

Bayle's Critique of Lockean Superaddition

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One of the deepest and most abiding of Pierre Bayle's philosophical preoccupations concerns the possibility of rational theology, or more specifically, the extent to which unaided reason is competent to secure the fundamental tenets of orthodox Christianity. Doubtless the most familiar aspect of this intellectual 'obsession' is his tenacious criticism of traditional solutions to the problem of evil. Yet these discussions represent only one facet of Bayle's engagement with the complex issues involved in the question of rational theology. Throughout the *Historical and Critical Dictionary* and in subsequent works, three issues in particular figure prominently in Bayle's discussions: the existence of a transcendent, immaterial God, the immortality of the soul, and mind-body dualism. These topics are, of course, interrelated, and Bayle rarely treats them in complete isolation. Although his official position is explicitly fideistic, there is reason to believe that Bayle was a reluctant skeptic, who was naturally sympathetic with the metaphysical dogmatism of Descartes and Malebranche. Indeed, for Bayle, the great promise of Cartesianism is its seeming ability to secure the distinctness of mind and body, which is in turn the only possible metaphysical foundation not only for personal immortality, but for the conception of God as a transcendent creator of the universe.

At the end of the seventeenth century this constellation of issues is nowhere more urgently brought to the fore than by Locke's agnosticism concerning the possibility of thinking matter. The controversy with Bishop Stillingfleet, which Locke's suggestion helped to engender, was a major intellectual event in Europe, and one that Bayle followed avidly. In the course of this debate, as in the *Essay* itself, Locke invoked the

possibility of superaddition in an attempt to secure the existence of an immaterial transcendent God while holding open the possibility that created, finite material substances might be endowed with the power of thought. In the first part of this paper I shall examine two important arguments that Bayle develops against Lockean superaddition. Taken together these arguments constitute a sophisticated critique of the conceptual coherence of Locke's position. I shall go on to argue that for Bayle himself the true threat to rational theology lies less in the claim that matter might think by way of superaddition (a view that Bayle sees as untenable), than in the growing move to abandon the Cartesian analysis of matter as *res extensa*. More specifically I shall argue that for Bayle, if we once reject the view that extension is the essence of matter, we are left with no rational basis for upholding substance dualism. To renounce our clear and distinct idea of extension as the essence of matter is tantamount in Bayle's eyes to opening the door to materialistic atheism.

I Lockean Superaddition in the Dictionary

In a familiar passage from his discussion of the extent and limits of human knowledge, Locke denied that we have demonstrative knowledge of the immateriality of the mind. He wrote:

We have the *Ideas of Matter and Thinking*, but possibly shall never be able to know, whether any mere material Being thinks, or no; it being impossible for us, by the contemplation of our own *Ideas*, without revelation, to discover, whether Omnipotency has not given to some Systems of Matter fitly disposed, a power to perceive and think, or else joined and fixed to Matter so disposed, a thinking immaterial Substance: It being, in respect of our Notions, not much more remote from our Comprehension to conceive, that GOD can, if he pleases, superadd to Matter a Faculty of Thinking, than that he should superadd to it another Substance, with a Faculty of Thinking...¹

Locke's conception of superaddition has proved notoriously difficult to interpret, in part because it involves a host of controversial issues that lie at the heart of his philosophy — the doctrine of real essences, the bare substratum account of substance, and the relative strength of his commitment to mechanism. Although I cannot address this thorny interpretive question here, it is fair to say that in the recent literature two broad lines of interpretation have emerged. The first, which we might call the

¹ John Locke, *An Essay concerning Human Understanding*, Peter Nidditch, ed. (Oxford: Oxford University Press 1975), IV.iii.6, 540-1.

metaphysical interpretation, emphasizes those passages in which Locke seems positively to deny that there is any necessary connection between the characteristic operations of the primary qualities of a body and a number of its observed qualities, such as the cohesion of its parts, the power to produce sensations in perceiving minds, and (in later editions of the *Essay*) gravitational force. On this reading Locke's willingness to countenance superadded qualities or powers represents an important qualification to his official position that the characteristics of bodies are logically deducible from the real essence of matter, and an admission that some characteristics of material substances find their causal origin in brute regularities established by divine appointment.

According to the second view, which we might call the epistemological interpretation, Locke's claim is not the dogmatic one that there is no rational connection between, say, matter and thought, but the weaker claim that we finite human beings cannot perceive any such connection owing either to cognitive limitations or the inadequacy of our concept of substantial essences. On this view Locke's talk of superaddition does not represent a weakening of his commitment to mechanistic explanation, but is simply a characterization of the way the relation of matter and a number of its observed characteristics must inevitably appear *to us* — namely, as an arbitrary connection established by divine fiat.²

In the specific case of matter and thought, Locke's notion of superaddition has another important role to play. For in his proof of God's existence (*Essay* IV.x), Locke straightforwardly denies that mere matter in motion could be causally responsible for conscious thought. Nevertheless, Locke observes, we have intuitive knowledge of our own existence as thinking beings, from which he concludes both that there must be an eternal, cogitative being, and that the presence of thought in finite, created substances must be owing to an act of divine superaddition. Thus it is by appeal to superaddition as a necessary condition for the existence of thought in finite substances that Locke attempts to hold open the possibility of thinking matter, while securing demonstrative knowledge of the existence and nature of God.

2 In the recent literature Margaret Wilson has advanced a version of the metaphysical interpretation of superaddition, while the epistemological interpretation has been defended by Michael Ayers. See Margaret Wilson, 'Superadded Properties: The Limits of Mechanism in Locke,' *American Philosophical Quarterly* 16 (1979) 143-50; Michael Ayers, 'Mechanism, Superaddition, and the Proof of God's Existence in Locke's Essay,' *Philosophical Review* 90 (1981) 210-51; Margaret Wilson, 'Discussion: Superadded Properties: A Reply to M.R. Ayers,' *The Philosophical Review* 91 (1982) 247-52.

It is precisely in the context of our knowledge of the existence and nature of God that Bayle takes up the question of Lockean superaddition. In the article 'Jupiter' Bayle argues that the tendency of ancient philosophers to conceive of the gods as physical beings was a direct consequence of their failure to recognize the immateriality of the human mind. Bayle goes on to express dismay bordering on outrage that some Christian philosophers have been prepared to claim that matter might be endowed with the power of thought. For, according to Bayle, if we once abandon our clear and distinct idea of matter and allow that a material substance could think, the existence of God as an immaterial, transcendent creator of the universe can no longer be secured. He writes:

Nothing seems to me to be based on clearer and more distinct ideas than the immateriality of that which thinks; and nevertheless, there are some philosophers in Christendom who maintain that matter is capable of thinking, and these are philosophers of great ability and acumen. Can one rely on the clarity of ideas after that? Besides, do these philosophers not see that on such a basis the ancient philosophers could have gone so far astray as to claim that all intelligent substances had a beginning and that only matter was eternal?³

If there was any doubt as to the identity of the 'philosophers of Christendom,' Bayle dispels it with his next remark:

This difficulty is not overcome by contending that matter only becomes something that thinks through a particular gift of God. This would not prevent it from being true that its nature was susceptible of thought; and that to make it actually something that thinks, it would suffice to agitate it, or to arrange it in a certain way; from which it would follow that an eternal matter without any intelligence but without movement would have been capable of producing gods and men...⁴

It is important to distinguish two implications Bayle thinks would follow from the possibility of superaddition. First, if the power of thinking could be superadded to a complex material system, then the essence of matter must be compatible with that faculty. However, Bayle carries the

3 Pierre Bayle, *Dictionnaire Historique et critique*. 5th edition. 4 vols. (Amsterdam, Leiden, La Haye, Utrecht, 1740). Where available I have used the translation in *Historical and Critical Dictionary Selections*, Richard Popkin, trans. (Indianapolis: Hackett Publishing, 1991). Hereafter P; thus, *Dictionnaire*, art. Jupiter, rem. G, 904; P 114-15. References to all other works by Bayle are from *Oeuvres diverses de M. Pierre Bayle*, 4 vols., 1727-1731. Reprint Hildesheim 1966, 5 vols., 1964-1968. Hereafter OD. Translations from articles not included in Popkin and from works other than the *Dictionnaire* are my own.

4 Bayle, *Dictionnaire*, art. Jupiter, rem. G, 904; P 115 (slightly emended).

point further, arguing that this essential compatibility between matter and the faculty of thinking would render any appeal to God superfluous, since in such a case it would suffice for the production of thought to rearrange the physical parts of a material substance so as to confer upon them the configuration that is causally responsible for thinking. This latter claim is extremely puzzling, since it is difficult to see why one who maintains that God can modify the nature of a material substance by 'annexing' thought to it, is committed to the view that thought could arise from mere mechanical interactions, even in the absence of divine activity. Indeed, this is precisely what Locke is concerned to deny, since the point of invoking a divine act of superaddition is that such intervention by the deity is necessary to overcome the natural inability of matter to give rise to thought.

I shall return to this interpretive difficulty below, but for the moment I want to turn to the second occurrence of superaddition in the *Dictionary*. In the article 'Dicaearchus,' Bayle develops a standard Cartesian argument against the reducibility of thought to modes of material substance, arguing in part that 'no one has boasted of having a clear idea of a modification of matter that is an act of sensation.'⁵ In confirmation of this he cites a passage from Locke's *Third Letter to Stillingfleet*. There Locke had conceded the inconceivability of thinking material substance. However, Locke went on to defend the possibility that matter might think by rejecting the inference from inconceivability to impossibility:

That omnipotency cannot make a substance to be solid and not solid at the same time, I think, with due reverence, we may say; but that a solid substance may not have qualities, perfections and powers, which have no natural or visibly necessary connexion with solidity and extension, is too much for us ... to be positive in.... So that all the difficulties that are raised against the thinking of matter from our ignorance or narrow conceptions, stand not at all in the way of the power of God, if he pleases to ordain it so; nor prove anything against his having actually endued some parcels of matter, so disposed as he thinks fit, with a faculty of thinking, till it can be shown that it contains a contradiction to suppose it.⁶

For Locke, Stillingfleet's appeal to the inconceivability of thinking matter is inconclusive, because it amounts to no more than an argument from ignorance, and a particularly egregious one at that, in so far as it invokes human ignorance to establish limits on divine omnipotence. According to Locke, the possibility of thinking matter can be ruled out only if it can be shown that the supposition involves a formal contradiction, which he

5 Bayle, *Dictionnaire*, art. Dicearque, rem. M, 288; P 72.

6 John Locke, *The Works of John Locke*, 9 vols. (London, 1824), 3:465-6.

maintains is beyond the limits of human reason. Bayle seizes on this argument and goes on to criticize it as follows:

Here is a formal admission of the incomprehensibility of the thing, and a recourse to the extent of God's power on effects that are beyond the limits of our understanding. It is in much the same manner that the Schoolmen suppose that there is in creatures an *obediential* power, by which God might raise them, if he wished, to any state whatsoever. A stone might become capable of the beatific vision, a drop of water might become capable of washing away all the pollution of original sin.⁷

At first glance the argument might seem more like raillery than serious philosophical criticism. Yet as is often the case with Bayle, behind the rather laconic and bantering tone lies a serious and informed critique. To understand his position, however, we must turn to his discussion of obediential powers in his lectures on metaphysics.⁸

There Bayle observes that by 'obediential potency' the Scholastic philosophers 'have in mind a certain power for receiving from God, who is acting outside the [natural] order, an ability by virtue of which the creature can produce effects beyond its nature — as if, for example, God were to give a rock the power for creating something or reasoning.'⁹ Interestingly, Bayle observes that the primary argument put forward in support of obediential powers is 'that no contradiction follows from the supposition, and one must attribute to God the power of doing anything that does not imply a contradiction.'¹⁰ Now, whatever differences there may be between the Scholastic doctrine of obediential powers and Lockean superaddition, Bayle is drawing attention to two fundamental similarities. First, both rely on a distinction between the natural powers of a creature, that is, those powers that follow from the nature or essence of the thing, and those that God can bestow upon it by a sort of

7 Bayle, *Dictionnaire*, art. Dicearque, rem. M, 288; P 73.

8 It is perhaps worth observing that Bayle conceived of the *Dictionary* as a work of high grade popularization; one of his express aims in composing the work was to make available abstruse metaphysical and theological disputes to a well-educated, though philosophically unsophisticated audience. For this reason it is often helpful to attend to the more rigorous formulations of arguments to be found in his lecture notes and early technical writings as a way of illuminating the often simplified presentations of those same arguments in the *Dictionary*.

9 '*Intelligunt per potentiam obedientialem, vim quandam recipiendi à Deo extra ordinem operante talem influxum, per quem deinde producantur effectus supernaturales à creaturis, ut si verbi gratiâ Deus instrueret lapidem virtute creandi aliquid, et ratiocinandi*' (Bayle, OD IV, 470).

10 '*...quod non inde sequantur duo contradictoria, Deo verò tribuenda sit potentia faciendi quaecumque non implicant contradictionem...*' (Bayle, OD IV, 470).

extraordinary concurrence. As we have seen this distinction is crucial for Locke, since it provides a basis for demonstrative knowledge of God's existence based on His indispensable role in introducing thought into any system of finite substances. Second, both Locke and the Scholastics seek to establish the possibility of such divinely-induced extraordinary powers by claiming that the supposition does not involve a formal contradiction and that God is capable of bringing about any non-contradictory state of affairs.

In response to the first point, Bayle argues that the distinction upon which the doctrines of obediential powers and superaddition jointly rest, namely the distinction between the natural powers of a created object and those that might be divinely induced, is badly drawn. By seeking to undermine the conceptual foundation of superadded qualities, this first criticism constitutes a general argument against the doctrine of divine superaddition. For this reason, let us call it the Conceptual Objection to superaddition. With regard to the second point Bayle argues that there is in fact a contradiction in the claim that a material substance might think. Thus, the second criticism constitutes a rejection of superaddition in the particular case of matter and thought. In the balance of this section, I shall consider Bayle's general argument against superaddition, deferring discussion of his specific criticism of mind-body superaddition to the following section.

As I have indicated the Conceptual Objection to superaddition maintains that the distinction between the natural powers of created objects and powers that might result from divine superaddition is ill-founded. As Bayle puts the point:

when a thing is said to be performed naturally, this does not mean that it occurs ... as a result of a certain virtue which is in things considered absolutely, prior to all other faculties¹¹

Rather it simply means that

this thing occurs according to certain laws, which God according to his sovereign freedom has chosen from among many others no less fitting nor less compatible with the aptitudes of creatures: whence it follows that if God ever deviates from these laws and follows others, he acts no less in accordance with the aptitude of the creature, than in ordinary cases.¹²

11 '*...quando res aliqua dicitur fieri naturaliter, hoc non significat fieri ... juxta virtutem quandam, quae sit in rebus absolutè consideratis, prae omni alia facultate*' (Bayle, OD IV, 472).

12 '*...illam rem fieri, secundùm certas leges, quas Deus summâ suâ libertate, inter multas alias non minùs commodas, nec minùs aptitudini creaturarum congruas, elegit: unde sequitur,*

For Bayle the attributes and powers of material substance are of two kinds. First, there are those properties necessarily implied by the essence of matter in general. Because they are logically entailed by the nature of body qua body, these properties are universally present to matter in all its various forms. Second there are those characteristics that arise from the specific nature of a material substance, that is those qualities and powers associated with matter so configured as to belong to a certain species (say, a stone or a tree). Because such characteristics are accidental to matter qua matter their presence is wholly owing to God's pleasure. Specifically, God institutes a series of arbitrary connections between events and continuously observes them, thereby establishing the nomological regularities that give rise to the specific natures of material substances.

However, although the laws of nature that underlie the accidental features of bodies are freely instituted by God, there is an important restriction on His choice. For these divinely instituted regularities must respect the necessarily implied properties of matter qua matter. Even acting miraculously, God cannot violate the essence of matter, since to do so implies a formal contradiction:

All Christian philosophers agree that there are no miracles with respect to the eternal laws, but only with respect to the arbitrary laws that it has pleased God to establish in Nature.... [I]f a law follows from the necessity of things, [and] if as a consequence it is immutable, do not expect an exception in any circumstance; that is impossible. Now among the laws, or eternal and immutable truths, none is more certain than that nothing occurs contrary to the essence of things.¹³

For Bayle any power that could be superadded to material substance would have to be compatible with the essence of matter — not because the possession and exercise of such powers would otherwise require a standing miracle (this was Leibniz's complaint against superaddition), but because even a miracle cannot violate this essence. Therefore, whatever additional powers a thing may have by consequence of its receiving

quod si Deus spretis illis legibus, alias sequatur nonnumquam, aequè agit secundum aptitudinem creaturae, ac in aliis casibus consuetis' (Bayle, OD IV, 472).

13 'Tous les Philosophes Chrétiens conviennent, qu'il n'y a point de miracles par rapport aux loix éternelles, mais seulement par rapport aux loix arbitraires, qu'il a plu à Dieu d'établir dans la Nature....[S]i une loi émane de la nécessité des choses, [et] si en conséquence de cela elle est immuable, n'y attendez point d'exception en aucun cas, c'est une affaire impossible. Or entre les loix, ou les vérités éternelles et immuables, il n'y en a point de plus certaine que celle-ci, que rien n'arrive contre l'essence des choses' (Bayle, OD III, 545a).

various modifications, they are all based upon and constrained by the fundamental capacities of matter qua matter. Thus for Bayle there is no deep ontological distinction to be drawn between those powers that follow naturally from the specific nature of a thing and those that can arise only through a divine act of superaddition. A quality or power is either compatible with the essence of matter or it is not. If it is not, then not even God can endow a material substance with the power. If it is compatible with the essence of body qua body, but is nevertheless accidental to it, then whether or not certain suitably configured objects have this power is simply a question of what are the contingent laws of nature that govern their behavior.

It is in this way that Bayle attempts to make good on his claim that the doctrine of superaddition rests on a spurious distinction between natural and divinely induced powers. Before moving on to his criticism of superaddition in the specific case of thought and matter, I want to pause for a moment to return to the puzzle I raised earlier concerning the allusion to superaddition in the article 'Jupiter.' Recall that in that passage Bayle alleged that if one holds with Locke that God can superadd the power of thinking to a material substance, it follows not only that thought must be compatible with the essence of matter, but that in order to induce thought in a particular material substance, it would suffice to mechanically manipulate its parts so as to confer upon it the physical structure that is causally responsible for thinking. With Bayle's Conceptual Objection to superaddition in hand, we are now in a position to see why this should be so. For as we have just seen, Bayle's argument turns on the claim that even a miracle cannot violate the essence of matter. It follows immediately that every quality of a material substance — superadded or otherwise — must be compatible with the essence of matter.

But what of Bayle's more puzzling assertion that if thought were so compatible with the essence of matter that it could be superadded to body, then God's role would be superfluous, and thought could be made to arise merely from mechanical reconfiguration of its parts? Here we move from the general question of the ontological distinction between the properties of matter qua matter and the specific essence of material substances, to the particular question what in fact is the essence of body qua body. And Bayle, following Descartes, consistently maintains that it is extension: 'all the modes of bodies are based on the essential attributes of bodies, which are the three dimensions.'¹⁴ It follows that for Bayle the

14 Bayle, *Dictionnaire*, art. Dicearque, rem. C, 286; P 67. Bayle's early Latin work, the *Dissertatio*, is a sustained defense of the Cartesian account of matter as *res extensa* against the objections of the pseudonymous Louis de La Ville (Bayle, OD IV, 109-32).

essential properties of body qua body are divisibility, impenetrability and occupation of place. However, not only does the essence of extension necessitate the presence of certain properties in every body, it also places restrictions on how matter can be causally affected. Specifically, it follows from the equation of matter and extension that body can be acted upon only by imparting different degrees of motion to its parts. As Bayle puts the point, 'no one distinctly conceives that bodies are capable of effects other than those of impulsion and what follows from impulsion.'¹⁵ Indeed, Bayle takes this consideration so seriously that in the article 'Simonides,' he argues that the immateriality of God in conjunction with the nature of matter render inconceivable how God could be the efficient cause of motion were matter uncreated.¹⁶ This, then, is the essence of matter that limits God's choice of the physical laws of nature that will determine the accidental features of particular substances. Any such law can include among its antecedent conditions only those modalities of which extension is capable, namely various shapes and motions. So if God could superadd thought to body, he would have to do so by establishing arbitrary psycho-physical laws of nature which dictate that on the occurrence of certain physical configurations of its material parts, particular acts of thought should occur. It follows for Bayle, that if such laws were to obtain, thought could arise in material substance solely from the mechanical manipulation of its parts. Thus God's indispensable role in endowing matter with the power of thinking is effectively undermined.¹⁷ This, I suggest, explains Bayle's worry in the Jupiter

15 '*...nemo distinctè concipit, corpora aliorum effectuum esse capacia, quam impulsionis, et eorum quae impulsionem sequuntur...*' (Bayle, OD IV, 471).

16 Bayle, *Dictionnaire*, art. Simonides, rem. F, 210; P 277. Similarly, Bayle observes that in order for a god or demiurge to forge a world out of an uncreated, chaotic matter, it 'would be necessary for him to produce motion in it; and for that would it not be necessary for him to touch it and push it? [*'Ne faudra-t-il pas qu'il y produise le mouvement; et pour cela ne faudra-t-il pas qu'il la touche, et qu'il la pousse?*]' (Bayle, *Dictionnaire*, art. Epicure, rem. S, 373)]

17 It might be objected that even if we accept Bayle's argument, there remains an indispensable role for God in that only He can establish the laws of nature. But, according to Bayle, a materialistic atheist could simply deny that the arbitrary laws of nature find their origin in divine institution, maintaining instead that they are brute facts that admit of no further explanation. Thus, Bayle argues that for the ancient atomists, who hold that matter is eternal and uncreated, no rational explanation of the physical laws of nature that govern the interactions of atoms is possible; their obtaining can only be ascribed to the inexplicable 'nature of things':

Do not ask why in certain situations the effect of the reaction [produced by the collision of atoms] is this rather than that, because the properties of a thing admit

passage that any philosopher who concedes that a material substance might be endowed with the power of thought will be left unable to provide a rational proof of God's immateriality — even if it is maintained that this can only come about by an act of superaddition.

Margaret Wilson has argued that Locke's theory of superaddition rests on a distinction between the essence of body qua body and the real essences of specific material substances, such as rocks and trees. Locke's assertion that matter may think amounts to the claim that although thought is not a natural consequence of the former, it might 'follow from' the latter. On this reading 'God superadds the properties of a peach tree to matter (to which motion has already been added). Perhaps in so doing he *creates* a real essence (which could not come into being by matter-in-motion by itself).'¹⁸ This I believe is precisely the view against which Bayle is concerned to argue. Because, for Bayle, all properties of material substances that are not logically implied by the essence of matter are solely determined by arbitrary laws of nature, it follows that at most God's role in 'annexing' thought to matter would be strictly limited to establishing the relevant nomological regularities. However, because a materialistic atheist could consistently attribute these laws of nature to brute regularities that admit of no rational explanation, there is no indispensable role for God to play. Therefore, if we once grant the compatibility of thought and material substance, the appeal to divine superaddition is theoretically superfluous. Moreover, because any psycho-physical law must associate thought with possible states of material substance, if such nomological regularities were to obtain, it would follow that acts of thinking could be produced solely by rearranging the physical configuration of the relevant material substance.

of explanation only when it was freely created by a cause that had its reasons and its motives for producing it [*'Ne demandez pas pourquoi en certaines rencontres l'effet de la réaction est plutôt ceci que cela; car on ne peut donner raison des propriétés d'une chose, que lors qu'elle a été faite librement par une cause qui a eu ses raisons, et ses motifs en la produisant'* (Bayle, *Dictionnaire*, art. Democrite, rem. R, 275).].

Elsewhere Bayle makes a similar point: 'when an uncreated thing is such and such, it cannot be asked why it is that way. That is its nature. One must necessarily stop there' (Bayle, *Dictionnaire*, art. Pauliciens, rem. H, 631; P 187). Thus Bayle seems prepared to countenance the possibility of brute facts that admit of no further rational explanation.

18 Margaret Wilson, 'Discussion,' 251

II The Achilles Argument

Having seen how Bayle's Conceptual Objection seeks to undermine the distinction between natural and divinely induced powers that provides the foundation for superaddition, let us turn now to the second point of similarity between this view and the doctrine of obediential powers. Recall that, according to Bayle, both Locke and the Scholastics defend the possibility of their views with the claim that God can bring about any state of affairs that does not involve a formal contradiction. In reply, Bayle argues that the supposition that matter might be capable of thinking is in fact contradictory. He observes that 'to refute this obediential power of matter with respect to knowledge' one could make use of an argument that 'has always seemed to me very proper to show the impossibility of joining together the three dimensions and thought in the same subject.'¹⁹ The argument that Bayle invokes is a version of what Kant, in his discussion of the paralogisms of pure reason, called 'the Achilles of all dialectical inferences.'²⁰ The crucial premise of the Achilles is that the subject of thought must be a single unified entity, since if it were not, perception and thought would be radically incoherent (notice that Bayle's claim is that the Achilles argument refutes the 'obediential power of matter *with respect to knowledge*'). It is then claimed that material substances, being composites of further material substances, lack the unity which is a necessary precondition of thought. In this way the argument seeks to establish an essential incompatibility between coherent mental representation and extension — an incompatibility that precludes their coexistence in a single subject.

Bayle gives two statements of the argument.²¹ In the first, he imagines a physical globe whose surface is painted with all of the various geographical features of the earth. Let us now assume that this globe 'is capable of knowing the shapes with which it has been decorated.' It follows that the globe

19 Bayle, *Dictionnaire*, art. Dicearque, rem. M, 288; P 73.

20 Immanuel Kant, *Critique of Pure Reason*, Norman Kemp Smith, trans. (New York: St. Martin's Press 1965), A351

21 In the article 'Dicearque' Bayle actually cites against Locke a version of the argument by the Abbé de Daingean, which Bayle had summarized in the August, 1684 edition of the *Nouvelles de la République des Lettres* (OD IV, 110-11). However, I believe that Bayle's own formulation of the argument is philosophically superior, and it is for this reason that I have chosen to treat it here.

would contain nothing that could say, 'I know all Europe, all France, the whole city of Amsterdam, the whole Vistula'; each part of the globe could only know the portion of the shape that fell to it; and since that part would be so small as not to represent any place entirely ... no act of knowledge would result from this capacity; and at least it would be the case that these acts of knowing would be very different from those that we experience; for they make us know an entire object, an entire tree, an entire horse and so on, which is complete proof that the subject that is affected by the entire image of these objects is not at all divisible into several parts....²²

According to Bayle, a material substance endowed with the faculty of thinking could not form a complete perception or even a coherent thought, because every 'part' of the perception would belong to a distinct part of the material substance. But in order for there to be a coherent perception of a complex object such as a horse, the entire perceptual image must exist within a single individual center of consciousness. Similarly, in the second version of the argument, Bayle maintains that a thinking material substance would be incapable of feeling the pain that results from being struck with a stick, 'since the pain would divide itself into as many particles as there are in the organs that are struck.' However, because matter is infinitely divisible, each organ is comprised of an infinite number of particles. As a result, 'the portion of pain that would belong to each one would be so small that it would not be felt.'²³

The crucial premise in both arguments is that if a complex material object could think, then for any given thought or perception, every physical part of the object would constitute a distinct center of consciousness that would perceive only some limited portion of the entire perception. As I have argued elsewhere, Bayle's defense of this premise turns on a claim about the nature of matter and its implications for the inherence of qualities in material substances.²⁴ As we have seen, Bayle endorses the Cartesian equation of matter with extension in the three dimensions. This account of matter is crucial, since according to Bayle the Achilles is sound only if extension is the *essence* of material substance. If, on the contrary, extension is held to be a mere accident inhering in an unextended substratum, the argument loses its force:

22 Bayle, *Dictionnaire*, art. Leucippe, rem. E, 101; P 130

23 Ibid.

24 See my 'Bayle's Defense of Mind-Body Dualism,' *Aufklärung* 16 (2004) 191-211. For an alternative account of Bayle's argument, see Jean-Pierre Schachter, 'Pierre Bayle, Matter, and the Unity of Consciousness,' *Canadian Journal of Philosophy* 32 (2002) 241-65.

If you once suppose that corporeal and spiritual substance are perfectly similar in lacking extension, there is no conceivable reason why spiritual substance rather than material substance is essentially intelligent.²⁵

Moreover, because extension is essentially composed of really distinct parts, it follows for Bayle that matter or extended substance is by nature a complex of further material substances. Now, it is this complex that must serve as the subject of inherence for all of the substance's qualities. Therefore, if a real quality is to inhere in such a subject, it must inhere in each of its parts. In an earlier formulation of the argument, Bayle illustrated this claim by appeal to motion:

It is evident that if the thing that wills were extended, the act of willing would be coextensive with it, or found in each of its parts, just as motion is coextensive with the moving thing, or is found in each part of the movable object. Therefore as there is nothing in the thrown rock...that could truly say, 'I have all the motion that has been imparted to the rock,' similarly there would be nothing in an extended soul, were it to will something, that could truly say, 'I have the entire act of willing.'²⁶

Thus for Bayle, in any material substance, the subject of inherence is by its very nature a plurality or complex of subjects. Therefore, if the complex taken as a whole is to have a certain property, that property must inhere in each part out of which the whole is composed. This principle, which we might call the *Principle of Essential Inherence* (PEI) can be formulated more precisely as follows:

PEI: For any real property p that is a determinate of some determinable G , if p inheres in an essentially complex subject S , then there must inhere in every part of S some real property q that is a determinate of the determinable G .

It follows immediately from this principle that if some particular thought is to inhere in a complex material substance, then every substantial part of that subject must itself have some property of thought.

25 '*...si semel supponas substantiam corpoream et spiritualem perfectè similes in carentia extensionis, nulla potest concipi ratio quapropter substantia spiritualis sit potiùs essentialiter intelligens quàm substantia materialis*' (OD IV, 111).

26 '*...evidens est si res volens sit extensa, actum volendi coextendi ipsi sive reperiri in qualibet illius parte, quoadmodum motus coextenditur mobili, sive reperitur in qualibet parte mobilis; ergo sicut in lapide projecto nihil est quod...verè dicere posset, Ego habeo totum motum lapidi impressum: ita nihil esset in anima extensa, si vellet aliquid, quod verè dicere posset, Ego habeo integrum actum volendi*' (Bayle, OD IV, 142).

Given this, we can interpret Bayle's discussion of the perception of a tree as an attempt to conceive what it would mean for a thought to inhere in the individual components of a composite substance. As Bayle sees it, either the entire thought inheres in every substantial part or some portion of the complete thought inheres in each part. But the former is absurd, since it implies that in every human being perceiving a tree, there would be not one, but an infinite number of perceivers. Therefore, it must be the case that some 'part' of the complete thought inheres in each part of the material substance. Now, given that for Bayle thoughts are ontologically simple, this can only be conceived in terms of, as it were, dividing up the content of the thought. Consider the case of a visual perception. The only way we can conceive this perception being divided is in terms of its complex representational content. Therefore, each part of the material substance would perceive a different portion of the visual image, with the result that no single perceiver would perceive the entire image.

Thus the Achilles represents a direct response to Locke's challenge to demonstrate that there is a 'formal contradiction' in the claim that matter might be made to think.²⁷ At its heart lies the Cartesian claim that the

27 Gianluca Mori argues that Bayle's various criticisms of Lockean mind-body superaddition in the *Dictionary* are suspect in that they serve to conceal a discreet but recurring exploration of the possibility of a materialist theory of mind. See *Bayle philosophe* (Paris: Honoré Champion 1999), 36-8; 70-4. Mori's principal evidence with regard to Bayle's refutation of Locke is an important passage from the *Objections to Poiret* (1679), in which Bayle openly considers the very possibility of thinking matter that his later discussions are intended to rule out. In response to Poiret's arguments on behalf of Cartesian mind-body dualism Bayle asks 'whether God can bring it about by his omnipotent and infinite power that a body might become conscious of its own existence or of any other thing? [*Quaero, num Deus virtute sua infinita et omnipotenti efficere valeat ut corpus existentiae suae, alteriusve cuiusdam rei, fiat sibi conscium?*]' (OD IV, 150b) In favor of this possibility Bayle goes on to offer the same consideration that he ascribes to Locke and the Scholastics: 'since everything that does not involve a contradiction is possible, I ask what contradiction there would be in bodies being rendered actually thinking' (ibid.). To be sure this passage clearly indicates that early in his philosophical career Bayle was searching for an argument that would decisively rule out the possibility of thinking matter. However, it is important to note that unlike a number of other arguments formulated in the *Objections*, Bayle never raises this possibility in subsequent works. If my analysis of the Achilles is correct, this is because Bayle became convinced that that argument establishes precisely the contradiction in the thinking matter hypothesis that Bayle himself had previously sought from Poiret. Further, although Bayle seems to have been aware of the Achilles from early on, the particularly forceful presentation of the argument by the Abbé de Dangeau in his *Quatre dialogues* (1684) seems to have been instrumental in impressing upon Bayle the full potential of the argument. Indeed, in his review of Dangeau's book in the August 1684 edition of the *Nouvelles de la République des Lettres*, Bayle goes so far as to claim that Dangeau's version of

essence of matter is extension. Without this crucial premise the argument is impotent.²⁸ Of course, understood as a critique of Lockean superaddition, it could plausibly be argued that the objection rests on a fundamental misunderstanding, in so far as it mistakenly attributes to Locke the view that the essence of body qua body is impenetrable extension. That Bayle did in fact read Locke in this way at the time of writing the *Dictionary* is suggested not only by the presuppositions of Bayle's two main objections, but in his very statement of Locke's position, which Bayle characterizes as the denial that the mind is 'a substance distinct from extension.'²⁹ The contrast of mind with 'extension,' rather than matter or material substance suggests that Bayle is here treating matter and extension as equivalent.

III Thinking Matter Revisited

Although Coste's French translation of the *Essay* appeared in 1700, it is difficult to determine the extent to which Bayle was directly acquainted with the work.³⁰ However, it is tempting to think that he had occasion to

the argument 'is a demonstration as secure as that of Geometry' (OD I, 110b). For a fuller discussion of Bayle's rejection of materialism, see my 'Bayle's Defense of Mind-Body Dualism.'

28 That the distinctness of mind and body can, in Bayle's view, be established on the analysis of matter as *res extensa* can also be seen in Bayle's diagnosis of the Aristotelians' inability to secure the immateriality of the soul: 'Aristotle's hypotheses on the mortality and materiality of animal souls, and the real distinction between body and extension, enervate all the natural arguments for the spirituality of our soul [...].les Hypotheses d'Aristote sur la mortalité, et la matérialité de l'ame des bêtes, et sur la distinction réelle entre le corps et l'étendue, énervent toutes les raisons naturelles de la spiritualité de notre ame (Bayle, *Dictionnaire*, art. Charron, rem. O, 147; emphasis added).' In a footnote to this passage Bayle specifies that the 'real distinction between body and extension' defended by the Scholastics amounts to the claim that 'quantity is distinct from matter, as accident is distinct from substance.'

29 Bayle, *Dictionnaire*, art. Jupiter, rem. G, 904; P 114

30 Bayle had no working knowledge of English, a fact he lamented on several occasions. What direct acquaintance he had with Locke's philosophical works was acquired from French and Latin translations. An extract of the *Essay* had appeared in French translation as early as 1688 in Jean LeClerc's *Bibliothèque Universelle*, although Bayle shows no signs of familiarity with the work at this early date. However, Bayle followed closely the debate between Locke and Stillingfleet through accounts that appeared in the *Histoire des ouvrages des savans* in 1697 and 1698, as well as two articles in the *Nouvelles de la République des Lettres* in 1699. Later, Pierre Coste, Locke's translator and a close friend of Bayle, sent the latter a copy of

revisit the *Essay* following the publication of the second edition of the *Dictionary* in 1702, since when he returns to these issues in the *Réponses aux questions d'un provincial*, Bayle's interpretation of Locke has undergone a major revision. Bayle now treats Locke as a skeptic concerning the essence of substance in general, and in particular concerning the real essence of matter. However it is not an unalloyed skepticism that Bayle attributes to Locke. For as Bayle now understands him, Locke positively denies that impenetrable extension constitutes the essence of body qua body, treating it instead as a mere *propria* or property of material substance — that is, as a quality that necessarily follows from the essence of matter, but which is not itself part of its essence.³¹ Bayle writes:

[Locke] did not believe that we know the nature of substances. He admitted that impenetrable extension, divisibility, [and] mobility were properties of matter, or of corporeal substance, but not the essence, or constitutive attribute of the substance of matter. Therefore, he believed that those properties subsist in a subject that is unknown to us.³²

his French translation of the *Essay*, which first appeared in 1700. We also know that Bayle read Book I of the *Essay* as part of his preparations for writing the *Continuation des Pensées Diverses*. For a complete account of Bayle's familiarity with Locke's writings, and of the personal relations between the two, see P.J.S. Whitmore, 'Bayle's Criticism of Locke,' in *Pierre Bayle, le philosophe de Rotterdam*, Paul Dibon, ed. (Amsterdam: Elsevier Publishing 1959) 81-96.

31 Although Bayle cites no specific texts in support of his reading, one likely source is Locke's discussion of our idea of matter qua matter in Book II, Chapter XXIII 'Of Our Ideas of Substances.' There Locke ascribes to matter the same qualities mentioned by Bayle, observing that, 'Our *Idea* of Body, as I think, is an extended solid Substance, capable of communicating Motion by impulse...' (*Essay* II.xxiii, 22). Locke goes on to suggest that none of these constitutes the real essence of matter, in so far as none of them is explanatorily basic. He summarizes his position by emphasizing our complete ignorance of the real essence of matter (and mind) and by characterizing extension and mobility — precisely as Bayle suggests — as mere properties of matter: 'The substance of Spirit is unknown to us; and so is the substance of Body, equally unknown to us: Two primary Qualities, or Properties of Body, *viz.* solid coherent parts, and impulse, we have distinct clear *Ideas* of ...' (*Essay* II.xxiii.30) Some indirect evidence that Bayle may have been aware of this passage is that in a letter of 1703, Bayle indicates that Coste had cited two passages from Locke's *Essay* and solicited Bayle's opinion of them. Although Coste's letter is lost, we know from Bayle's response that the second passage concerned Locke's account of substance. See *Bayle to Coste*, July 20, 1703 (OD IV, 831b).

32 '[Locke] ne croïoit pas que nous conussions la nature des substances. Il avoïoit que l'étendue impénétrable, la divisibilité, la mobilité étoient des propriétés de la matiere, ou de la substance corporelle, mais non pas l'essence ou l'attribut constitutif de la substance de la matiere. Il croïoit donc que ces propriétés-là subsistoient dans un sujet que nous ne connoissons pas' (Bayle, OD III, 941b).

As we shall see, Bayle's revised understanding of Locke's position occasions a dramatic shift in Bayle's argumentative strategy vis-à-vis Lockean thinking matter.

However, before looking more closely at Bayle's particular criticisms, it will be helpful to summarize briefly the main argument of the chapter in which it occurs. As part of an extended discussion of the argument for the existence of God based on universal consent, Bayle insists upon the difficulty of knowing the nature of God by unaided reason. He begins by observing that reason provides us with an excellent argument for the immateriality of God. He then produces a schematic version of the Achilles argument that we have analyzed above:

God must be an intelligent nature; everything that is composed of parts is incapable of intelligence; everything material is composed of parts; therefore God must be immaterial.³³

Although Bayle here characterizes the argument as 'very strong' he goes on to observe that to be perfectly satisfied on this score, we must be able to answer all of the difficulties to which the doctrine of the immateriality of God gives rise. He then raises a number of general problems with this conclusion, one of which is of particular interest for our purposes. Bayle observes that if the argument is sound, it establishes the immateriality not only of God, but of all intelligent beings. However, this broader conclusion is open to several objections stemming from doubts concerning the nature of animal minds³⁴ and the question of the spatial location of immaterial substances.³⁵

It is in this context that Bayle once again takes up the question of thinking matter in Locke. For Bayle, it follows from Locke's denial that extension, impenetrability and mobility constitute the essence of matter qua matter that they must be mere accidents, since what does not belong to the essence of a thing is accidental to it. Underlying this interpretation

33 '*Dieu doit être une nature intelligente: tout ce qui est composé de parties est incapable d'intelligence: tout ce qui est matériel est composé de parties: il faut donc que Dieu soit immatériel*' (Bayle, OD III, 940a).

34 Bayle discusses these difficulties at much greater length in *Dictionnaire*, art. Rorarius.

35 Gianni Paganini argues that this latter discussion influenced Hume's discussion of mind-body dualism in the *Treatise*. See Gianni Paganini, 'Hume et Bayle: conjonction locale et immatériabilité de l'âme,' in *De l'humanisme aux Lumières. Bayle et le protestantisme. Mélanges en l'honneur d'Élisabeth Labrousse*, Magdelaine, Pitassi, and McKenna, eds. (Paris: The Voltaire Foundation 1996) 701-13.

is Bayle's rejection of the Scholastic distinction between accidents and so-called *propria quarto modo*, that is attributes that are necessarily conjoined with a substance without thereby constituting its essence. Such was thought to be risibility in the case of human beings. On Bayle's view, if an attribute is inseparable from a substance, then it is essential to it, since everything can exist 'provided only that it has its essence.' Therefore the very notion of a non-essential, but necessary attribute is self-contradictory:

We, who do not recognize any difference between an attribute joined necessarily and an essential attribute, hold that the *proprium quarto modo* is an essential attribute that is really identified with the difference.³⁶

Thus, if Locke maintains that extension is not the essence of matter, then it is accidental to matter, and therefore separable from it.

It is for this reason, Bayle argues, that Locke was led to acknowledge the possibility that matter might think. For having made extension a mere accident of body qua body, and therefore separable from it, 'Locke could not deny that he did not know what matter stripped of extension would be.'³⁷ As a result, the essence of matter is entirely unknown. However, in order to establish the incompatibility of two things, we must have clear and distinct ideas of both the one and the other. But lacking an idea of the essence of matter, we cannot rule out the possibility of a material substance that thinks.

Notice the remarkable shift that Bayle's revised understanding of Locke has engendered. Far from being refuted by the Achilles argument, Locke's view is now portrayed as calling the conclusion of the argument into serious doubt! Gone is all reference to violations of our clear and distinct ideas and to obediencial powers. Indeed, Locke's signature doctrine of superaddition which was the central focus of the *Dictionary* discussion is not so much as mentioned. How are we to explain these shifts? If my reading of the Achilles is correct, the first of these textual puzzles can be readily explained. For as I have argued, the Achilles relies on the crucial premise that extension is the essence of matter, that is that

36 'Nos qui nullum discrimen agnoscimus inter attributum necessario conjunctum, et attributum essenziale, dicimus proprium quarto modo esse attributum essenziale et identificatum realiter cum differentia' (Bayle, OD IV, 224). Interestingly, Bayle illustrates this claim with the example of divisibility with respect to extension, arguing that divisibility, which is a *proprium quarto modo* of matter does not differ from extension, and is therefore really identical with the essence of material substance — that is, with extension itself.

37 Bayle, OD III, 941-2

material substance is identical with extension in the three dimensions. However, Bayle now believes that Locke rejects this conception, and thus the Achilles is rendered impotent. Indeed, the very possibility of proving its conclusion is called into question, since if we do not know the nature of material substance, we cannot know whether thought is compatible with it.

Thomas Lennon has expressed puzzlement at Bayle's argumentative strategy in that his 'criticism' seems to take the form of a *reductio ad absurdum* whose conclusion is that matter might be capable of thought.³⁸ And indeed, this does seem odd, since Bayle is well aware that this is precisely the view for which Locke is arguing. However, the tension can be resolved once we recognize that Bayle's discussion proceeds in two stages. In the first, which we have just analyzed, Bayle shows how beginning with the claim that extension is not the essence of matter Locke was forced to maintain that he did not know the essence of matter, which in turn led him to hold open the possibility that matter might think. In this, Bayle was not so much criticizing Locke as explaining the logic of his position.

But Bayle does not stop there. Beginning again with the Lockean premise that extension is not the essence of matter, Bayle proceeds to argue that 'we are led directly' to the claim that there is only one kind of substance. For if extension is a mere accident, then it is separable from matter. Therefore, matter qua matter — that is, matter considered independently of its accidental qualities — must be unextended, whatever its principal attribute may turn out to be.³⁹ But this means that the only conceivable incompatibility between matter and thought — that estab-

38 Thomas Lennon, 'Bayle, Locke and the Metaphysics of Toleration' in *Oxford Studies in the History of Philosophy*, vol. 2: *Studies in Seventeenth-Century European Philosophy*, M.A. Stewart, ed. (Oxford: Clarendon Press 1997), 182-3.

39 Here I must disagree with Thomas Lennon who reads Bayle as ascribing to Locke a bare substratum view of substance. In general, Bayle's metaphysical arguments always presuppose the Cartesian ontology of substance according to which a substance is identical with its primary attribute. Indeed, Bayle seems to treat this view as a philosophical commonplace. Thus, Bayle observes that Spinoza 'admits, along with all other philosophers, that the attribute of a substance does not differ actually from that substance' (Bayle, *Dictionnaire*, art. Spinoza, rem. N, 259; P 302-3). However, on Bayle's view the question of whether Locke holds a bare substratum view of substance in general, or instead takes it to be a natured particular is largely irrelevant. For once one denies that extension is the essence of matter, it must be an accident. Thus whatever the nature of material substance, be it bare particular or natured particular, it is essentially unextended. Hence there is no longer any conceptual impossibility in claiming that matter is capable of thinking.

lished by the Achilles — has been removed. Nor could we establish a difference in kind between material and mental substance by attributing to the former a natural aptitude for extension, which is absent in the latter. For again, if matter considered apart from its accidents is unextended, we have no rational grounds for holding that thought is any more or less compatible with its essence than is extension. More generally, Bayle rejects the Scholastic notion of natural aptitudes as unintelligible:

the [Scholastic concept of an] inclination for extension [*exigentia extensionis*] associated with substance in general does not yield any distinct idea, but only a vague, confused and manifestly false concept, unless ... you reduce this inclination to a simple passive power. But because that signifies nothing more distinctly than a lack of incompatibility, it befits all possible beings, and so is utterly incapable of constituting the specific difference of matter.⁴⁰

The upshot is that the refusal to equate material substance with impenetrable extension removes our sole rational basis for asserting an incompatibility between thought and extension. Thus, Bayle argues, we are led to the view that there is only one type of substance, whose essence is unknown, but which is equally compatible with extension and thought. Underlying this conclusion is Bayle's conviction that a meaningful substance dualism must be based on the substantial, rather than the specific, essences of substance. That is, it must be founded on a difference in kind between the principal attribute of material substance and of mental substance — a difference that necessitates that what is extended cannot be thinking, and vice versa. To be sure, Bayle is not arguing that the rejection of the Cartesian conception of matter as *res extensa* entails the falsity of mind-body dualism, but rather that it leaves us not only without any evidence in favor of the incompatibility of thought and matter, but without the least conception of how such an incompatibility might be defended.⁴¹

40 '*exigentia extensionis affixa substantiae in communi non praebet ullam ideam distinctam, sed conceptum vagum, confusum et manifestè falsum, nisi redigas...exigentiam ad meram potentiam passivam, quae cum nihil distinctiùs significet quàm non repugnantia omni enti possibili conveniens, inepta est prorsus ad constituendam differentiam specificam materiae*' (Bayle, OD IV, 116).

41 Bayle had offered a similar line of reasoning in the *Dictionary*: '...If it [an alleged third kind of substance] is not extended, I would like to know on what basis it is distinguished from mind; for it is like mind in being an unextended substance, and we cannot comprehend how this classification can be divided into two kinds, since the specific attribute that may be given to one would never be incompatible with the other. If God can join thought to one unextended being, he could also join it with

Michael Ayers has argued that Locke's doctrine of superaddition is best understood epistemologically — that is, as the claim that we finite humans cannot perceive any necessary connection between certain observable features of bodies, such as the cohesion of its parts, and the essence of matter. He further argues that Locke's chief reason for holding this is his skepticism concerning the nature of material substance. On Bayle's view once we reject extension as the essence of matter, the doctrine of superaddition becomes philosophically idle, since whatever the main attribute of matter turns out to be, it must be unextended, hence there is no conceivable incompatibility between thought and extension inhering in the numerically same substance. This, I suggest, is why Bayle makes no mention of Lockean superaddition or obediential powers in his subsequent works.

Still, considered as a criticism of Locke, one might again be tempted to question the pertinence of Bayle's criticism, since Locke's point after all is that matter might be capable of thinking. But here the context of Bayle's discussion — the attempt to achieve rational knowledge of the nature of God — supplies the missing premise. For, as Bayle reads him, Locke certainly does want to say that there are two fundamentally different kinds of substance, since like all 'philosophers of Christendom,' he is committed to the view that God is an immaterial, cogitative being. It is this claim, Bayle suggests, that Locke's skepticism about the nature of matter effectively undermines. In addition, Bayle offers a more direct criticism of Locke's refusal to accept extension as the principal attribute of matter, arguing that the result is a conception of matter beset by the same difficulties that follow from the Catholic doctrine of real accidents. For if extension is conceived as an accident that is really distinct from its subject, it could not render that subject extended. Furthermore, extension so conceived could only be produced by what the Scholastics term the 'eduction' of forms, which the moderns have shown to be an inconceivable creation. In short, Locke's rejection of matter as *res extensa* threatens to reverse the advances of modern philosophy and return us to the 'chaos of the Scholastics.'⁴²

another unextended being, there being nothing but extension that seems to us to make matter incapable of thought' (Bayle, *Dictionnaire*, art. Rorarius, rem. G, 82; P 233; slightly emended)

42 OD IV, 942a

IV Conclusion

Thomas Lennon has observed that 'if Leibniz was the broadest and most consistent, indeed, most brilliant thinker of his time, Pierre Bayle was perhaps that period's deepest thinker.'⁴³ Perhaps better than any of his contemporaries Bayle clearly saw the tendency of seventeenth-century philosophy toward atheistic materialism and deism. Yet if I am correct, for Bayle, the seeds of materialism lay not so much in Locke's controversial appeal to the possibility of superadding thought to matter (as Yolton and others have suggested), as in the abandonment of the Cartesian view that extension is the essence of matter. As Bayle exclaims at the end of his discussion of Locke, 'How much more advantageous would it be for religion to embrace the Cartesian principle that extension and matter are one and the same substance!'⁴⁴ Time and again Bayle instances our clear and distinct idea of matter as *res extensa* as a paradigm of metaphysical knowledge. But as Bayle himself saw, this view was slowly being abandoned, largely due to the decline of Cartesian physics and the rise of Newtonian mechanics:

[much] attention is required to locate the [primary] attribute of body in our idea of extension; one must combat ... popular prejudices concerning the vacuum.... In addition to this, there are several reasons from mechanics, which lead many great minds to assert that if there were no vacuum, there would be no motion.... It is in this way that the natural revelation concerning the *identity* of body and extension has grown dim.⁴⁵

43 Thomas Lennon, 'Mechanism as a Silly Mouse: Bayle's Defense of Occasionalism against the Preestablished Harmony,' in *Causation in Early Modern Philosophy*, Steven Nadler, ed. (University Park, PA: Pennsylvania State University Press 1993), 179.

44 'Combien seroit-il plus avantageux à la Religion de s'en tenir au principe des Cartésiens que l'étenduë, et la matiere ne sont qu'une seule et même substance!' (Bayle, OD III, 942b)

45 '[beaucoup d'] attention pour trouver l'attribut de corps dans l'idée de l'étenduë; il faut pour cela livrer combat ... aux préjugés populaires touchant le vuide.... A cela se joignent quelques raisons de mécanique, qui font trouver à de grands esprits, que s'il n'y avoit point de vuide, il n'y auroit point de mouvement.... C'est ainsi que la revelation naturelle sur l'*identité* du corps, et de l'étenduë, s'est obscurcie' (Bayle, OD III, 545a). In the article 'Zeno of Elea' Bayle reports having heard from a mathematician familiar with Newton's work that 'the falsity and impossibility of this proposition [that motion is possible in a plenum] had not only been proved, it has been mathematically demonstrated.' He goes on to argue that modern mathematicians thus stand in opposition to our clearest and most distinct idea, that of extension (Bayle, *Dictionnaire*, art. Zeno of Elea, rem. I, 545; P 379). Cf. Bayle, *Dictionnaire*, art. Leucippe, rem. G.

In this sense, perhaps, Bayle sees Locke less as a progenitor of this tendency, than as a sign of the times.

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