorse gappiness, as I have defined them. McCann resists Wilson's suggestion, however, that some qualities are not a "natural consequence" of mechanist constitutions, since God's "actions establish (in part) what are these natural workings" of matter (see p. 154 above).

McCann's account has many virtues. It clears Locke of charges of inconsistency. It takes his use of corpuscularianism at face value as indicating commitment to the truth of that scientific theory, which seems a nicely straightforward reading. Its invocation of laws of nature sounds plausible and attractive to our ears. And it fits naturally with some places where Locke speaks of God's superadding qualities or abilities such as thought to bodies (e.g. *Essay* IV.iii.6).

However, the interpretation has vices (or challenges) as well. The most obvious motivation to look for an alternative is provided by the fact that there is solid textual evidence in favor of what I have labeled Locke's essentialism (as both Wilson and Ayers point out). That is, Locke indicates in many places that if we had knowledge of the real essences of bodies, we would be able to deduce their further qualities in a geometrical fashion. Perhaps the most striking passage is this one:

The whole extent of our Knowledge, or Imagination, reaches not beyond our own *Ideas*, limited to our ways of Perception. Though yet it be not

to be doubted, that Spirits of a higher rank than those immersed in Flesh, may have as clear *Ideas* of the radical Constitution of Substances, as we have of a Triangle, and so perceive how all their Properties and Operations flow from thence: but the manner of how they come by that Knowledge, exceeds our Conceptions.

(*Essay* III.xi.23)

On McCann's interpretation, this just comes out false. For triangles, we know the real essence, according to Locke, as it coincides with the nominal essence (that is, the collection of qualities necessary and sufficient to count as a thing of that kind, namely, a triangle). When we do geometry, we deduce further properties from that real essence. Locke says that angels or the like could do this with corporeal things. But if McCann is right, they could not do these deductions just by consulting the real essences and drawing deductive conclusions; they would also have to know (through experience or some sort of testimony) God's contingent volitions.<sup>7</sup>

A second difficulty, with broad implications, is the importance that McCann's interpretation assigns to God's decreeing laws of nature. The textual evidence for this part of the interpretation is very weak. Locke almost never theorizes in terms of laws of nature in the *Essay*. McCann quotes what is really the only significant passage in which he does refer to such physical laws:

The Things that, as far as our Observation reaches, we constantly find to proceed regularly, we may conclude, do act by a Law set them; but yet by a Law, that we know not: whereby, though Causes work steadily, and Effects constantly flow from them, yet their *Connexions* and *Dependencies* being not discoverable in our *Ideas*, we can have but an experimental Knowledge of them.

(*Essay* IV.iii.29)

While the talk of a law being set to things seems to fit well with McCann's interpretation, the rest of the passage suggests that the law is just a way of summarizing what results from the flowing or following of effects from causes. There is no trace here of McCann's picture of God's "forging" a connection by arbitrarily decreeing a law. Another way to put this point is this: If God merely arbitrarily decreed a law, then our experimental acquaintance with the regularity would be all there is to know, at least as far as the created world goes. Locke, however, clearly holds that there are "connexions and dependencies" out there in the physical world that elude our grasp.

This, in turn, leads to one of the strongest points against McCann's interpretation: If McCann's bare laws account of superaddition were correct, then Locke ought to hold that there is no special problem of how matter could think, nor ought we to be perplexed by gravity. For the only difficulty in either

case would be the usual one of comprehending the workings of an all-perfect being. But this is clearly not Locke's view:

If it be asked, why they limit the omnipotency of God, in reference to the one rather than the other of these substances; all that can be said to it is, that they cannot conceive how the solid substance should ever be able to move itself. And as little, say I, are they able to conceive how a created unsolid substance should move itself; but there may be something in an immaterial substance, that you do not know. I grant it; and in a material one too: for example, gravitation of matter towards matter, and in the several proportions observable, inevitably shows, that there is something in matter that we do not understand . . . it must therefore be confessed, that there is something in solid, as well as unsolid substances, that we do not understand.

(Locke 1823, IV.464)

Again, what Locke concludes here is not simply that God has done something, and we don't fully understand how he could do that, but rather that there is something about bodies themselves, material substances, that we do not understand.

Further, I would like to suggest that the role McCann assigns to laws of nature, while it fits with contemporary theorizing about laws, is in fact not truly in harmony with Locke's seventeenth century context.<sup>8</sup> McCann writes:

. . . we should note that God's actions are required only to set the general background for any particular causal interactions among bodies, and thus for a particular body's having a certain set of causal powers; he does not directly work any of the effects which proceed from the superadded powers or qualities, nor need he superadd the qualities to particular bodies on a case-by-case basis.

(see p. 154 above)

Suppose, then, that the sun now manages to exert a gravitational attraction on the earth, retaining it in its elliptical orbit, preventing it from leaving on the tangent. What caused that? Not the sun itself, on this account, whose mechanical nature is incapable of action at a distance. Not God, who does not directly work such effects. The law?<sup>9</sup>

Boyle himself raises concerns about breezily invoking laws of nature:

. . . to speak properly, a law being but a notional rule of acting according to the declared will of a superior, it is plain that nothing but an intellectual being can be properly capable of receiving and acting by a law.

(Boyle 1996, 24)

It is Leibniz's concerns that are most to the point here, however. In the preface to his *New Essays*, provoked by Locke's remarks about thinking matter in the correspondence with Stillingfleet, Leibniz indignantly defends essentialism as something understood by anyone competent in philosophy:

... it must be borne in mind above all that the modifications which can occur to a single subject naturally and without miracles must arise from limitations and variations of a real genus, i.e. of a constant and absolute inherent nature. For that is how philosophers distinguish the modes of an absolute being from that being itself; just as we know that size, shape and motion are obviously limitations and variations of corporeal nature (for it is plain how a limited extension yields shapes, and that changes occurring in it are nothing but motion). Whenever we find some quality in a subject, we ought to believe that if we understood the nature of both the subject and the quality we would conceive how the quality could arise from it. So within the order of nature (miracles apart) it is not at God's arbitrary discretion to attach this or that quality haphazardly to substances. He will never give them any which are not natural to them, that is, which cannot arise from their nature as explicable modifications. So we may take it that matter will not naturally possess the attractive power referred to above, and that it will not of itself move in a curved path, because it is impossible to conceive how this could happen—that is, to explain it mechanically...

(NE 65)

Leibniz holds that God could not effect attraction without either giving bodies natures that would ground such powers or bringing about the effect himself, directly. He thinks that Locke has confusedly denied this with his talk of super-added powers. If McCann's interpretation is correct, then Leibniz is right; that is, McCann's interpretation renders Locke vulnerable to Leibniz's criticism. I contend, by contrast, that Locke in fact disagrees with little in Leibniz's indignant lecture. Locke is an essentialist: He agrees that God could not effect attraction, or make matter think, without giving bodies natures that would ground such powers (or bringing about the particular results himself, directly). Now Leibniz holds further that God would not bring about such effects directly, for that is beneath his dignity; it would make him a bad watchmaker. Locke, I think, is agnostic about this issue—while he is not at all attracted to occasionalist accounts, he has no basis for ruling them out in principle. Leibniz holds, further, that because mechanism must be correct (this on the basis of its unique intelligibility, it seems), bodies could not have natures that would ground attraction or thought, so they do not attract or think. Leibniz thinks Locke also holds that mechanism must be correct; on my view this is where both he and McCann go wrong in their Locke interpretation.

And this leads to my last point against McCann's interpretation: Whereas Wilson's interpretation portrays Locke as forward-thinking and astute in being alive to the limitations of corpuscularian mechanism, McCann takes (1) as a fixed point and regards Locke as a committed mechanist. Chapter 11 contains some internal tension on this issue, however, as McCann explicitly cites the passages wherein "Locke agnostically stresses the tentativeness of his espousal of the hypothesis" (see p. 152 above). Despite this, McCann's interpretation makes Locke so sure of corpuscularianism that he is willing to bring in God to shore up its deficiencies! I suggest below that these agnostic passages in fact motivate a different interpretation.

### Downing: Corpuscularianism as Illustration, and Essentialist Superaddition

What motivates my alternative interpretation is, on the one hand, the view that some version of essentialism is central to Locke's metaphysical picture and, on the other, a desire to take seriously Locke's expressed agnosticism about the truth of corpuscularian mechanism. Let me start with the first motivation: If Locke endorses essentialism, but he sees that corpuscularianism is irredeemably gappy, then he ought not to be a corpuscularian.<sup>10</sup> I think that in fact this is the right conclusion, and that it can be independently motivated, but we need to work up a subtle story here. The obvious difficulty for this interpretation is that Locke often sounds like Boyle when he discusses the primary qualities and real essences of corporeal things; that is, he sounds like a committed corpuscularian. I think that Locke, around the time of Draft C of the *Essay* (1685–6) and the first edition (1689), is tempted to suppose (with Leibniz) that intelligibility considerations allow us to conclude (albeit tentatively) that the corpuscularians have correctly characterized the nature of bodies. However, by the time of the correspondence with Stillingfleet and the fourth edition of the *Essay* (1700), he has repudiated this temptation. This fits with his official position in the *Essay*, which is that "which ever Hypothesis be clearest and truest" is not his "business to determine" (IV.iii.16). The evolution in Locke's thought looks like this: Locke always holds (as Boyle himself did) that corpuscularianism *might* not be the right account of the nature of bodies, although it is peculiarly natural and intelligible to us (McCann 1994, Downing 1998), and, further, that the core doctrines of the *Essay* are not supposed to depend on the truth of this physical theory. He holds, further, that the explanatory gaps in mechanism (namely, that it can't explain impulse, cohesion, or body-mind interaction) give us reason to back away from our natural commitment to it. Locke concludes from Newton's *Mathematical Principles of Natural Philosophy*, by the time of the correspondence with Stillingfleet, that corpuscularian mechanism *could not* be a correct and complete account of the nature of body:

The gravitation of matter towards matter, by ways inconceivable to me, is not only a demonstration that God can, if he pleases, put into bodies powers and ways of operation above what can be derived from our idea of body, or can be explained by what we know of matter, but also an unquestionable and every where visible instance, that he has done so.

(Locke 1823, IV.467–8)

This represents a correct moral to draw from Newton's success: that the workings of the natural world cannot be explained by attributing only size, shape, solidity, motion, and interaction at contact by impact to bodies.

But what then should we make of the prominent role that corpuscularian theory retains in the *Essay*? The answer is clear if we take our cue from Locke's discussion of real essences (*Essay* III.iii.15, III.iii.17). Locke's central notion of real essence is an abstract one: what makes a thing the thing that it is. Corpuscularianism represents one account, albeit our most intelligible account, of what the real essences of bodies might be like.<sup>11</sup> Now, the notions of primary quality and real essence are logically linked, for Locke (Downing 1998, 394). I suggest that Locke's core notion of primary quality is the correspondingly abstract, metaphysical one, that of intrinsic and irreducible quality (Downing 1998, Downing 2009). And the real role of corpuscularianism in the *Essay* is that of illustrating these metaphysical notions.<sup>12</sup>

This interpretation of Locke's view of primary qualities and real essences is thus not motivated merely as a way of explaining a denial of (1) in order to resolve the conflict among (1), (2), and (3). It is independently motivated as a way of responding to this challenge to a committed corpuscularian interpretation: Why should Locke simply assume that the intrinsic and irreducible qualities of bodies just are size, shape, solidity, and motion? What lies behind the challenge is the point that the core notions of real essence and primary quality are metaphysical, and we should take Locke at his word when he tells us that he regards corpuscularianism as one hypothesis about what fills these metaphysical roles.<sup>13</sup>

I take it that I have answered the most obvious objection to my proposed interpretation and, I hope, answered it in a way that reveals independent virtues of the interpretation—it in fact gets right Locke's subtle and evolving attitude towards corpuscularianism. But there are further questions/challenges to address.

As noted above, an obvious motivation for McCann's account is that it fits naturally with some of Locke's discussions of superaddition. On McCann's view, when Locke speaks of God's superadding powers to bodies, he simply means that God attaches powers to them by fiat. If Locke is an essentialist, however, he could not mean this, so what does he mean? One point to keep in mind is that Locke often brings in superaddition simply as a way of discussing our ignorance—when we cannot conceive how some effect obtains, we

can do no better than refer it to God's action. That is to say that the epistemic reading of superaddition is sometimes the right reading: the only thing that all Locke's references to superaddition have in common is our incomprehension. However, Locke does sometimes seem to be sketching a metaphysical proposal about what God has done or could do (as McCann, Wilson, and Stuart rightly observe). In keeping with essentialism, I think Locke's idea is this: God gave (or could have given, in the case of thought) body a nature that goes beyond our (corpuscularian) conceptions of body/matter; that is, he gave body a real essence that is not captured in our nominal essence of body. (Here, the "super" in "superaddition" is relative to our conceptions, but not relative to the actual nature of body.)<sup>14</sup> Further, he may have configured the real essences of particular bodies in a way that allows them to manifest particular qualities that they wouldn't be capable of absent these particular configurations (Locke 1823, IV.460).<sup>15</sup> I call my reading of superaddition "essentialist superaddition," as opposed to McCann's "bare laws" view (Downing 2007).

One further concern follows upon this one: One might worry that there is a puzzle about Locke's treatment of thinking matter that McCann's "bare laws" view can answer, while essentialist superaddition cannot.<sup>16</sup> On the one hand, Locke famously (and notoriously, to his contemporaries) holds that for all we know, matter might think, that is, materialism might be true. He suggests that both materialism and dualism raise inconceivability problems for us, and we aren't in a position to definitively arbitrate between them. On the other hand, in the course of proving God's existence and immateriality, Locke seems to give arguments that purport to show that matter could not think (*Essay* IV.x.14–17). A bare laws reading of superaddition offers an easy resolution to this apparent contradiction: matter on its own, exercising its natural powers, is incapable of thought, but matter after the addition of divinely instituted laws *is* capable of thought.<sup>17</sup> Problem solved. Now, Locke's *Essay* IV.x proof of God's existence is a peculiar context, and there are interpretive questions about it that go beyond what can be addressed here. Nevertheless, I will present the core of an essentialist response to this problem: What Locke takes himself to have proved in *Essay* IV.10 is that Boylean corpuscles cannot think. That is, stuff whose nature is exhausted by size, shape, solidity, motion/rest (mere matter) cannot think. (And here, again, he agrees with Leibniz.) However, what that does not rule out is that stuff which *manifests* size, shape, solidity, and motion/rest can think. That is, stuff which satisfies the nominal essence of matter and thus *is* matter might (for all we know) think (Locke 1823, IV.460–1). This, after all, is what Locke undertakes to defend in the correspondence with Stillingfleet—that something solid, material, whose nature we do not fully understand, might think.

One might wonder, lastly, about how charitable it is to place essentialism at the heart of an interpretation of Locke. Wilson (1999, 205) raises the question (in effect) of whether essentialism would remain well motivated absent a com-

mitment to a quasi-geometrical mechanist theory of matter. I think the answer is “yes,” but it is a question worth reflecting on. One point is that Locke’s real commitment is to a principle that is broader than essentialism, that is, the thesis that for everything that happens, there is a particular cause (or collection of such causes) that brings it about. If that cause is corporeal, then the effect must derive from the real essences (particular instantiations of intrinsic and irreducible qualities) and spatial arrangements of bodies, because such facts exhaust the basic facts about bodies. God could also be the cause, but if so, that would involve God’s direct action on the world. One might still worry that this is too much metaphysics to attribute to an empiricist such as Locke. Locke holds that this is the metaphysics we derive from reflection on experience. He ought to hold that it is defeasible, his epistemic modesty demands this much, but he had no reason to regard it (unlike Boylean corpuscularianism) as defeated.

## Notes

1. Though Anstey’s verdict that Locke was not a natural philosopher is reasonable (Anstey 2011, 1).
2. A note on terminology: For the purposes of this chapter, I will use “mechanism” and “corpuscularianism” interchangeably. Robert Boyle coined the term “corpuscularian” to cover both Cartesian and atomist versions of the new mechanical philosophy. “Mechanism” is a term that readily admits a variety of construals, both broad and narrow. Noting the influence of mechanism has become commonplace in Locke interpretation, thanks to the work of many other scholars, prominently including Maurice Mandelbaum (1964) and Peter Alexander (1985).
3. As will become apparent below, this needs a qualification: “absent intervention by God or other incorporeal substance.” Also, it is crucial that “bodies” is in the plural here. A single body’s powers and behavior will not follow simply from its real constitution because of what Ott (2009, 175) rightly highlights as the “multilateral reducibility” of powers. Both Boyle and Locke emphasize that the rest of the universe would have to be taken into account in order to determine all the powers of a body.
4. Wilson presents the conflict as being between (1) and (3), but that is presuming (2) in the background. That presumption is made explicit and is anchored to Locke’s text at Wilson (1999, 197). The question of the relation between Locke’s mechanism and his essentialism (in my terminology) is raised at Wilson (1999, 205).
5. In putting (2) at the center of my interpretation, I am in strong agreement with Michael Ayers. Confusingly, what I call “essentialism,” Ayers calls “pure mechanism.” See Ayers (1991, II.135, II.153, II.190) and Ayers (1981, 210). It is also closely related to what Ott (2009, 36) calls “course of nature mechanism.”
6. Compare Matthew Stuart’s (1998) “extrinsic powers” interpretation of superaddition.
7. McCann discusses this passage (see p. 150 above), but I find his reading unpersuasive. He also discusses *Essay* II.xxxi.6, IV.iii.25, and IV.vi.11. His remarks go some way towards explaining away these passages, but I think their collective weight in favor of essentialism is still substantial. Matthew Stuart (1996), who also denies that Locke endorses essentialism, attempts a reconstrual of the point of Locke’s analogy with geometry, according to which it represents, roughly, a mere commitment to deductivism about explanation.
8. Here I agree with Walter Ott, who argues that accounts of law or power in the early modern period are either top-down (derived from God) or bottom-up (derived from bodies’ natures), never freestanding (2009, chapter 1). Now, one might think that McCann’s view

- falls into the top-down category. But on Ott’s view (with which I am in sympathy), the top-down view must ultimately be occasionalist, for if God simply creates the laws and does not carry them out, then he has created them as freestanding: “It is not enough simply to will conditional claims; one must also bring it about that their consequents come to pass when their antecedents are fulfilled. To suppose otherwise is to suppose, in Cudworth’s mocking phrase, that the laws of nature could ‘execute themselves’” (Ott 2009, 105).
9. Perhaps the answer is supposed to be that God rendered the sun (and all bodies) capable of causing such effects. The reply is that he could not do that without grounding the power in the way the bodies themselves are.
  10. This is true even if he merely does not rule out the truth of essentialism, that is, if he does not reject Leibniz’s view.
  11. Although, again, Locke concludes in the end that Newton’s results show that it could not be a complete and correct account.
  12. See *Essay* IV.iii.16 where Locke writes that he has “instanced” the corpuscularian hypothesis. Of course, as indicated above, corpuscularianism is more than a mere illustration, in that it is uniquely intelligible/natural to us. One way of characterizing that naturalness is that corpuscularianism asserts that the real essence of body coincide with the nominal essence we assign to “body.” Ayers 1981, 229 notes that “for Locke ‘extended solid substance’ gives a sort of nominal essence of matter rather than its real essence.” See also Atherton (1984, 418.)
  13. An alternative would be to suppose that Locke thinks that his grain of wheat example in *Essay* II.viii.9 (or relativity arguments) suffices to definitively establish the intrinsic and irreducible qualities of bodies. I find this uncharitable. What the grain of wheat argument does do is to show that reflection on sensory experience brings us to corpuscularianism; that is, it is a uniquely natural and intelligible hypothesis. Further, I think Locke holds that it would be reasonable to suppose that the hypothesis was correct if there were no problems with it, that is, if it could follow through on its promise of grounding explanations of all the phenomena.
  14. This is a kind of epistemic reading, but different from the broad “just chalk this phenomenon up to God as a way of registering our ignorance” epistemic reading. It is to say that God has made bodies in a way that isn’t captured by our conceptions.
  15. McCann seems to prefigure part of this interpretation on p. 152, where he describes an alternative that understands superaddition as God’s contriving particular bodies so that their constitutions can work appropriately. He suggests that this “involves the attribution to Locke of an unreasonable commitment to the correctness and adequacy of the corpuscularian hypothesis.” On the contrary, it reflects Locke’s conclusion that there is something in solid substances that we do not understand (Locke 1823, IV.464). “Contriving” must be understood abstractly, however (see Downing 2007, 373).
  16. In fact, this seems to me the best argument for McCann’s interpretation, which he makes use of in McCann (1994, 74), though not in the chapter in this volume. See Stuart 1998 for a nice development of the argument.
  17. Again, I think this picture makes little sense to Locke: something must be carrying out any laws that there are: either bodies do so by their natures, or God does so directly.