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## **BAYLE AND PANPSYCHISM**

In his writings, Pierre Bayle demonstrates a remarkable skill for combining erudition with topical discussions. Some of the articles devoted to ancient philosophers in the *Historical and Critical Dictionary* provide him an occasion to discuss materialism. Bayle makes a surprising suggestion: in order to avoid devastating objections, materialists should postulate that the property of thought does not emerge from certain combinations of matter but is present from the start in every part of matter. This proposal is strikingly similar to the view recently revived by Thomas Nagel and Galen Strawson, which is termed “panpsychism.”<sup>1</sup> In fact, Bayle seems to be one of the first philosophers to describe what this kind of panpsychism could be, that is to say, an anti-emergentist theory that is materialist (as opposed to Leibniz’s), non-monistic (as opposed to Spinoza’s), and according to which matter as such, in each of its basic constituents (which Strawson calls “ultimates”, whatever they are), possesses a mental property, or, more simply put, some form of consciousness (generally called in the current discussions “experience” or “what it is like to be-ness”) instead of having to be permeated by a complementary principle (some “soul of the world”, the Stoic *pneuma*, a vital force, a substantial form, etc., as in earlier theories<sup>2</sup>) for becoming conscious. In other words, this form of panpsychism is purely “physicalist,” but matter does originally have, besides non-experiential properties, another fundamental property, that of experientiality.

Is Bayle’s suggestion to be taken seriously and does it really aim at improving the materialist position? Or does Bayle merely intend to reveal the implausibility of materialism? On the face of some of the odd consequences of panpsychism that Bayle

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<sup>1</sup> See Nagel 1979:181-195 and Strawson 2006a.

<sup>2</sup> Cf. Skrbina 2005:23-87.

points out, such as cognitive faculties in corpses, the second alternative looks obvious. However, Bayle does not shy away from paradoxes and he often advances serious thoughts in a joking way. Furthermore, there is reason for entertaining the idea that Bayle might actually consider panpsychism to be tenable, as he could use the same line of defence that he outlined for another kind of materialism, namely, Stratonism. It is worth, then, taking a closer look at this possibility. If it proved to be a real possibility, a line of interpretation that presents Bayle as a forerunner of eighteenth-century materialism would be confirmed.<sup>3</sup>

However, accepting the panpsychic hypothesis would lead Bayle to a view similar to Locke's superaddition theory and I contend that such cannot be his position because he embraces the Cartesian principle that each substance has only one principal attribute. This makes unacceptable, in his eyes, the conjunction of thought with matter in the same being. I will therefore conclude that Bayle considers any kind of materialism to be untenable. By contrast, this will make clear which kinds of metaphysics and epistemology panpsychists need to adopt to defend their view.

### *I – From materialism to panpsychism*

#### *Democritus and the soul of the atoms*

In the article EPICURUS of the *Dictionary*, Bayle reminds us that the philosopher of the Garden did not invent atomism but only modified some of Democritus's views. In Bayle's judgment, these changes were "not always for the better." In the first place, Epicurus "spoiled the system in not retaining Democritus's doctrine touching the soul of the atoms."<sup>4</sup>

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<sup>3</sup> See, among others, Brogi 1998, Mori 1996: 124-134, Mori 1999: 70-74, Israel 2006: 456-57.

<sup>4</sup> *HCD*, art. EPICURUS, main text (II: 778-79, modified); cf. *HCD*, DEMOCRITUS, Remark O (II: 642) (NB: when possible, I will quote from Popkin's translation in *Selec*. I have checked both translations

The soul of the atoms! Bayle's ascription of this surprising idea to the Abderitan philosopher is based on St. Augustine's assertion that Democritus "imagines there is an animal or spiritual nature in the concourse of atoms", whereas "Epicurus allows nothing but atoms in the principles of things."<sup>5</sup> Bayle is elsewhere more skeptical about the veracity of Augustine's report.<sup>6</sup> Nevertheless, he seizes on this idea of animated atoms, which at first glance is absurd, and shows that it would enable the atomists to dodge a number of objections. This maneuver would have a high cost, as

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against the French original in *Dictionnaire Historique et Critique*, 4<sup>th</sup> ed., and occasionally modified them, as it is here the case).

<sup>5</sup> *HCD*, EPICURUS, Rem. F (II: 779a. NB: when Bayle's Remark is very long, I will use its marginal notes as map references for locating the passage quoted: here, circa n. 66). Bayle refers to Augustine's *Epistola LVI*, but see instead: *Epistula CXVIII* (to Dioscorus) 28 (Augustine 1898: 120–21).

Augustine's probable source is Cicero, *Tusculan Disputations*, I.18/42 (Cicero 1960: 50): "[...] individuorum corporum levium et rotundorum concursioem fortuitam, quam tamen Democritus concalectam et spirabilem, *id est animale*, esse volt" (emphasis mine), and *De natura deorum*, I.43/120–21 (Cicero 1933: 46–47).

<sup>6</sup> In *HCD*, DEMOCRITUS, Rem. P, Bayle wonders whether Augustine correctly understood Cicero, who did not make himself clear. Nevertheless, in *HCD*, LEUCIPPUS, Rem. E, Bayle refers to another account, similar to Augustine's. Unfortunately, this account, which Bayle believes to be Plutarch's, is in reality apocryphal: "Democritus says that all things somehow have a soul, even dead bodies, which is visible in their retaining still some heat and some sensation although they are for the most part already gone" (III: 790b, circa n.18, quoting [Pseudo-] Plutarch, *De placitis philosophorum*, I.IV, 4). Bayle, however, adds that we cannot verify the veracity of "Plutarch's" report, Democritus's writings being lost. Attributing such a thesis to Democritus is in effect historically inaccurate. But, as is still today sometimes the case, ancient authors whose works survive only fragmentarily provide Bayle with a convenient basis for doctrinal speculations. Bayle particularly liked to toy with "Democritean" theories. In *HCD*, DEMOCRITUS, Rem. P, he goes so far as to pretend (jokingly?) that Malebranche's "vision in God" is nothing but a correct version of a thesis held by Democritus, who, according to Cicero, "lavished the name of God upon the images and ideas of objects [...]" (II: 642b)! Bayle, after Cicero, is here alluding to the infamous *eidola* in the atomist account of perception and is playing with the etymological meaning of the word. We shall see later that Bayle's treatment of Strato of Lampsacus is another egregious example of free speculation built on some historical materials.

we shall see. However, the atomists have no other choice, because denying individual atoms the property of thought creates a deadly flaw in their philosophy. For Epicurus, souls are nothing more than a fortuitous encounter of inanimate atoms.<sup>7</sup> Therefore, according to him, aggregates of inanimate atoms are able to think.<sup>8</sup> Moreover, they have to be informed by the *eidola*, that is to say, by the material images which are received from other bodies and are also fortuitous encounters of atoms. But, Bayle contends, “to pretend that a collection of inanimate atoms can be a soul, and can emit images that occasion thoughts in us, is to indulge in a hypothesis still more obscure than Hesiod’s chaos.”<sup>9</sup>

This hypothesis is in effect exposed to an objection which Bayle says he borrows from Galen of Pergamon through the intermediary of Gassendi:<sup>10</sup>

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<sup>7</sup> Cf. Epicurus, *LH* 63–67, Lucretius, *DRN* III.161–257: the soul is a bodily substance (*soma, corpus*) composed of atoms of breath (*pneuma*), air, heat, and of a fourth, nameless nature. The body by itself, i.e. without the soul, is not sentient. But the soul owns its properties only when it is contained by the body. When the latter is badly damaged and the lattice of its atoms loosens, the atoms of the soul scatter and retain none of its powers.

<sup>8</sup> I follow Bayle’s usage of the Cartesian notion of thought, which encompasses not only rational thinking, but all other mental phenomena. See *Réponse aux Questions d’un Provincial*, I.24: “C’est encore un principe des Cartésiens, que par la pensée il faut entendre non seulement les idées universelles, les méditations, les raisonnements, les affirmations, mais aussi les sensations et les imaginations, et les passions” (*OD* III : 542b). Conversely, cf. *HCD*, RORARIUS, Rem. E (*Selec.*: 223): a substance that senses is “capable of thought in general”, that is, is able to “receive all sorts of thoughts”, including rational thoughts. Having the property of thought is equivalent, in Cartesian terms, to having a soul. But in the following discussion, Bayle’s hypothesis that atoms are ensouled or animated does not mean that they have a soul distinct from their corporeal mass, since they are simple and indivisible, but means that, *qua* matter, they have the property of thought.

<sup>9</sup> *HCD*, EPICURUS, Rem. F (II: 779a, circa n. 66, modified).

<sup>10</sup> Bayle refers to Gassendi’s *Syntagma philosophiae*, pars II (Physica), sect. III, membrum posterius, book V, cap. III (II: 343). A version of this argument is found in Bayle’s course on physics (*Institutio Philosophiae*, *OD* IV: 456).

[Argument 1] If one atom is not capable of sensing, two like atoms are not capable of sensing either, nor three, nor four, nor any number of them, and thus, not a soul made up of atoms.

To put it in another way, what this *sorites* wants to show is that sensibility cannot emerge from a combination of insensible atoms, no matter how many there are.<sup>11</sup>

In fact, this argument does not seem to be found in Galen.<sup>12</sup> But, as Bayle remarks a little farther along in the same passage (without saying that he still is following Gassendi), the same objection is made by Plutarch in his book against the Epicurean Colotes.<sup>13</sup> Let us develop Bayle's allusion by examining a few passages from Plutarch's treatise.

According to Epicurus, the atoms are substances without qualities. They only have quantitative characteristics (weight, size, shape). In addition, they are impassive because of their hardness.<sup>14</sup> It follows, Plutarch says, that no compound or any quality can be engendered by the encounter of atoms:

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<sup>11</sup> Throughout this paper, I will not use "emergence" in the sense of contemporary "emergentism," which generally entails "downward causation," but simply, as Nagel and Strawson, in the broader sense of "something new coming from something more basic."

<sup>12</sup> Gassendi presents this *sorites* and does attribute it to Galen of Pergamon, but what he reports resembles more a summary and a commentary of Galen's *De Constitutione artis medicae* (reference given: cap. 4, *de elementis*, 3 & 4; *re vera* chap. 7) than a direct citation. In particular, although Galen's chapter is in effect a polemic against Epicurus, I do not see the *sorites* properly stated in the original (*Peri sustasios iatrikes*:74–76). Galen's argument is that something simple cannot be affected, and that, therefore, a body which senses pain cannot be composed of elements which are simple and all of the same species. One would have to consult the Latin edition used by Gassendi, but I cannot tell which one he had at hand.—This argument is not literally found in Galen Strawson either, but rejecting one way or the other the absolute emergence of properties is the main rationale for turning to panpsychism (see Nagel 1979: 182 and Strawson 2006a: 12–21).

<sup>13</sup> Bayle also mentions Plutarch's treatise in *HCD*, LEUCIPPUS, Rem. E (*Selec.*: 129).

<sup>14</sup> Cf. *LH* 54.

Take for example the quality called hot. How do you account for it? From where has it come and how has it been imposed on the atoms, which neither brought heat with them nor became hot by their conjunction? For the former <i.e., if they had heat beforehand> implies the possession of quality, the latter <i.e., if their conjunction made them hot>, the natural capacity to be affected, neither of which, say you, can rightly belong to atoms by reason of their indestructibility.<sup>15</sup>

The atoms are not susceptible to being individually transformed. Therefore, that which none of them individually has or acquire cannot result from their combination. As a consequence, no change will ever happen, no new property will emerge. Zero heat plus zero heat will not give any degree of heat. The same goes for the property of life.<sup>16</sup> A fortiori, consciousness cannot be explained by the encounter of Epicurean atoms:<sup>17</sup>

[...] perception, mind, intelligence and thought cannot so much as be conceived, even with the best of will, as arising among void and atoms, things which taken separately have no quality and which on meeting are not thereby affected or changed; indeed even their meeting is not one that leads to fusion or mixture or coalescence, but only to shocks and rebounds.<sup>18</sup>

Bayle takes up the exact same objection against all atomists, ancient and modern, and he deems it to be conclusive:

Let people put their wits upon the stretch, and turn themselves which way they please, as Lucretius and Gassendus have done, to resolve that difficulty, they will never be able even to skim it [...]<sup>19</sup>

However, is Plutarch's argument not a mere fallacy of composition, that is to say, a fallacy of the following type: atoms are colorless, my cat is made of atoms, therefore my cat is colorless? Is it not the case that compounds have properties that their parts

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<sup>15</sup> *Pros Coloten*, 1111 C-D/8: 215.

<sup>16</sup> *Pros Coloten*, 1111 D-E / 9: 215-217

<sup>17</sup> Which is Lucretius's claim, *DRN* II.865–901 and 926–30.

<sup>18</sup> *Pros Coloten*, 1112 C / 10: 219.

<sup>19</sup> *HCD*, EPICURUS, Rem. F (II: 779b, circa n. 70, modified).

do not possess? Bayle does not directly address this question, but we should note that his claim is *not* that a whole always must be composed of parts that have the same nature and properties as this whole. This would be tantamount to Anaxagoras's theory of *homoeomeria*, and not only is Bayle well aware of Lucretius's criticisms against this theory,<sup>20</sup> but in the article ANAXAGORAS of the *Dictionary* he takes extraordinary care to amass new objections against it.<sup>21</sup> He himself underlines that there are many cases in which the whole has a property that does not belong to the parts. For instance, he says, four lines, none of which is a square, make a square when appropriately put together.<sup>22</sup> In a general way, he goes on, "the bare change of figure, and of situation of parts, is sufficient to form a whole, which, as to its species and properties, differs from each of its parts." So by no means does Bayle's anti-emergentism confine combination to the production of homogeneous properties, as when for instance a third color results from the blending of two colors. However, Bayle's remark hints at the reason why he readily embraces Plutarch's *sorites*. As we will see in the following sections, his criticism of materialism is underpinned by Cartesian metaphysics. It is thoroughly intelligible and metaphysically coherent that, when you put together four lines in a certain position, you create a square. The emergence of this figure and of a new property is not a leap into an altogether different category. It is all a matter of relations between parts of extension. Squareness clearly derives from the properties of the lines and belongs to the same genus of geometrical entities. What Bayle does not admit is the assumption that a similar combination of extended entities can yield something mental, that is to say, something that belongs to a totally different region of being.<sup>23</sup>

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<sup>20</sup> *DRN* I.830–920.

<sup>21</sup> Remark C, I (I: 297a–b), and G *in toto* (I: 303a–06a).

<sup>22</sup> *HCD* ANAXAGORAS, Rem C (I: 297b).

<sup>23</sup> This is consonant with Strawson's (2006a: 12–21) demand that any alleged emergence be as thoroughly intelligible as it is in the case of physical properties of compounds: "You can get liquidity from non-liquid molecules as easily as you can get a cricket team from eleven things that are not

Furthermore, something might be said to supplement Plutarch's argument. An ordinary example of a compound having properties that its parts do not possess is water. An atom of hydrogen is not liquid, nor is an atom of oxygen, but if we repeatedly combine two atoms of hydrogen with one of oxygen, we will get something that is liquid. There is no doubt about that, but let us note that the covalent bonding of hydrogen and oxygen atoms modifies them: the oxygen atom shares an electron with each of the hydrogen atoms, which thus complete their outer shell.<sup>24</sup> But the oxygen atom exerts a stronger pull on the electrons than the hydrogen atoms. From this results a dipole effect that, within certain temperature limits, enables the molecules of water to bond loosely together (the partially electropositive hydrogen is attracted by the electronegative oxygen of another molecule), with the result that they can form a somewhat cohesive whole but at the same time can slide past each other. For the whole to have a new property, the constituents have been modified to become parts of that whole. Emergence of new properties is probably not possible with a mere aggregation of unmodified elements, which results only in the summation of the parts' properties (their weight, for instance). A stronger unity than juxtaposition is needed, and it requires a transformative interaction between the parts.<sup>25</sup> But, as

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cricket teams. In God's physics [i.e. for a non-epistemologically limited observer], it would have to be just as plain how you get experiential phenomena from wholly non-experiential phenomena." But, as Strawson puts it in a very Cartesian way, to explain the emergence of liquidity we work with "a small set of conceptually homogeneous shape-size-mass-charge-number-position-motion-involving physics notions." Claiming that such notions can also bridge the gap between non-experiential and experiential phenomena is not just a leap of faith. It comes down, Strawson objects, to admitting that *anything* is possible, as for instance the extended coming from the non-extended, since the effect would positively contradict the nature of the alleged causes.

<sup>24</sup> Remark made by Coleman 2012: 140.

<sup>25</sup> Cf. Nagel 1979: 182: "All properties of a complex system that are not relations between it and something else derive from the properties of its constituents *and their effects on each other when so combined*" (italics mine). Galen of Pergamon already made that point very clear: "For anything constituted out of many things will be the same sort of thing the constituents happen to be, should they



Plutarch points out, Epicurus's atoms (contrary to contemporary physics' atoms) are impassible and cannot be intrinsically modified. Their only interaction is "shocks and rebounds." This is why Plutarch asks: in what does heat reside? If there are only void and atoms, heat must be "in" the atoms. But this is impossible, given that the atoms do not have heat originally and cannot acquire it either, being non-modifiable. In the same way, today a reductionist physicalist would probably not grant that the neuronal system produces consciousness as a new entity of its own kind. So consciousness must be "in" the neurons and synapses (that is to say, the neuronal system must be the ontological subject that has the property of being conscious), as a feature they do not possess originally but acquire by being connected in a network. But, again, this is impossible with Epicurean atoms.<sup>26</sup>

At any rate, according to Bayle the only solution for the ancient atomists is to suppose that the atoms originally possess the property of thinking.<sup>27</sup> If so, it becomes

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continue to be such throughout; it will not acquire any novel characteristic from outside, one that did not also belong to the constituents. But if the constituents were altered, transformed, and changed in manifold ways, something of a different type could belong to the composite that did not belong to the elements ... Therefore, it is necessary that that which is going to sense be constituted either (i) from first elements capable of sensation or (ii) from ones incapable of sensation, but naturally such as to change and alter." (Galen, *On the Elements according to Hippocrates*, 1.3, 70.18–25, 74.18–21, quoted and translated by Caston 1997: 355–57). Naturally, (ii) would be exposed to Galen's or Plutarch's objection (argument 1).

<sup>26</sup> Maybe, after all, Epicurus is not a reductionist and is in fact an emergentist, which means that he allows for realities that are of a higher order than atoms and have their own causal powers (see Sedley 1988, especially 321–22). But this question is beyond the limits of this paper.

<sup>27</sup> This hypothesis is explicitly rejected by Lucretius, II.963–90, on the ground that the atoms that make human beings should be able to feel pain and pleasure, to laugh, to be wise and reason with learned sentences. But Bayle's answer is that, while the fundamental problem is to explain how thought (consciousness) in the most general sense obtains, the different possible combinations of sensitive atoms could explain the variations in degrees, and even the qualitative variations, between the different forms of consciousness: "if each atom had a soul and feeling, we could understand how collections of atoms might constitute a composite being capable of certain particular modifications, both with regard

easy to understand how an assembly of such corpuscles can also be endowed with thought. In other words, the dilemma atomists face is: either no thought, ever; or thought from the start. They are of course forced to choose the second alternative.

Moreover, atomists cannot assume that only some atoms have the property of thought while others do not have it. First, according to the atomists themselves, all the atoms have the same nature and differ only by their size and shape.<sup>28</sup> Second, as their combinations are merely fortuitous, one could not expect the atoms that are endowed with thought regularly to fall into the right place, that is to say, in the compounds of non-thinking atoms that need to be associated with thought.<sup>29</sup>

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to sensation and knowledge and with regard to motion. The difference noticed between the passions of rational and irrational animals could be explained in general by the different combinations of atoms” (*HCD*, Leucippus, Rem. E; *Selec.*: 129). See also *HCD* LEUCIPPUS, Rem. E and RORARIUS, Rem. E, where he objects to the Aristotelians that all souls must have the same nature and that differences between them are due to the organs to which they are linked: “Aristotle and Cicero at the age of one did not have more sublime thoughts than that of a dog; ... The soul of a dog in the organs of Cicero and Aristotle would have lacked nothing for acquiring the knowledge of those two great men” (*Selec.*: 223–24).

<sup>28</sup> Cf. *HCD*, LUCRETIUS, Rem. F: “I have often wondered that neither Epicurus, nor any of his followers, would consider that the atoms which form a nose, two eyes, several nerves, a brain, have nothing more excellent in them than those which form a stone; and therefore it is very absurd to suppose that every collection of atoms which is neither man nor beast should be destitute of knowledge. He who denies the soul of man to be a substance distinct from matter, reasons childishly, unless he supposes that all the universe is animated, and that there are everywhere some particular thinking beings” (III: 919b, circa n. 34, modified). Cf. however Lucretius, *DRN* II.889–96, III.124–27: not any atoms whatsoever can make a sensible being, but only those that have the adequate smallness, shape, motions, arrangements, and dispositions.

<sup>29</sup> One of the referees for this paper objects that “the Epicureans had their *concordia*, dynamic textures of compound bodies, and these could have a special propensity (grounded in harmonies of motions, of course) for capturing and incorporating the right sort of atoms. This is presumably what Lucretius would have said in reply to this argument.” I believe that Bayle would have to concede the point. I note however that Epicurus (*LH* 64) and Lucretius (*DRN* III.331–49) say that body and soul begin to exist at the same moment. This implies that it is not the fully constituted body that has the right texture to

It is therefore necessary to suppose that all the atoms think. Thence, Bayle can conclude that if the atomists want to account for the existence of thought, they are obliged to follow “Democritus” rather than Epicurus, that is to say, to put forward the following postulate, as strange as it may sound:

[P1] each atom is by nature endowed with thought.

This assertion is obviously not provable. It is a mere assumption that intends to explain certain observable effects. But it is indispensable to a consistent atomistic theory.

#### *Dicaearchus and the living dead*

In fact, Plutarch’s objection does not impact only atomism but also materialism in general. Dicaearchus, Bayle recalls in the article of the *Dictionary* he devotes to him, was a disciple of Aristotle. This means that he is likely to have viewed prime matter as continuous and subsequently differentiated in elements which are qualitatively different, in contrast to atoms. But Dicaearchus denied that the soul is anything different from the body. According to the passage of Cicero that Bayle cites,<sup>30</sup> Dicaearchus believed the soul to be in fact a corporeal “power”, and this power to come from the state in which a body is, namely, a state of “harmony” of its constitutive elements, “tempered” or “tuned” in such a way that this body has the properties of living, feeling, and thinking in the case of humans.<sup>31</sup>

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capture thinking atoms, but rather pre-fetal aggregates of non-thinking atoms. But the fact that the adequate pre-fetal aggregates obtain would have to be explained, and Bayle rejects the Epicurean explanation of the constitution of complex, organized beings, which relies on the *infinite* number of the random encounters between atoms (see below, fn. 62).

<sup>30</sup> *HCD*, DICAERCHUS, Rem. C (*Selec.*: 64). Cf. *Tusculan Disputations*, I.9/21–22 (Cicero 1960: 26), and Dicaearchus 2001: 18–30.

<sup>31</sup> See Bayle’s note 53, in *HCD*, DICAERCHUS, referring to (pseudo-)Plutarch, *De placitiis Philosophorum*, 1. IV, chapter 2, and Nemesius of Emesa (cf. Dicaearchus 2001: 23). As the real Plutarch puts it (*Pros Coloten*, 1119a-b), for Dicaearchus “the substance of the soul is not anything at

The objection that Bayle raises against Dicaearchus in fact strengthens and extends the preceding conclusion: if what is called ‘soul’ “makes but one being with the bodies that are named living,” a soul must be originally present in *all* bodies, even the non-living ones.<sup>32</sup> Thus a similar dilemma arises: either no thought at all, or thought everywhere. The demonstration (argument 2) that Bayle uses to establish this dilemma rests on the principle:

[2a] That which is not distinct from the body belongs to the essence of the body.

As Todd Ryan has brought to light,<sup>33</sup> Bayle rejects the scholastic distinction between accidents properly said on the one hand, and properties (in the Porphyrian sense) or inseparable accidents on the other hand, that is to say, features that are always and necessarily conjoined to a substance but do not constitute the essence of this substance (such as the capacity for laughing with respect to human nature). For Bayle, a feature that is inseparable from the essence is just a part of the essence.<sup>34</sup> Thenceforth, either a property is merely a contingent accident, separable and distinct from the thing, or it is an essential attribute.

Therefore, Dicaearchus’s assertion that that the soul is not distinct from the living body implies that it is an essential property of this body. In effect, Dicaearchus could

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all; rather, it is the tempered body which possesses the power of thinking and living.” As Caston 1997: 339–46 explains, this qualifies as epiphenomenalism, or more precisely as a supervenience theory. Dicaearchus’s view deeply differs from Epicurus’s, which presents the soul as a nature of its own (material, of course) that is contained by the animated body (see above, fn. 7). Lucretius, *DRN* III.98–135, fights the *harmonia* theory (i.e., that the soul is just a certain state of a body, as a fist is nothing but a clenched hand) and says that the soul is a part of the human being exactly as hands, feet or eyes.

<sup>32</sup> *HCD*, DICAEARCHUS, Rem. C (*Selec.*: 65).

<sup>33</sup> Ryan 2009: 59–60.

<sup>34</sup> “Nos qui nullum discrimen agnoscimus inter attributum necessario conjunctum, et attributum essenziale, dicimus proprium quarto modo esse attributum essenziale et identificatum realiter cum differentia” (*OD* IV: 224, quoted by Ryan 2009: 59–60).

hardly say that it is an accident, since, if the soul supervenes when a body is disposed in a certain way, ensoulment obtains as soon as, and as long as the body has this disposition, and consequently is not a transient and contingent property of this body.

But if being ensouled is an essential property, Dicaearchus is obliged to say as much about all bodies, even non-living ones, because:

[2b] If a bodily property is essential, it appertains to bodies *qua* bodies.

Naturally, one will immediately object that being ensouled is an essential property only of those bodies that have the “tuning” described by Dicaearchus. We will see in the next two sub-sections why Bayle thinks that this obvious response is not relevant. For now, let us allow him to draw from this his intended conclusion: one must either grant the same faculty to each and every body, which entails that “all bodies are thinking substances”, or deny that faculty to all bodies, which implies that “the thinking substance is distinct from the body.” Since the materialists affirm that matter thinks in certain beings (such as ourselves), then, according to the second branch of the dilemma, matter must think in all beings. Moreover, since thought is supposed to be an essential property of matter, the same necessity applies to all the parts of existing bodies and all their possible subdivisions. This holds whether there are ultimate constituents of matter such as atoms or matter is infinitely divisible. The same consequence affects every kind of materialism: Epicurean, Dicaearchian, or any other.

But Bayle has more to say. He goes on to show that the logic of materialism leads to the endorsement of consequences which are so odd, that, by comparison, the other alternative, namely, body/spirit dualism, appears to be simple and lucid. As a matter of fact, Bayle introduces a new principle:

[2c] An essential property can never be lost.

A corpuscle (which is not necessarily an atom) remains the same being whether it is in the body of an animal, or in a non-living body. This principle entails, Bayle says,

that cognitive faculties are still present in the atoms that compose cadavers.<sup>35</sup> It also implies that the corpuscles freed by the dissolution of a corpse carry with them their own faculty of thinking, since “if a body is capable of feeling pain when it is placed in connection with nerves, it is also so capable in any other situations in which it may be located, either in stones, in metals, in the air, or in the sea.”<sup>36</sup>

In brief, what has thought will think. It must be so for all bodies and their parts; and this property belongs to them by nature. As a consequence, in a coherent materialism, the attribute of thought must be universal and indestructible. The bottom line is that, according to Bayle, materialists must endorse the following postulate:

[P2] *All the parts of matter think, and they always think.*

In other words, materialism cannot but be a panpsychism.

### *The continuity of modes*

Bayle is of course aware that the first premise of his demonstration, namely, [2a] “that which is not distinct from the body belongs to the essence of the body”, can be questioned.<sup>37</sup> The mind, the materialists might want to say, “is a modification of the body”. The term “modification” here has the technical, Cartesian sense of “mode”,

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<sup>35</sup> *HCD*, DICAERCHUS, Rem. C. See also Rem. L (*Selec.*: 70): “You clearly see here the entire state of the question. It is solely to determine whether a philosopher who believes that there are bodies that think and bodies that do not, reasons logically. I maintain that he does not; and that whoever once admits, for example, that, a collection of bones and of nerves feels and reasons ought to maintain, on pain of being declared guilty of not knowing what he is talking about, that every other assemblage of matter thinks, and that the thought that existed in such a collection exists in other modifications of the disunited parts after the collection has been dissipated.”

<sup>36</sup> *HCD*, DICAERCHUS, Rem. C (*Selec.*: 65). Conversely, “if an atom of air was once destitute of all thought, it seems completely impossible that its conversion in that substance called ‘animal spirit’ would ever make it capable of thinking. This seems as impossible as to give a definite location to a being that had been for some time without such a location” (*Selec.*: 65).

<sup>37</sup> *HCD*, DICAERCHUS, Rem. C (*Selec.*: 66).

that is to say, a particular variation of a common essence, as, for example, the shape of an object is with respect to extension. Granted, a mode is not an accident, proper or not, in the scholastic sense, namely, an entity distinct from the substance. But neither is it purely and simply identical to the essence. All bodies are extended by essence, but they differ through their modes: shape, motion, etc. Therefore, materialists might argue, *contra* [2b], that although matter is the same everywhere, nevertheless thought occurs, as a mode, only in bodies that are organized in a very specific manner.<sup>38</sup> Today, we would say that neurons think only when they are interconnected, and evidently do not think when they are removed from the brain.<sup>39</sup>

However sensible this objection looks, it does not unsettle Bayle. On the contrary, he calls it “absurd”. To defeat it, he brings in a third argument, which is based on the homogeneity and the continuity of modes. Granted, extension can receive different shapes, but in this process one shape is replaced by another shape and not by, for instance, a sound. Moreover, extension is never without a shape. One can express the same idea in the terms of Aristotelian physics. True, change consists in passing from one opposite to the other, for example from cold to hot, or from black to white. Nevertheless, at the very least the two opposites belong to the same genus (respectively, tactile qualities and colors). Admittedly, one of the opposites may be positive while the other one is a mere “privation”. Such are motion and rest, for instance, if rest is nothing but the absence of motion. But, in fact, these two opposites are each a mode of location: rest is a permanent presence in one place, while motion is the continuous acquisition of new locations. Rest may consist in the absence of motion, but when a body ceases to move, it does not cease to have a location; rather,

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<sup>38</sup> This will be Toland’s objection in *HCD*, DICAERCHUS, Rem. L, but, as we shall see, he ignores the answer here (Rem. C) given by Bayle.

<sup>39</sup> According to the words that Bayle ascribes to his objector: “matter, without the loss of anything that is essential to it, could cease to feel as soon as it was no longer enclosed in the organs of a living machine” (*Selec.*: 66).

it begins conserving the same location. Thus, it is clear that the successive modes of a substance always belong to the same genus.

Both ancient and modern philosophy, then, approve of this double requisite:

[3a] A body can never be without a mode;

[3b] The consecutive modes of this body must be of the same kind.

As a consequence, one can formulate the principle of homogeneity and of continuity of modes in this manner:

[3c] A mode cannot disappear unless it is replaced by another mode of the same kind.

Bayle can now deliver the death blow: “No sensation [*sentiment*] is driven from its substance except by the introduction of some other sensation.”<sup>40</sup> Thence, “if animal spirits do not have outside the nerves the same sensation that they have in them, they have only lost this sensation by acquiring one of another kind.”<sup>41</sup> True, this new form of thought may be of a totally different species, of which we have no knowledge. But, as Bayle says, “nothing precludes the possibility that sensation may be a genus that has other genera under it, before we reach what is called *species infima*.”<sup>42</sup> In other words, it may be that the new form of thought is the opposite of the previous one, just as white is to black or square to circle; but this new species will nonetheless be included in the genus ‘thought’ and thus the two successive modes of thought will share at least a generic community.

Bayle can therefore maintain that “a body that senses once will always sense.” Even if thought is not a part of the essence of corporeal substance but only one of its

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<sup>40</sup> *HCD*, DICAEARCHUS, Rem. C (*Selec.*: 66).

<sup>41</sup> *HCD*, DICAEARCHUS, Rem. C (*Selec.*: 66).

<sup>42</sup> *HCD*, DICAEARCHUS, Rem. C (*Selec.*: 66). One might also think of difference of degrees of consciousness (cf. the distinction perception/apperception in Leibniz).



modes, thought must be continually present in one form or another, exactly as, for example, local presence.<sup>43</sup>

As a consequence, the fact that a bodily part is dissociated from a whole that thinks (as when a neuron is extracted from the brain) does not imply that this part loses the property ‘thought’. Actually, it cannot lose it, because:

[3d] A mode of a substance is owned by each part of that substance as it is by the whole.

That is, if a mode affects a substance as a whole, it also affects its parts and is each part’s own mode. For instance, all the parts of a body in motion are in motion. Similarly, if a part is part of a thinking whole, it has thought as a mode, and, by virtue of [3c], once separated this part cannot but conserve this mode, even if it is under the form of another species of thought.

Thus, Bayle can conclude that the modal version of materialism is obliged to affirm that:

[P3] If thought is a mode of a body, this body always conserves thought under one guise or another.

Again, that which thinks has always thought and will always think.

### *Toland and the thinking machines*

John Toland, the Irish materialist, tried to challenge Bayle’s conclusion and to show that Dicaearchus is not obligated to concede that, as a consequence of his own principles, matter must be thinking always and everywhere. Toland’s arguments are weak and overlook the points already established by Bayle, in particular the necessity

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<sup>43</sup> *HCD*, DICAEARCHUS, Rem. C: “When somebody gives us an example of some body that loses a place without acquiring another, we will agree that certain bodies may lose one sensation without acquiring another. But, since it is impossible that such an example be given, we are justified in maintaining that every body that feels once will always feel” (*Selec.*: 67).

of the continuity between modes. It is probably out of mere politeness that Bayle, in a Remark (L) appended to the article DICAERCHUS for the second edition of the *Dictionary* (1702), inserted Toland's criticisms and his response to them.<sup>44</sup> Nevertheless, Toland's objection gave Bayle an opportunity to add some important details and complete the previous argument.

In brief, Toland's main objection, which targets [2b], is that just as a machine functions only if its parts are assembled in the right order, matter is able to think only when its parts are arranged in a specific manner. In Descartes' system, Toland recalls, what makes a dog different from a stone is not that the dog has a soul but only that "the dog is composed of parts so put together that they make a machine, which the arrangement of the corpuscles of a stone does not."<sup>45</sup> Dicaearchus says nothing more than Descartes, except that he contends that human beings too, in their entirety, are machines. "From this will follow that the human soul is not distinct from the body, but is merely a construction, a mechanical disposition of several parts of matter."<sup>46</sup> Such a "soul" is a property of this specific type of body only, that is, of this particular ordering of material parts. Dicaearchus is by no means forced to admit that the same property has to remain in a different arrangement of parts—such as a cadaver—just as for Descartes a dog is no longer a dog once the machine is broken.

Thus, Toland contends that certain properties obtain only when a whole is organized in a certain way, and belong to this whole only, not to the separate parts (contrary to [3d]) or to the parts arranged in a different order. The question, then, as Bayle summarizes, is whether "the arrangement of the organs of the human body alone makes a substance that had never thought to become a thinking one."<sup>47</sup> Can the parts

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<sup>44</sup> Leibniz had put Toland in touch with Bayle. See Leibniz, *Briefwechsel*, III: 68 and III: 70. Cf. Dagron 2009: 168–78.

<sup>45</sup> *HCD*, DICAERCHUS, Rem. L (*Selec.*: 67, modified).

<sup>46</sup> *HCD*, DICAERCHUS, Rem. L (*Selec.*: 67).

<sup>47</sup> *HCD*, DICAERCHUS, Rem. L (*Selec.*: 70).

of the machine, being each deprived of thought, produce thought once assembled in a certain order? Bayle, in fact, has already responded negatively, in Remark C, to this question (arguments 2 and 3). Nevertheless, in Remark L, he sets against Toland, as I said, an additional argument which hinges on the principles of homogeneity of effects and heterogeneity of properties, and calls for a non-emergence theorem. Principle [2c] proceeded, if I may say so, from top to bottom: once an essential property is granted to a body, this property cannot be taken away; consequently, it is impossible to convert thinking matter into non-thinking matter.<sup>48</sup> Now, Bayle establishes that, conversely, one cannot pass from non-thinking matter to thinking matter. The principle of this fourth argument is the same as that of Plutarch's objection to atomism which Bayle used in the article EPICURUS (argument 1), but it will be here expressed in Cartesian terms and applied to materialism in general:

[4a] All the effects of a change that affects extension pertain to extension (homogeneity of effects);

[4b] One does not find in the effects of a change that affects extension any of the characteristics of thought, and one does not find in the effects of a change that affects thought any of the characteristics of extension (heterogeneity of properties);

[4c] Therefore, the property of thought cannot come from changes affecting extension (theorem of non-emergence).

Proposition [4b] rests of course on the fact that the notion of thought is an idea which is clear, complete, and distinct from the idea of extension. When we scrutinize changes in extension, we see nothing but diverse motions and modifications of particles of matter: variations in direction, speed, shape, size, etc. We do not see in these changes anything that recalls the nature of mental phenomena (of *qualia*, we

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<sup>48</sup> As Bayle summarizes, the conversion of being into nothingness (that is, the passage from a mode to the absence of any mode, for example of from figure to the lack of any figure) is impossible (*HCD*, DICAERARCHUS, Rem. C; *Selec.*: 67).

would say today). As a result, how a modification in extension could engender thought is unintelligible. Such is the Cartesian thesis that Bayle taught as a philosophy instructor in Sedan<sup>49</sup> and that he maintains in the *Dictionary*:

This capacity [of thinking] is other than the impenetrable extension, because all that you can do with this extension, by pulling it, hitting it, pushing it, in every way imaginable, is a change of situation whose whole nature and essence you fully conceive without having need to suppose any sensation [*sentiment*] in it, and even if you deny that there is any sensation in it [...] up to now no one I know of has ever dared to say that he conceived clearly that, in order to make a substance pass from the absence of all thought to actual thought, it sufficed to move it so that this change of situation would be, for example, a sentiment of joy, an affirmation, an idea of moral virtue, and so forth.<sup>50</sup>

Bayle, then, is willing to accept the comparison of the body with a machine, which entails that it does not function when its parts are not correctly put together. However, he is poised to turn this analogy to his advantage.

In the first place, “all that the arrangement of the organs can accomplish is reducible, as in the case of a clock, to various kinds of local motion.”<sup>51</sup> The wheels transmit a movement that originates elsewhere. They merely introduce in this motion variations in more or less, that is to say, changes which are non-qualitative and consequently do not trigger the emergence of new properties. As in Leibniz’s

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<sup>49</sup> “[...] We can negate from thought all that we conceive to be in a body, such as thought having a circular movement, being round, having some color [...]. Furthermore, we may deny that [thought] occupies a place or that it is extended, and yet have a distinct idea of thought; for, after having excluded these properties, we will still perfectly know what it is to be joyous, and how joy differs from pain [...] we do not conceive that matter could undergo any other change than being divided into particles that are smaller, moved about more, and like things. Now, a proof that this does not suit thought is that we deny that love be a figure or a movement with as much certitude as we deny that it is a ternary number” (*Institutio Philosophiae*, OD IV: 456).

<sup>50</sup> HCD, DICAERCHUS, Rem. L (*Selec.*: 70–71).

<sup>51</sup> HCD, DICAERCHUS, Rem. L (*Selec.*: 70).

windmill,<sup>52</sup> if we could enter in Bayle's clock, we would only see parts pushing other parts and nothing to explain perception.

Second, each of the wheels, before being placed in the mechanism, must already be a portion of impenetrable extension. This is a necessary condition for each part of the mechanism to transmit the movement when pushed by another part. Extension is not bestowed upon the parts by the positioning of these parts. "So I also say," Bayle concludes, "that the arrangement of the organs of the human body would be of no use to produce thought, if each organ before being put in its place was not actually endowed with the ability to think."<sup>53</sup>

In other words, it is again manifest that what appears in the end result must be present from the very beginning. Once more, Bayle rejects the emergence of thought from non-thinking matter. He can therefore maintain, notwithstanding Toland's objection, that Dicaearchus should have postulated, for the sake of consistency, that thought is present at once and forever in any portion of matter.<sup>54</sup>

This postulate is so strange (animated corpuscles, everywhere), it entails consequences that are so odd (thinking atoms in cadavers), that one is certainly entitled to assume that the goal of Bayle's remarks is to refute materialism *per absurdum* although he does not explicitly say so. Bayle compels materialism to become a panpsychism; but this transformation seems to make materialism implausible. In order to avoid such onerous assumptions, one will have to negate that matter can ever possess, even for a single moment, the faculty of thought. Thinking

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<sup>52</sup> *Monadologie*, par. 17 (Leibniz 1875-90/1960, VI: 609).

<sup>53</sup> *HCD*, DICAERCHUS, Rem. L (*Selec.*: 70).

<sup>54</sup> "[...] Dicaearchus, in order to reason consistently, ought to have admitted that thought is in any kind of matter; for otherwise it would be absurd to claim that, if several veins, several arteries, and the like, were placed together like the parts of a machine, this would produce the sensation of color, taste, sound, smell, cold, heat, love, hate, affirmation, negation, and so forth" (*HCD*, DICAERCHUS, Rem. L; *Selec.*: 71-72).

can only be the property of an immaterial substance, that is to say, of a soul or mind distinct from the body. Is that not what Bayle was intending to show?

## *II – Is panpsychism possible?*

### *A respectable materialism*

However, one might ask: why not endorse panpsychism, after all?

At times, Bayle himself does not seem to exclude such a possibility. On the contrary, in the article LEUCIPPUS (main text) of the *Dictionary*, rather than driving the ancient atomists to panpsychism as to an implausible assumption, he appears sincerely to deplore that they did not take the step of supposing that the atoms are conscious.<sup>55</sup> This move would have brought them important benefits, which Bayle presents in Remark E of the same article: the atomists could have fended off two difficulties which otherwise are fatal to their system.

We are already acquainted with the first benefit through the articles EPICURUS and DICAERARCHUS. The atomists would be in a position to respond to Plutarch's and Galen's objection (argument 1).

The second benefit is that, according to Bayle, the "Democritean" hypothesis would enable the atomists to dodge an objection that is none other than the "Achilles" (that is, the strongest argument) of rational psychology, as Kant would later call it. In short, this argument rests on the incompatibility between the unity that is characteristic of mental representations and the multiplicity that is characteristic of extension (divisibility being an essential property of matter). The simultaneousness of a (hypothetical) manifold of sensations in different parts of a body (such as the different parts of the brain) would not make *one* perception; parts thinking together

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<sup>55</sup> *Selec.*: 124.

would not produce *one* thought. Bayle does not explain in detail how the Achilles would be defeated. He only hints at the principle of the answer: since the Achilles's thrust rests on the indivisibility of that which, in us, has conscious representations, the atomists could claim that this condition obtains in their system, since each atom is indivisible.<sup>56</sup> Admittedly, it is not clear why the difficulty should not subsist for a collection of atoms. Each of them would be a center of perception, but which one would say "I"? Which one would be the seat of the unity of consciousness?<sup>57</sup>

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<sup>56</sup> "The hypothesis of animated atoms would have another great advantage, for their indivisibility could have furnished some reply to the unanswerable objection to which the view of those who maintain that matter can think (that is to say, have feelings and knowledge) is subject. This objection is based on the unity, properly speaking, that ought to belong to thinking beings. For if a thinking substance was unified only in the way a sphere is, it would never see a whole tree at once; it would never feel the pain produced by the blow of a stick" (*HCD*, LEUCIPPUS, Rem. E; *Selec.*: 130). If indivisibility is the key notion, one might think that panpsychic atomism would thus be a sort of monadology, with basic units endowed with perception (not necessarily apperception), except that the monads would be material. Bayle, however, would raise the same sort of objection as Leibniz to the idea of material indivisible beings (see below, p. 25, at fn. 64). Another problem, as one of the referees for this paper points out, is that while Epicurean atoms are physically indivisible, they "consist of serried ranks of minimal parts, and it doesn't seem at all inconceivable that these minimal parts could have distinct feelings and sensations." In this case, Achilles would strike back and Bayle's proposed line of defense should be in fact established at the minimal parts level.

<sup>57</sup> Cf. William James's striking comparison, often quoted in the debate on contemporary panpsychism: take a twelve words sentence, ask twelve persons to each memorize one of these words, put these persons together and ask them to think intently of the word they have learnt, this will yield no consciousness of the whole sentence (1890/1950:160). Under the name of "the combination problem," this issue still plagues contemporary panpsychism, which seems to have in the end to postulate a form of emergence too, namely, the emergence of a unified subject from a multitude of micro-subjects (see Seager 1995, Goff 2006, Coleman 2012 and 2014, and cf. Lucretius II.919–22). This is a very Baylean situation (see below, p. 30, on the notion of "retort"), since emergentist physicalists can claim that panpsychists are hit by the same objection that the latter addressed to them. In the *Continuation des Pensées Diverses*, 67, Bayle seems to be aware of the problem: "Il est pourtant très certain que si l'âme était corporelle, elle serait divisible en plusieurs parties dont chacune serait une âme, et ainsi l'âme

However, perhaps it suffices, for Bayle’s present purpose, that at least one atom can sense or think. What is in question here is defending against the Achilles the very possibility that matter thinks, not explaining the compounds that actually exist.<sup>58</sup>

In any case, Bayle considers that the “Democritean” hypothesis deserves consideration because it shelters the atomists from devastating objections. Moreover, Bayle points out that another problem which used to plague atomism, namely, the non-existence of the void,<sup>59</sup> has been dismissed by the most recent physics.<sup>60</sup> Furthermore, referring to Maimonides’ *Guide of the Perplexed*, he points out that some Arabic philosophers, the “speakers”, that is to say, the *mutakallimun*, have in effect sustained the thesis of sensitive atoms.<sup>61</sup> Finally, he rehabilitates atomism by separating the question of the existence of the atoms from that of their eternity and that of their chance encounters. Once they ruled out that the atoms are uncreated and randomly combined (which would never yield regularity and suitable design in the

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d’un cheval serait très réellement une multitude d’âmes à qui l’unité ne conviendrait que de la manière qu’elle convient à une machine, ou à une confédération d’hommes qui s’entendent bien ensemble” (*OD* III: 288b).

<sup>58</sup> For a more detailed discussion, see Schachter 2002: 254–62.

<sup>59</sup> In his earlier course on physics (*Institutio Philosophiae*, *OD* IV: 275), Bayle was considering the impossibility of vacuum as a deadly objection to atomism.

<sup>60</sup> *HCD*, LEUCIPPUS, main text and Rem. G (*Selec.*: 135–39).

<sup>61</sup> *HCD*, LEUCIPPUS, main text and Rem. F (*Selec.*: 134–35). Cf. *The Guide of the Perplexed*, 1<sup>st</sup> p., chap. 73 (Maimonides 1963: 199). In reality, Maimonides, when exposing the *mutakallimun* theory of atomism, explains that according to them 1) all atoms are similar, but beings differ by superadded “accidents”, such as “color”, “movement”, “knowledge”; 2) these accidents reside in each of the atoms of which the body is composed (in other words, the property of the whole must be found in each of the parts, in accordance with [3d]). Consequently, it is true that for the *mutakallimun* all the atoms of a sensitive being are sensitive, but it is not true that matter is everywhere sensitive: non-sensitive beings have non-sensitive atoms—a thesis that Bayle has rejected by argument 2.



effects),<sup>62</sup> modern philosophers, such as Gassendi, have been able to devise “a very nice system.” In fact, Bayle adds, all modern philosophies, even those which are not strictly speaking atomistic but corpuscularian in a looser sense, try to explain natural processes according to the principles of mechanism, that is to say, through the diverse combinations of parts of matter, by contrast with the useless Aristotelian forms.<sup>63</sup>

Thus, with some alterations, atomism has become a decent theory. It might be, then, that in the article LEUCIPPUS Bayle earnestly suggests to the atomists a third improvement, which would render their philosophy perfect: postulating that each atom is always animated (P1 and P2).

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<sup>62</sup> Cf. *HCD*, OVID, Rem. G (IV: 437b–38a): discussing the Epicurean thesis that stable and viable arrangements of atoms result from an infinity of random encounters (cf. Epicurus, *LH* 73–74, *LP* 89; Lucretius, *DRN* I.1021–34, II.1052–63), Bayle concedes that mechanical associations of atoms could make vortices, differentiate hard and fluid bodies, opaque and transparent ones, etc., and thus constitute *some* rudimentary world. But he denies that a world such as *ours* could obtain, that is to say, “a system of bodies [...] in which there are so many things that persevere for so long in their regularity [and which tend to certain ends, he adds further down], so many animal machines a thousand times more ingenious than those of human art, which necessarily require an intelligent direction.”

<sup>63</sup> *HCD*, LEUCIPPUS, Rem. D: “The terms ‘madman’, ‘dreamer’, ‘visionary’ are appropriate to anybody who claims that the fortuitous meeting of an infinity of corpuscles has produced the world and is the continual cause of generations. But if one applies the same names to those who assert that the diverse combination of atoms form all the bodies we see, one shows clearly that one has no taste and no idea of true physics” (*Selec.*: 127). In practice, everyone admits that matter is constituted, if not of absolute indivisibles, at least of *de facto* undivided corpuscles. This convergence entails that there is in reality little difference between the foundations of Descartes’ and Gassendi’s physics; only the question of the void opposes them: “For since the chimerical qualities that the Schoolmen invented have been banished, the only course left to take was that of admitting insensible particles in matter, whose shape, angles, hooks, motion, and place constitute the particular essence of the bodies that strike our senses [...] [the modern thinkers] reject the eternity of atoms and their fortuitous motion; but by otherwise sticking to the hypothesis of Leucippus, they have built a very beautiful theory. That is what Gassendi has done, who differs from Descartes on the principles of bodies in that he believes in retaining the vacuum” (*Selec.*: 128).

Nevertheless, this would not necessarily mean that Bayle rallies to atomistic panpsychism. In fact, he has serious objections against the idea that any part of matter could be indivisible. He borrows one of Aristotle's classical arguments, namely, that the atoms cannot be strictly speaking indivisible and simple: since they are supposed to hook together, one must be able to distinguish in an atom the part by which it is in contact with another atom from its other parts.<sup>64</sup>

However, building on Bayle's suggestion, it seems that other kinds of materialism, namely, non-atomistic ones (such as Dicaearchus's, or modern corpuscularianism), could derive similar benefits from the move that Bayle recommends to the atomists, and as a result they might have a stronger appeal.

First, non-atomist materialists too would not face the impossible task of showing how thought can emerge from extension, as we already know (argument 4). But there is more. They could also repel the "Achilles of rational psychology", although in a different way than the atomists (since they could not appeal to the indivisibility of atoms). When he was writing the article DICAERCHUS (before 1697), Bayle still believed that the "Achilles" was unobjectionable. This proof, he says, "has always seemed to me very proper to show the impossibility of joining together the three dimensions and thought in the same subject."<sup>65</sup> However, as Todd Ryan has emphasized,<sup>66</sup> Bayle realized, at the latest in the *Réponse aux questions d'un provincial* (1704), that the "Achilles" may not work if, as Locke contends, it is not evident that extension is the essence of matter. In fact, Locke claims, we do not know what matter really is, because a substance is the unknown substrate of some of the

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<sup>64</sup> See *Institutio Philosophiae*, OD IV: 197; HCD, ZENO OF ELEA, Rem. G, *Selec.*: 360.

<sup>65</sup> HCD, DICAERCHUS, Rem. M (*Selec.*: 73). In notes 58 and 59, Bayle refers to his review of Courcillon's and Dangeau's *Quatre Dialogues* in the *Nouvelles de la République des Lettres* (OD I: 110b; cf. OD I: 216a). See also HCD, LEUCIPPUS, Rem. E.

<sup>66</sup> Ryan 2009: 58-60. See also Lennon 2008: 139-75. Locke's hypothesis (*An Essay concerning human understanding* IV.iii.6, II: 193) and the ensuing discussion with Stillingfleet are already presented in HCD, DICAERCHUS, Rem. M., but Bayle does not draw there all its consequences.

properties we know. Therefore, we cannot be sure that thought is incompatible with extension. They may very well have opposite characteristics, but both could belong to the same unknown substrate that is neither one nor the other. In that case, the divisibility which characterizes extension would not have to be attributed to thought nor to the very subject which thinks. Consequently, Locke says, one may hypothesize that God, by virtue of his omnipotence, could make some matter think, that is to say, could add, as a property among others, the property ‘thought’ to a substance that possesses the property ‘extension’. In the same way, a real panpsychist (which Locke is not)<sup>67</sup> could contend that matter is a substrate that eternally carries the properties of extension and thought, which are not reducible one to the other, or to matter. As a result, the divisibility of extension would not affect thought and the “Achilles” would be repelled.

Last but not least, it seems to me that the panpsychic hypothesis could bring another major improvement to materialism, namely, a solution to the problem of “blind causality”. A usual objection to materialism, as we just saw, is that complex, organized effects require a causal agent capable of reflection and intention. Moreover, in the second half of the 17<sup>th</sup> century, Geulincx (and, to a certain extent,

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<sup>67</sup> Locke does not believe that matter might *always* think, as is clear in his proof of the necessary existence of an immaterial and eternal being (*Essay*, IV.x.10, II: 314–15). Matter, he says, cannot *produce* thought; but there is *de facto* thought in the universe; therefore, if matter was the first being, one would have to admit that thought is “an eternal property inseparable from matter and each of its particles” (that would be to adopt panpsychism). But—it is there that Locke rejects this idea—, as matter is not one and as there are in fact a multitude of material entities, this would imply that there is a multitude of beings which are each finite and eternally endowed with thought. However, this crowd of beings independent each from the other “would never be able to produce the order, harmony and beauty that we find in Nature.” Therefore, the first being cannot be matter. Hence, it is clear that in his objection against the incompatibility between extension and thought, Locke does not suppose that matter, whatever it is, could produce thought or always possess thought by nature. He only hypothesizes that God could *add* thought to a substance that already has the property of being extended.

Malebranche) imposed on causality an epistemic condition: in order to qualify as the cause of an effect, a thing must know how to bring about this effect.<sup>68</sup> In agreement with them, Bayle often emphasizes that if secondary causes are to be efficient causes, they should be cognizant of the way of producing their effects. This condition would be fulfilled in panpsychic materialism. If matter is endowed with thought, it can produce complex effects such as living beings.

All that is needed to reap these benefits is to suppose that the two properties of thought and extension, independent from each other, eternally coexist in the same subject (without, therefore, thought being derived from extension). This move is possible if one adopts an ontology that allows a plurality of attributes in the same substance, much as Spinoza or Locke did each in their own fashion.<sup>69</sup>

### *Stratonism and panpsychism*

However, such a straightforward assumption may seem quite arbitrary. What gives a materialist the right to postulate that matter originally has the property of thought? Well, Bayle himself might provide some justifications for that claim. Referring to the genuine, ancient atomistic position, for which atoms are uncreated and eternal, Bayle concludes Remark F of his article EPICURUS in an ambiguous manner:

Moreover, it is not more absurd to suppose that atoms are essentially animated, than to suppose they exist and move of themselves.<sup>70</sup>

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<sup>68</sup> See Geulincx, *Metaphysica vera*, Part I, Quinta Scientia (II: 150-51). Geulincx epitomizes the epistemic condition by the principle: “*quod nescis quomodo fiat, id non facis*” (“that which you do not know how to do, you do not bring it about”) (cf. Nadler 1999: 335–45).

<sup>69</sup> That is the move Galen Strawson makes, despite his professed admiration for Descartes, in Strawson 2006a: 8 (“If this seems a little colourful then it’s time to read Locke on substance again”) and 2006b: 238–42, where he explicitly turns to Spinoza. Cf. below fn. 94.

<sup>70</sup> II: 779b, circa n. 71, modified (the English translation has transformed into a question the assertion of the original French text!).

What does this statement mean? Should we read this sentence as an antiphrasis? Does it signify that it is no more absurd, but also not *less* absurd, to ascribe a soul to atoms than to imagine them in eternal movement? Or does it mean, rather, that it is legitimate to grant thought to the atoms, after their non-created existence is presupposed? In other words, according to this second reading, the atomists make the big leap when they postulate that atoms possess, by nature, the properties of existence and motion, and it would only be a small leap further to claim that they possess the property of thinking as well.

Admittedly, the mere fact that the second assumption is not more arbitrary than the first one would be a poor reason for endorsing it. Yet, we should take a closer look at this possible reading of Bayle's sentence. As a matter of fact, to suppose that the atoms exist by themselves, that is to say, without a cause, is tantamount to affirming that they have in the first place the same property of being *a se* that God has in Christian theology. This property of *aseitas* (this is not the word that Bayle uses here, but the idea is in effect present) should draw our attention, because the thrust of the famous Stratonician retort, in the *Continuation des Pensées Diverses*, hinges on that notion.<sup>71</sup>

In the *Continuation*, Bayle attempts to demonstrate that rational theology is not able to refute atheism. For that purpose, he imagines a dialogue between, first, theistic philosophers and disciples of Strato of Lampsacus, later respectively replaced by Christian theologians and more or less fictional Chinese philosophers to whom Bayle attributes the same staunch materialist stance as the Stratonicians defend. It is Cudworth who chose the figure of Strato to epitomize the materialist-atheistic view of uncreated matter which possesses the dynamic resources necessary to engender all living beings, including thinking ones (Cudworth also forged the term "hylozoism" to

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<sup>71</sup> On this retort, which is crucial for the overall interpretation of Bayle's thought, see Mori 1999: 133–49, 217–36, and Solère 2004: 129–70.

summarize this view).<sup>72</sup> Bayle is happy to use the label “Stratonician” to tag this position, but, contrary to Cudworth, he thinks that the Stratonicians, or their modern version, the Chinese philosophers, are able to resist their opponents.

The theologians’ strongest argument is the following. Matter, as hypothesized by the Stratonicians, is not absolutely perfect, since it does not have every possible property, according to their own terms.<sup>73</sup> But a being that exists by itself cannot be imperfect, by virtue of the principle that nothing is limited except by an external agent. There is no such thing as self-limitation because there must be a reason for every state of affairs, and the only reason for a being having these or those limits is that its cause has shaped it in this or that way. Therefore, a being that has no cause cannot be limited.<sup>74</sup> In other words, a being that exists by itself is necessarily infinite in all respects, and, conversely, a being that is limited cannot be *a se*.

The Stratonicians cannot but concede the point. They have to admit that they are unable to explain why their Nature, which exists by itself, is limited and imperfect. They can only say state that it is just as it is, for no other reason. But this type of response: “such is the nature of things”, is “the last asylum of ignorance”, as Bayle says, since it appeals to an inexplicable state of affairs.

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<sup>72</sup> *The True Intellectual System of the Universe*, book I, chap. 3 (I: 233–41).

<sup>73</sup> For instance, it is not impassible, omniscient, wise, etc.

<sup>74</sup> One could refer also to Descartes arguing that if I were *a me*, I would have given myself all the perfections of which I have an idea, and thus I would be God, because it is “much more difficult”, that is, requires more power, “to emerge from nothingness”, that is, to make oneself exist, than to give to oneself, once existing, all the remaining perfections (*Meditationes*, III, AT VII: 48). “Si a se est, ergo Deus est: quod enim a se est, omnia sibi ipsi facile dederit”, Caterus aptly summarizes, before recalling the scholastic origins of the no self-limitation doctrine: “Scio me aliquando ita Suarem audivisse: omnis limitatio est a causâ; ideo enim limitata finitaque res est, vel quia causa majus perfectiusque dare nihil potuit, aut quia non voluit; si ergo aliquid a se est, et non a causâ, profecto illimitatum est et infinitum” (*Primae Objectiones*, AT VII: 94–95).

Yet, the Stratonicians are poised to offer a retort to the theologians' objection. Let me recall first that the notion of 'retort' (*antistrophe*, in ancient rhetoric) has a technical sense. You retort when you prove that your opponent is plagued by the same difficulty he or she points out in your position. Your move, therefore, is merely a negative one. You do not solve the difficulty objected to you; yet, you obtain a tie game. You are entitled not to modify your position, given that the opponent's is no better.

In retort, then, the Stratonicians just have to ask the theologians why God can do certain things and not other things. As a matter of fact, it is commonly agreed, in Christian theology, that that which contains an intrinsic contradiction, such as a square circle, cannot be done, even by God. Therefore, God's power is limited to what is by non-impossible essences, and the theologians are obliged to concede that there is no reason for that state of affairs, except that essences are as they are: some are possible, others are not. In other words, they can only invoke, exactly as the Stratonicians, the nature of things.<sup>75</sup>

Thus, since the theologians take the liberty to affirm that God, who exists by himself, exists with such and such limits, the Stratonicians are entitled to require equality of treatment and claim the right to suppose that their matter is imperfect and nevertheless eternal, uncreated, and endowed with certain properties—the properties that are necessary to produce the variety of beings and the order of the world.

Now, panpsychists could make the same claim. True, the "Democritean" hypothesis is not exactly identical to the Stratonician one, since it presupposes the presence of mind in matter *ab initio*, while a strict, reductionist materialist theory, as Stratonism is supposed to be, would have to show how the mind is a *product* of matter (which is,

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<sup>75</sup> Bayle judiciously remarks that only Descartes, with the so-called "creation of eternal truths," could escape the Stratonician retort (*Continuation des Pensées Diverses*, cxiv, *OD* III: 347–48). However, Bayle, like many of his contemporaries, did not find it acceptable that God freely decides which axioms of reason are true, which essences are possible, and so forth.

for Bayle, an unfeasible task, as we know).<sup>76</sup> Yet, Strato could inspire Democritus, if I dare say so. That is, a defense of panpsychism might operate along the same lines as the Stratonician retort. A non-Stratonician materialist would be entitled to say: I too have the right to suppose that matter not only exists by itself, although imperfect, but also is endowed with certain characteristics (and not with some others), among which is the property of thinking.

Such, then, could be the meaning of Bayle's sentence that we are scrutinizing: it is not more absurd for materialists to postulate that matter by nature thinks than to postulate that it is *a se*, because they are as much entitled to endorse both these assumptions as theologians are entitled to affirm that God's power has certain limits *and* that God has no cause. We may wonder, therefore, if Bayle is not hinting at one of those 'tie games' he is fond of—a tie game, that is, between panpsychism and theism.

#### *Descartes versus Democritus*

Yet, is panpsychism really viable, to Bayle's mind? The end of Remark E, in the article LEUCIPPUS, allows doubt, I believe, that he considers this solution as a real possibility. After having once more advised the atomists to adopt the "Democritean" hypothesis, Bayle reduces this assumption to the same degree of probability, or rather, improbability, as the very first assumption in which the atomists have indulged, namely, the *aseitas* of atoms:

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<sup>76</sup> Todd Ryan makes a similar distinction between "Weak Materialism" and "Strong Materialism" (Ryan 2009: 34). As we saw earlier, one can accept the possibility that extension and thought coexist in the same substance without admitting that thought could be produced from matter. This is Locke's position (by contrast with Hobbes, for instance). For him, as we saw, it is necessary that God creates thought, even though thought is implemented in material beings (*Essay*, IV.x.10, II: 313). As a result, the properties of thought are not explicable in terms of corpuscles and movement, even if thought is, along with extension, the property of a material thing.



They had no less right to suppose atoms animated than they had to suppose that they were uncreated, possessing the attribute of the power of self-motion.<sup>77</sup>

They had no less right, but one can say as well that they had no more right to do so. In effect, Bayle is here more explicit:

It is as difficult to conceive of this power [of self-motion] in an atom as to conceive of its having sensation. Extension and solidity make up the whole nature of an atom according to our ideas of it. The power of self-motion is not contained in that idea. It is something that our ideas find alien and ‘extrinsic’ to bodies and extension, in the same way that knowledge does not seem to belong to them.<sup>78</sup>

Bayle unquestionably speaks here as a Cartesian. By means of clear and distinct ideas, he apperceives, as properties of a body, nothing other than extension and impenetrability, and these properties make the essence of bodies. A motive force inherent in matter would be a hidden potency comparable, and indeed compared by Bayle, to the moving force attributed to the soul by Aristotle. The same goes for thought.

As we saw earlier, Bayle’s Cartesianism is also manifest in the article DICAERCHUS, Remark L (argument 4, above). After having affirmed that, up to now, no one has dared to say that “to make a substance pass from the absence of all thought to actual thought, it sufficed to move it”, Bayle additionally insists: “And even if some people should boast that they clearly conceived this, they do not deserve to be believed.”<sup>79</sup> To silence these braggarts, one simply has to point, says Bayle, to a certain passage of in Aristotle’s *Metaphysics*. This passage is none other than the one formulating the principle of non-contradiction: the same thing cannot at once be and not be.<sup>80</sup> This comes down to adding a new, quintessentially Cartesian argument by which Bayle attempts to reduce to outright nonsense, not only the claim that matter

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<sup>77</sup> HCD, LEUCIPPUS, Rem. E (*Selec.*: 133).

<sup>78</sup> HCD, LEUCIPPUS, Rem. E (*Selec.*: 133–34).

<sup>79</sup> HCD, DICAERCHUS, Rem. L (*Selec.*: 71).

<sup>80</sup> Cf. *Metaphysics* IV.3, 1005b 17–25.

produces thought, but also the weaker claim that one can clearly conceive that an extended thing thinks:

[5] To suppose that mind and matter coexist in the same subject entails a contradiction.

This is tantamount, Bayle contends, to affirming that the same thing simultaneously possesses and does not possess a certain set of properties.<sup>81</sup> In fact, the characteristics of matter and thought are contradictory to each other and mutually exclusive: occupying space and being divisible on the one hand, not occupying any space and not being divisible on the other hand. Therefore, the two sets of characteristics cannot be joined in the same substance. They can only be found in numerically distinct subjects.<sup>82</sup>

This implies that Bayle necessarily rejects the panpsychic hypothesis of the two properties of thought and extension coexisting in a material substrate. It implies also that Bayle rejects Locke's hypothesis of God implementing thought in a material being. If the notion of thinking matter is intrinsically contradictory, thinking matter is therefore an *impossibility*. This conclusion exceeds the *incomprehensibility* that

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<sup>81</sup> Bayle, *Institutio Philosophiae*, OD IV: 455–56. Cf. Descartes, *Sixth Meditation*, AT VII: 85–86; CSM II: 59.

<sup>82</sup> “[...] And thus, we ought to conclude that thought is distinct from all modifications of body of which we have knowledge since it is distinct from all figure and all change of situation” (*HCD*, DICAERCHUS, Rem. L; *Selec.*: 71). Bayle gives the following example: it is absurd “to maintain that there are two kinds of color, one which is the object of sight and nothing more, the other the object of sight and of smell also”, and “it is still more absurd to maintain that there are two kinds of roundness, one kind consisting merely in the parts of a body's circumference being equidistant from the center; and the other kind being, besides this, also an act whereby the round body perceives that it exists and sees several other bodies around it [...] What I have said of roundness with regard to vision may be applied to all sorts of figures with regards to all sorts of thoughts” (*Selec.*: 71). Cf. note 53 in the same article: to suppose with Dicaearchus that the harmony of material elements produce thought is as absurd as “to suppose that a certain concert of music should be a sound that is conscious of itself, and should know the neighboring objects” (II: 661b; not translated in *Selec.*).

Locke acknowledges, but that he judges surmountable by God's omnipotence.<sup>83</sup> That which is incomprehensible for us is not necessarily impossible (in other words, God can do things that we do not understand but that are possible), whereas that which plainly contains a contradiction is absolutely impossible, even for God.<sup>84</sup> Therefore, Locke argues, in order to exclude the possibility of thinking matter, one ought to prove positively that this idea contains a contradiction. But this is exactly Bayle's point: he finds an evident contradiction in the notion of thinking matter; thence, even God cannot make matter think.<sup>85</sup>

Surely, Locke would defend his view by saying that extension is not the essence of matter, as we saw earlier. That is why, for him, extension and thought do not exclude each other. These two properties could coexist in a substance of which we know not the essence. In other words, the duality of properties that are not reducible one to the other does not necessarily imply a duality of substances. However, Bayle is not willing to allow this possibility, even in such a late work as the *Réponse aux Questions d'un Provincial*:

[...] we know that the essential attributes of a substance are not numerically different, and thus we may not believe that it is possible that matter relates to space by one attribute, and to thought by another.<sup>86</sup>

The fundamental reason for Bayle's disagreement with Locke, then, is that Bayle unshakably adheres to two Cartesian theses:

[6] There is only one principal attribute per substance, and this attribute constitutes the essence of the substance.<sup>87</sup>

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<sup>83</sup> I agree with Ryan 2009: 35–36 that if Bayle has raised, by anticipation, Locke's hypothesis in his early objections to Poiret (*OD IV*: 150b–51a), he has, however, subsequently changed his mind.

<sup>84</sup> Cf. Thomas Aquinas, *Summa Theologiae*, I<sup>a</sup> pars, q. 25, art. 3.

<sup>85</sup> Cf. Bayle's letter to Shaftesbury of Nov. 23, 1699 (*OD IV*: 786).

<sup>86</sup> *Réponse aux Questions d'un Provincial*, III.15 (*OD III*: 942b).

[7] Extension is the principal attribute of matter, that is to say, is the essence of matter.<sup>88</sup>

This is why Bayle maintains that there would be a contradiction in imagining something that simultaneously possesses and does not possess the characters of extension. Since extension constitutes the essence of matter, a material thing cannot have properties which are incompatible with extension.<sup>89</sup> This is exactly what Descartes replied to Regius, who contended that:

... if we are to follow some philosophers, who hold that extension and thought are attributes which are present in certain substances, as in subjects, then since these attributes are not opposites but merely different, there is no reason why the mind should not be a sort of attribute

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<sup>87</sup> See Descartes, *Principia philosophiae*, I.53, AT VIII: 25, CSM I: 210–11. Cf. Bayle, *Nouvelles Lettres*, I.9: “L’essence d’une chose est un attribut qui étant ôté, fait cesser d’être cette chose, quand même tous les autres attributs demeureraient, et qui étant posé, fait être la chose, quand même tous les autres attributs seraient ôtés” (OD II: 222b); *Réponse aux Questions d’un Provincial*, I.24, speaking of the soul: “une substance unique, parfaitement simple, et indivisible, et dont tous les attributs sont réellement *identifiés* avec elle, et les uns avec les autres” (OD III: 543a).

<sup>88</sup> On the importance of these Cartesian theses in Bayle’s thought, see Ryan 2009: 11–22.

<sup>89</sup> Consequently, Bayle can maintain the validity of the “Achilles of rational psychology”. Moreover, it seems to me that what Bayle adds in Remark C of the article DICAERCHUS, after the rejection of the modal objection, could also constitute a possible line of defense against the Lockean conception of matter. The system he refutes, Bayle explains, may well contend that the mode ‘thought’ (*sentiment*) is founded “on some attribute of matter other than the three dimensions, and unknown to our mind” (*Selec.*: 67), but this will be to no avail. The modifications of this attribute must conform to the same requirement of continuity and homogeneity as, for example, modes of extension such as figures. A mode must be replaced by another of the same nature (3c). Even if the essence of matter is not known to us, whoever hypothesizes that matter can think must also maintain that matter has always been thinking and will always remain thinking under one form or another. But, as we saw earlier (n. 51), Locke would not accept the consequence that matter *always* thinks. Furthermore, anyone who would accept this consequence would be also committed to accept consequences such as thought in cadavers.

co-existing with extension in the same subject, though the one attribute is not included in the concept of the other.<sup>90</sup>

First, Descartes answers, Regius fails to distinguish modes from attributes (in the sense that Descartes gives to these terms).<sup>91</sup> An attribute is not in a substance as if the latter were a subject that is different from this attribute. The principal (or essential, as Bayle says) attribute constitutes the essence of the substance and is inseparable from it, contrary to modes. Second, thought and extension are not just different from each other, they are opposites. This is because they each constitute the nature of a substance, and a simple substance cannot have two natures. If a simple substance *is* X (its essence), it is not-Y (another essence), and if it *is* Y, it is not-X. So a substance cannot be X *and* Y, that is, X and not-X. In the case of principal attributes, difference necessarily means contrariety and mutual exclusion.<sup>92</sup> And we know that a material substance is a simple subject, because, upon inspection, all the properties we notice in it are reducible to extension and are mere modifications of it.<sup>93</sup> Therefore, extension is the essence of that substance, and there is no room for any other essential attribute.<sup>94</sup>

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<sup>90</sup> *Notae in programma*, AT VIII-2: 342–43, CSM I: 294–95.

<sup>91</sup> AT VIII-2: 348–49, CSM I: 297–98.

<sup>92</sup> AT VIII-2: 349–350, CSM I: 298. Cf. Bayle, *Réponse aux Questions d'un Provincial*, I.24 : “Leurs [the Cartesians’] définitions du corps, ou de la matière, et de l’esprit, sont, que la matière est une substance étendue, et que l’esprit est une substance qui pense. *C’est dire* que la pensée est l’essence de tous les esprits, et *qu’aucun esprit ne peut avoir de l’étendue* ; que l’étendue est l’essence de tous les corps, et *qu’aucun corps ne peut penser*” (OD III : 542b).

<sup>93</sup> AT VIII-2: 350–51, CSM I: 299. Cf. Bayle’s remarks above, p. 19–20.

<sup>94</sup> Cf. Descartes, *Sixth Meditation*, AT VII: 78; CSM II: 54. I do not see any reason to suspect Descartes of duplicity in his answer to Regius, as Strawson 2006b: 214–15 does. Strawson sides with Descartes regarding the certitude and transparency of the “experiential,” but, logically, he has to deny that we have a clear and distinct idea of what the “physical” is, in order to be able to ascribe to the material “stuff” mental properties (Strawson 2006a: 4–5). This is precluded—which makes panpsychism

### *Possibility and compatibility*

Further, Bayle rejects Locke's resort to God's omnipotence on the grounds that, should God decide to exert his power, he would nevertheless do so within the limits of certain conditions. Locke's hypothesis, i.e. matter receiving the faculty of thinking from God, would be a case of what Scholastics call *potentia obedientialis*: because they are created, all things remain in the dependence of their creator, have a "disposition to obedience", and therefore can be reshaped at will by God, which means that God always can make creatures have properties it is not their nature to possess, or cause effects other than those their natural potencies can produce. But for Bayle God's actions, even those exerted in virtue of his absolute power, are always met by a corresponding possibility on the side of the creatures.<sup>95</sup> As a result, a miracle is never against nature.<sup>96</sup> Indeed, Bayle criticizes the distinction between natural potency and "obediential" potency on the ground that "natural" means: according to a certain law of nature that has been freely chosen by God among other possible laws that were no less convenient for God to create a world and no less suitable to the respective essences of the creatures. So when God decides to break a law of nature, he does not act in a way that is less in phase with the essences of

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impossible—if, as Descartes and Bayle believe, we can be certain that extension (or anything else that is incompatible with thought) constitutes the essence of matter.

<sup>95</sup> Cf. *RQP* II.180: "l'on doit remarquer qu'une faculté surnaturelle n'a pas absolument parlant moins de proportion avec l'essence, ou avec la nature des Créatures que les facultés qu'on appelle naturelles. Il ne faut pas que Dieu fasse de plus grands efforts pour communiquer ce que l'on nomme surnaturel, & miraculeux, que pour agir selon le train ordinaire de la Nature" (*OD* III : 883, note *p*).

<sup>96</sup> Cf. *Réponse aux Questions d'un Provincial*, I.xxv (*OD* III: 545a): "Among the laws or the eternal and immutable truths, there is none more certain than the following: nothing happens against the essence of things." See Ryan 2009: 53–58.

creatures.<sup>97</sup> In fact, Bayle affirms, the nature of a stone does not *per se* entail the power of breaking a glass when thrown at it any more than it entails the power to convert water into blood. The causality relation is not of itself a necessary connection, because it does not depend on the intrinsic natures of the cause and the effect, but on the laws of motion that God has chosen (occasionalist insights evidently underpin Bayle's argument).<sup>98</sup>

However, for Bayle, shattering a glass and changing water into blood pertain to the same basic kind of reality and explanation: fundamentally, it is all a question of how parts of extension are moved around. This is why one of these effects is not more *per se* natural than the other and why God in none of these cases infringes upon the nature of a creature. On the other hand, a philosopher, Bayle says, should never affirm anything that is not distinctly conceivable. We distinctly see that corporeal substances are only capable of receiving an impulse and of the consequences that follow: changes in shape, size, position, etc. On the contrary, one cannot distinctly conceive how, even by God's intervention, a stone could be made capable of an cognitive act.<sup>99</sup> For God miraculously to endow matter with thought, as Locke contends is possible, matter would have to be *capable* of receiving thought.<sup>100</sup> But matter having this capacity is, according to Bayle, strictly impossible, given the contradiction between the properties of the mind and the properties of extension—a contradiction that God himself cannot override.

Furthermore, when Locke states that we are not certain whether thought could not in fact be compatible with matter, he does not tell us what the meaning of “being

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<sup>97</sup> *Institutio Philosophiae*, OD IV: 472a. Cf. *Réponse aux Questions d'un Provincial*, I.25, OD III : 545b.

<sup>98</sup> *Institutio Philosophiae*, OD IV: 471b–72a.

<sup>99</sup> *Institutio Philosophiae*, OD IV: 471b.

<sup>100</sup> Cf. *HCD*, JUPITER, Rem. G: “This difficulty is not overcome by contending that matter only becomes something that thinks through a special gift of God. This would not prevent it from being true that its nature was susceptible of thought [...]” (*Selec.*: 115).

compatible” is. Bayle is much more specific. *Even* granted that there is no obvious contradiction, it does not suffice to ask: “why not?” and then float the gratuitous hypothesis that a property could be conjoined with a subject whose essence is unknown. The compatible property cannot just be arbitrarily juxtaposed with this essence. For a property to be attributed to a subject, there is a more restrictive condition: one ought to show that the property in question and the subject that is supposed to receive it conform to each other. In Bayle’s own words:

[8] That which can be attributed<sup>101</sup> to something must be based on the essence of that thing and presuppose this essence.<sup>102</sup>

On the other hand, when we observe the lack of such connection, we may be certain that we are dealing with two different natures: “we conceive that two beings belong to different species when the essential attributes of one cannot be conceived to agree

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<sup>101</sup> “*Convenit*” in the Latin text of the *Institutio*, “*convient*” in the French translation.

<sup>102</sup> *Institutio Philosophiae*, OD IV: 455b. See *Continuation des Pensées Diverses*, 21 : “Si [as a counterfactual] la matière peut recevoir de Dieu la force motrice, il y a une compatibilité naturelle entre la matière et la force motrice. On peut donc supposer également que la matière existe par elle-même, et que la vertu motrice lui est propre essentiellement” (OD III: 217a). Cf. Leibniz, *Nouveaux Essais sur l’Entendement*, Preface, GP V: 59: “Et toutes les fois qu’on trouve quelque qualité dans un sujet, on doit croire que si on entendait la nature de ce sujet et de cette qualité, on concevrait comment cette qualité en peut résulter. Ainsi, dans l’ordre de la nature (les miracles mis à part), il n’est pas arbitraire à Dieu de donner indifféremment aux substances telles ou telles qualités; et il ne leur en donnera jamais que celles qui leur seront naturelles, c’est-à-dire qui pourront être dérivées de leur nature comme des modifications explicables”. See also Letter to lady Masham, GP III: 355: “Il est vrai que l’illustre Mons. Locke a soutenu [...] que Dieu pourrait donner à la matière la force de penser, parce qu’il peut faire ce qui passe tout ce que nous pouvons concevoir: mais ce serait donc par un miracle continuel que la matière penserait, rien étant dans la matière en elle-même, c’est à dire dans l’étendue et impénétrabilité, d’où la pensée pourrait être déduite, ou sur quoi elle pourrait être fondée.” Thus, in fact Bayle extends to miracles the requirement that Leibniz here sets for ordinary circumstances.



with the other.”<sup>103</sup> Bayle states that, for example, qualities such as being colored, round, translucent “are founded on extension, and *presuppose* it,”<sup>104</sup> inasmuch as they cannot be conceived but as modes of extension. This is why they can be attributed to what has extension. That is not the case for matter with regard to thought, or for thought with regard to matter: “extension, figure and divisibility are not founded on the essence of the soul, nor do they presuppose it.”<sup>105</sup> Then, by virtue of [8], Bayle can conclude: “therefore, they cannot be attributed to the soul.”<sup>106</sup> Conversely, thought modifications such as affirming, negating, wanting, reasoning, do not logically presuppose extension. Therefore, they cannot be attributed to matter. There must be a reciprocal correspondence between the substance and its properties. Absent this correspondence, no conjunction can be brought about, even supernaturally, because there is no foundation in the subject for receiving the property. As a result, never can thought be conjoined with matter in a simple substance.

Thus, beyond the discussion with Locke, Bayle’s position against materialism in general is supported by an argument which is, in fact, the reverse of the argument that should steer materialists towards panpsychism. To be consistent, materialists should say: since certain beings obviously think, and nevertheless are merely material, and since matter is everywhere the same, the whole of matter thinks (argument 2, above). On the contrary, Bayle contends: since there are beings that do not think, “it is certain that the figure and extension” that we find in these beings “do not suppose the faculty of thinking”<sup>107</sup>, and thence the latter is not attributable to them. Conversely, since God is a thinking being, there is at least one case where it is clear that the faculty of thought does not suppose extension, from which Bayle can conclude that thought is

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<sup>103</sup> *OD IV*: 455b.

<sup>104</sup> *OD IV*: 455b (emphasis mine).

<sup>105</sup> *OD IV*: 455b.

<sup>106</sup> *OD IV*: 455b.

<sup>107</sup> *OD IV*: 456a.

never attributable to things that are extended, because if it were attributable, it would conceptually imply extension, and therefore would always require it.

Consequently, if materialists can attribute thought to matter, it is only because *ex falso sequitur quodlibet*.<sup>108</sup> From the moment one allows the existence of hidden potentialities or properties in bodies, why not grant also that of feeling and thought? But this does not make them intelligible properties, that is to say, compatible with the notion of matter.<sup>109</sup>

### *The Baylean strategy*

To conclude, I think it safe to say that when advising the materialists to postulate that matter always thinks, Bayle does not believe he is turning materialism into a flawless system. He is too much of a Cartesian to believe that materialism, even panpsychist materialism, is an option. Consequently, it is wrong to see Bayle as a forerunner of eighteenth century materialism. *A contrario*, it is clear which sort of background theory panpsychists must have: a metaphysics that allows several essential attributes for a simple substance, and an epistemology that shows we have not an exhaustive knowledge of what matter is.

But, then, what do Bayle's reflections aim at? Why does he make this suggestion to the materialists? In order to understand this, we must place Bayle's reflections in the context of his usual strategy when addressing philosophical issues.

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<sup>108</sup> See also the parallel considerations of *HCD*, JUPITER, Rem. G: "An absurdity once set forth leads to many others. Err only about the nature of the human soul; imagine falsely that it is not a substance distinct from extension; this error is capable of making you believe there are gods who first sprung from fermentation and who afterwards multiplied through marriage" (*Selec.*: 114).

<sup>109</sup> So the requirement of intelligibility that drives Strawson's anti-emergentist argument (see above, fn. 23) could be turned against him by Bayle: it is unintelligible that thought co-exist with extension in the essence of a simple substance.

First, Bayle likes to pose as an arbiter of the *internal* coherence of systems. If one chooses to be a materialist, one ought to uphold certain premises, Bayle explains, so as to avoid some obvious difficulties. However, when Bayle points out what a philosopher or theologian could and should have said, this does not mean that he comes round to their opinion. Even when corrected or complemented according to his suggestions, a theory may remain exposed to objections which Bayle deems insurmountable, such as, in the present case, the mutual incompatibility of thought and extension. Pure matter cannot engender thought. Materialism, then, has to be a panpsychism. But, in its turn, panpsychism stumbles against an *external* objection, namely, the impossibility that a substance has several principal attributes. Matter and thought cannot coexist in the same being; such is the bottom line for Bayle.

As Bayle's piece of advice leads to no viable solution, we may uphold our first impression, namely, that Bayle only wants to show the unbearably high price that materialists have to pay for being consistent. This matches another pattern of Bayle's usual strategy, which is to highlight the unwanted consequences of the theories he scrutinizes. Some side effects of panpsychism, such as thought in corpses, are not easy to come to terms with. Bayle's intention, beyond his posture of arbiter, is undoubtedly to contrast these odd consequences with the simplicity of Cartesian dualism.

However, in line with the "skeptical" interpretation of his philosophy that I follow,<sup>110</sup> Bayle systematically points out the aporias of reason. For him, no philosophical system is satisfactory on all points. Accordingly, Bayle does not unconditionally support Cartesianism either. Although he endorses the idea that human beings have an immaterial soul, he highlights in the article EPICURUS the

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<sup>110</sup> This interpretation, however, is not Popkin's. That is to say, I do not believe that Bayle is a Pyrrhonian "superskeptic" (see Popkin 2003: 283–302). Rather, with Maia Neto 1999 and Lennon 2002, I take him to be an "Academic" skeptic. For him, there are local, limited, but indubitable truths that we can discover in logic, metaphysics, physics and ethics. But Bayle questions the ability of reason to build systems.

problems that Cartesianism faces. Animal life and animal sensibility too must be accounted for. Within the framework of Cartesian dualism, only two solutions are possible. One can either, as Descartes himself, deny animals any psyche and reduce them to being mere machines; or, one can attribute to them minds, but these minds must, for the reasons we have just seen, be distinct from their bodies, that is to say, be “immaterial souls” similar to those of human beings.<sup>111</sup> Descartes’s radical solution leaves Bayle extremely doubtful.<sup>112</sup> The second solution is a “dangerous” hypothesis. As it grants animals a sensibility and therefore the experience of pain, it will fuel doubts about the Creator’s goodness: why do animals suffer?<sup>113</sup>

Thus, it turns out that Cartesian dualism faces a formidable problem. However, this does not mean that materialism is in a better position regarding the issue of animal life. We saw what Bayle thinks of the “Democritean” hypothesis.<sup>114</sup> As to non-panpsychist theories, the difficulty that Epicurism encounters with its non-animated atoms (argument 1) affects all non-atomist philosophies that try to explain how an animal psyche comes from the composition of non-sensitive principles.<sup>115</sup> Such is the

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<sup>111</sup> *HCD*, EPICURUS, Rem. F (II: 779b, circa n. 70). One may also imagine, as the Ancients did, a “Soul of the world”, that is, a unique, superior, universal psychic principle which does not depend on matter, and in which each living being (plant or animal) participates (cf. *HCD*, RORARIUS, Rem. D, IV: 903a). But Bayle finds that this hypothesis hardly deserves discussion.

<sup>112</sup> *HCD*, RORARIUS, rem B: “Everyone knows how difficult it is to explain how pure machines can accomplish what animals do” (*Selec.*: 214–15). Bayle is even more affirmative in *Réponse aux Questions d’un Provincial*, III.xv: if you rally Descartes on that count, “everyone will boo you, and you will realize sooner or later that you have put out an unsustainable hypothesis” (*OD* III: 940a).

<sup>113</sup> Cf. *HCD*, RORARIUS, Rem. C (*Selec.*: 217–21). According to the theological common place of Bayle’s days, physical evil is a consequence of the original sin. But animals had nothing to do with this offense.

<sup>114</sup> According to *HCD*, RORARIUS, Rem. D (citing Stobaeus through Vossius), Democritus thought that every animal is endowed with sensibility and reason (IV: 903a, circa n. 23).

<sup>115</sup> “[...] all the philosophers who acknowledge that the principles of mixed bodies are deprived of sense, lay themselves open as much as Epicurus to the same difficulty” (*HCD*, EPICURUS, Rem. F, II:

case with the four Aristotelian elements. They may associate each to the others in the so-called “mixtures”, but in order to confer to these compounds the properties of life and of sensitivity, the Aristotelians have to suppose that, to the mixtures, is added a substantial form called “material soul” or animal soul (as opposed to the human, rational soul, which is not reducible to the function of substantial form organizing the body). But, Bayle remarks, “it is a vain subterfuge that is, no less than the epicurean atoms, devastated by Galen’s objection.”<sup>116</sup> If one element is not apt to sense (that is to say, to receive a certain soul), there is no reason that a compound of elements should be more capable of doing so.

Thus, all the explanations of consciousness that have been submitted so far are exposed to objections. There are, for Bayle, some bits and pieces, or ‘islets,’ of indubitable truth, such as the certitude that mind cannot be reduced to anything material, but these scarce truths do not solve all the difficulties and reason is perpetually assailed by doubts and aporias.<sup>117</sup>

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779b, circa n. 70). This is in fact a retort that, according to Bayle, atomists such as Lucretius and Gassendi can make to Aristotelians. The retort is in effect formulated by Gassendi (*Syntagma philosophiae*, II: 343a–b and II: 347–48).

<sup>116</sup> *HCD*, EPICURUS, Rem. F (II: 779b, circa n. 71).

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## ABBREVIATIONS

- AT Descartes, R. 1996. *Œuvres de Descartes*. 13 vol. Eds. Ch. Adam / P. Tannery – P. Costabel / B. Rochot. Paris.
- CSM Descartes, R. 1985. *The Philosophical Writings of Descartes*. 2 vol. Transl. J. Cottingham / R. Stoothoff / D. Murdoch. Cambridge.
- DRN Lucretius. 1992. *De rerum natura*. Eds. W.H.D. Rouse / M. F. Smith. Cambridge (MA).
- GP Leibniz, G. W. 1875-90 (repr. 1960). *Die Philosophischen Schriften*. 7 vol. Ed. C. Gerhardt. Berlin (Hildesheim / New York).
- LH Epicurus. 1926 (repr. 1970). *Letter to Herodotus*. In: *Epicurus. The Extant Remains*. Ed. C. Bailey. Oxford (Hildesheim / New York).
- LP Epicurus. 1926 (repr. 1970). *Letter to Pythocles*. In: *Epicurus. The Extant Remains*. Ed. C. Bailey. Oxford (Hildesheim / New York).
- HDC Bayle, P. 1734-38. *Historical and Critical Dictionary*. 5 vol. London.
- OD Bayle, P. 1727-31 (repr. 1964) *Œuvres Diverses*. 4 vol. La Haye (Hildesheim / New York).
- Selec. Bayle, P. 1965. *Historical and Critical Dictionary. Selections*. Transl. R. H. Popkin. Indianapolis / New York.

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