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# **MATERIALISM: A HISTORICO-PHILOSOPHICAL INTRODUCTION**

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## **TABLE OF CONTENTS**

**Chapter 1 (Introduction): materialism, opprobrium and the history of philosophy**

**Chapter 2. To be is to be for the sake of something: Aristotle's arguments with materialism**

**Chapter 3. Chance, necessity and transformism: brief considerations**

**Chapter 4. Early modern materialism and the flesh or, forms of materialist embodiment**

**Chapter 5. Vital materialism and the problem of ethics in the Radical Enlightenment**

**Chapter 6. Naturalization, localization: a remark on brains and the posterity of the Enlightenment**

**Chapter 7. Materialism in Australia: The Identity Theory in retrospect**

**Chapter 8. Phantom limbs and the first-person perspective: an embodied-materialist response**

**Chapter 9. Conclusion**

## Chapter 1 (Introduction): materialism, opprobrium and the history of philosophy

### Abstract

Materialism – the philosophical doctrine that ‘Everything that exists, is material’, including human beings, who cannot then have an immortal soul – has been a heretical or clandestine teaching since the beginnings of philosophy. Its main crime is “explaining the higher level in terms of the lower level,” as Auguste Comte put it; this in turn is supposed to lead straight to immoralism: even Darwin denied that he was a materialist! At the same time, materialism is said to be the position which somehow facilitated and prepared the advent of modern science, particularly physical and biological science. What then is materialism? Is there only one, or are there many variants? I will mainly examine the first sustained materialist school in modern philosophy, in eighteenth-century French thought, chiefly represented by La Mettrie and Diderot, but also other figures notably in England. In addition, I will draw some contrasts between ‘French materialism’ and contemporary philosophy of mind, in which the dominant question is the relation between mind and brain.

Le mal, c’est la matière. Arbre noir, fatal fruit.  
(V. Hugo, *Les Contemplations*<sup>1</sup>)

### 1.1. Definitional problems

The great eighteenth-century materialist and sometime physician Julien Offray de La Mettrie (1709-1751) once wrote, with what now seems like great clairvoyance given the last years of his life and his immediate posterity, that “he who chooses man as an object of study must expect to have man as an enemy.”<sup>2</sup> Hopefully, the situation for the historian of philosophy who takes ‘materialism’ as an object of study is a bit different, but here, new problems arise. Notoriously, ‘materialism’ is a slippery term, referring to a “discontinuous” object, from its origins in pharmaceutical language (a materialist was someone who prepared the *material medica*<sup>3</sup>) to “its Epicurean, Stoic, Averroist or Alexandrian Peripatetic and even Paduan avatars,”<sup>4</sup> and onto cerebral

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<sup>1</sup> Hugo, *Les Contemplations*, § XXVI: “Ce que dit la bouche d’ombre,” 1855, in Hugo (1968), 373. All translations are my own unless otherwise indicated.

<sup>2</sup> *Discours sur le bonheur*, in La Mettrie (1987), II, 269.

<sup>3</sup> Bloch, “Sur les premières apparitions du mot ‘matérialiste’,” in Bloch (1998).

<sup>4</sup> Mothu (1990-1991), 318. On materialism as a “discontinuous” philosophical tradition (contrary to the monolithic vision found in the attempts at surveying the movement as a whole), see Mensching (2000), 525.

materialism in the nineteenth century, physicalism in the twentieth, and so on. But the challenges posed by materialism as a historico-philosophical object are not just an effect of shifting meanings, historical and/or scientific contexts, or even its self-understanding (consider that anti-clerical materialism will have, at least for the most part, different goals and criteria of validity than neurophilosophy). They include the significant fact that unlike, say, 'idealism', it is at first a *polemical* term, primarily defined by its opponents, including authors who subdivide materialism into many more precise genres, the better to refute them; indeed, apologeticists often prove to be excellent guides to the internal structures of heterodox thought (leaving aside the question of whether these apologetic texts actually *invent* these argument structures, as is claimed in Kors 1990).

So materialism first appears on the scene as an articulated philosophical position *defined by anti-materialists*, one which was indeed primarily or even exclusively used to disqualify the opponent. Gradually, some nuances appear, as when the Cambridge Platonist Henry More allows, in his 1668 *Divine Dialogues*, for a distinction between good and bad kinds of materialists, where the former defend a form of mechanism, without holding that everything reduces to matter, as the latter do.<sup>5</sup> It seems that it was (appropriately) in the context of the Radical Enlightenment that the term 'materialist' was first used by a thinker, La Mettrie, to describe himself, rather than strictly as a term of opprobrium (Bloch 1995). Thereafter, in the second half of the eighteenth century, it starts to be used positively but still with a polemical charge, so that authors have to defend themselves, e.g., against the charge of libertinage: thus Diderot, responding to the Dutch natural philosopher Hemsterhuis' request for commentary on his manuscript, observes that Hemsterhuis reasons "as if libertinage was a necessary consequence of materialism, which seems to me to match neither reason nor experience."<sup>6</sup> That Diderot went to prison for his *Letter on the Blind* of 1749, and La Mettrie had to flee, not just to the Low Countries but ultimately to the exile of Frederick the Great's court in Potsdam, only adds some bitterness to such sentiments.

In the nineteenth century, materialism takes on a meaning familiar to us today, as the science-friendly doctrine, the ideological combatant for science but also its 'valet', leading to a rather pronounced split in possible meanings, between the negative usage (often with ethical overtones, as discussed in Chapter 5) and a positive usage that overemphasizes this connection to science, neglecting some differences between philosophical concepts and empirical claims (as discussed with

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<sup>5</sup> More describes the better specimen of materialist, the character Hylobares, as "a young, witty, and well moralised Materialist," in a passage well-known to historians of materialism (More 1668, 5-6). For more on the history of the term see Bloch (1995) and (1998), Benítez (1998), 355 (signaling an earlier usage in French, in Friedrich Spanheim's 1676 *L'impie convaincu*) and on the German context, Rumore (2013) and Wunderlich (2015).

<sup>6</sup> *Observations sur Hemsterhuis*, in Diderot (1975-), XXIV, 251.

regard to brain-mind identity theories in Chapter 7). In some cases materialism is also located somewhere in between these extremes, in a sort of transitional understanding, as in when the young Charles Darwin, toying with implications of 'animal minds' and seeking to go beyond Locke, suddenly comments to himself in (mock?) horror, "Oh you materialist!"<sup>7</sup>

How do we handle such a shifting word? How do we analyse a doctrine which – aside from the rather banal fact that it had, and has partisans and detractors, doubtless like many other doctrines although in an especially charged manner – seems to be an alluring vision, "the most seductive philosophy"<sup>8</sup> in Diderot's words, the most liberating, in an Epicurean sense, but also, to others, the most sterile and inhuman philosophy? (Or, which does not match either of those very normatively invested visions, a kind of reasonable, naturalistically oriented vision of the world?) In the Marquis de Sade's novels, the most explicit scenes are often precipitated by a libertine character delivering a short, emphatic *petitio principii* of materialism, as a kind of particularly refined stimulus for erotic activity (Warman 2002). In contrast, Raymond Ruyer (a philosopher of the 1940s-1960s whose influence on Deleuze means that he is being rediscovered today), suggests a thought-experiment in an article entitled 'What is Living and What is Dead in Materialism', which has gone rather unnoticed (it appeared in 1933...). Ruyer suggests that we imagine a law court as seen through the eyes of a materialist: "The halo of meanings, essences and values," in other words, everything relevant about the scene, vanishes, and what is left is the "functioning of a sort of complicated mechanics" whereby brains produce articulations, which in turn generate vibrations in the air, and thereby modify other nervous systems (Ruyer 1933, 28). Everything takes place in the present, which is made up of strictly quantifiable events; psychological or social reality is an emanation which can always be reduced to physical processes. Basically, materialism in this argument *ad absurdum* is a strange kind of reductionism which denies the reality of social institutions, values, and of course minds.

In the first case, materialism is a process of elimination of superstition and the forces which constrain the pleasure of life, as La Mettrie would write in his scandalous *Anti-Seneca* (also published as *Discourse on Happiness*). In the second, it is a theory of reality which seeks to apply the 'rigor' or 'quantification' of physics to all aspects of reality – but in a kind of illegitimate transposition or category mistake, which we will encounter in another form with regards to the identification of mental life with cerebral processes, in Chapters 6-8. Its most classic form was represented by the German 'vulgar materialist' Carl Vogt's slogan stating that

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<sup>7</sup> Darwin, Notebook C, in Darwin (1996), 71; but this has nothing to do with the metaphysics of matter; Michael Ruse's statement that Darwinism is "the apotheosis of a materialistic theory" (Ruse 2000, 77), lacking conceptual or historical finesse, does not help us understand Darwin – or materialism – any better.

<sup>8</sup> *Pensées sur l'interprétation de la nature* § li, in Diderot (1975-), IX, 84.

all the properties we refer to as the activity of the soul are just functions of cerebral substance, and to put this more crudely, *thought is (more or less) to the brain what bile is to the liver and urine to the kidneys*. It is absurd to allow for an independent soul using the brain as an instrument...<sup>9</sup>

That the biochemical reductionism of the *Vulgärmaterialisten* was meant to be part of a socialist program of equality and elimination of class differences, does not really enter into this story, although it fits with the often expressed fear that materialism meant a kind of 'downwards' reduction, not just at the metaphysical level, but also in terms of basic human (and social) values: in 1873, one Doctor Desgrange asserted, in an address to the Société de médecine of Lyon, that "the most fearsome enemy of society today is the *materialist School*, whose doctrines begin at the highest levels of science, and then descend towards the lower classes, warping their ideas with breathtaking speed."<sup>10</sup>

What is more relevant in Ruyer's rather feverish denunciation of materialism as a reduction of the world of symbolic value to a set of vibrations in the air caused by solid objects – a vision in which, to quote Father Dominique Dubarle, "The material world is what remains of reality once one forbids oneself from including in it anything vital or mental"<sup>11</sup> – is that it captures two recurrent definitional and polemical problems of materialism, visible already in Aristotle's critique of the atomists (Chapter 2), and in different forms in debates over early modern materialism (Chapters 4 and 5) but also the Identity Theory in the twentieth century (Chapter 7): the problem of *reductionism*, and by extension, the question, *reduction to what?*, which opens onto the issue that will be termed physicalism. Is materialism a reduction to physics? I do not pretend to answer this question in this book, especially not in an Introduction, but the reader may make her judgment based on some of these chapters (and differently put, physicalism is something of a negative *Leitfaden* in my story). In the name of completeness, it is worth considering an answer to Ruyer's objection, not to him in particular, but to this type of anti-materialist argument. The answer is Quine's:

Send a man into another room and have him come back and report on its contents. He comes back and agitates the air for a while, and in consequence of this agitation we learn about objects in the room which are very unlike any agitation of the air. Selected traits of objects in that room are coded in traits of this agitation of the air. The manner of the coding, called language, is

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<sup>9</sup> Vogt 1875, 347-348 (Vogt's 13<sup>th</sup> Inaugural Lecture at the University of Giessen in 1845). For a similar formulation to Vogt's (thought=bile) see Cabanis (1802), 151 (the lectures forming the basis of the latter publication were given in the late 1790s).

<sup>10</sup> Desgrange (1873), 15.

<sup>11</sup> Dubarle (1953), 46.

complicated and far-fetched, but it works; and clearly it is purely structural, at least in the privative sense of depending on no qualitative resemblances between the objects and the agitation. Also the man's internal state, neural or whatever, in which his knowledge of the objects in that room consists, presumably bears none but structural relation to those objects; structural in the privative sense of there being no qualitative resemblances between the objects and the man's internal state, but only some sort of coding, and, of course, causation. ... I do think there is a substantial resemblance between our internal state ... and the man's internal state ... This I find plausible on broadly naturalistic grounds.<sup>12</sup>

The force in Quine's account lies, at least for my purposes, in how *open* it is: the mere 'physics' of vibration or here, agitation, seems to open onto the vast vistas of naturalism.

But now we run the risk of succumbing to a classic temptation, by entering onto the terrain first staked out by Friedrich Lange in his *History of Materialism* back in the 1860s: Lange sought to produce an exhaustive presentation of materialism in all its historical forms, in order to refute it (the book is subtitled, after all, 'critique of its present-day significance'). To enter on such terrain means producing militant defences of the 'truth' of materialism, in a mirror image of Lange's refutation.<sup>13</sup> It is important, on methodological but perhaps also on fundamental philosophical grounds, to see that an attempt to understand what might be in common in the diverse forms of materialism, does not necessarily mean to assert its 'truth' in some meta-historical sense (including as a purportedly 'scientifically founded' truth), nor to propose one of the various post-May 68 'war machines' in the history of philosophy, intended to roll back forms of power, domination and repression.<sup>14</sup>

To put it differently, the following chapters are not presented as a watertight, militant counter-history of philosophy in which Lucretius, La Mettrie, Diderot, Vygotsky, Quine and Dennett form a counter-narrative against a history in which Aristotle, Descartes, Kant and Hegel are the heroes. They *do* seek to do justice to such figures over and against the impoverished and sometimes downright false presentations given both in *histories* of philosophy and in *canonical works* of philosophy (with an exception being Aristotle's critique of materialism, discussed in Chapter 2, which is not a mere attempt at disqualification but a serious engagement with competing explanations of natural processes). In order to do justice to this historical complexity, I wish to return to the fact I mentioned at the outset, that materialism is born as a 'labelled' philosophical movement in an atmosphere of

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<sup>12</sup> Quine (1981), 176.

<sup>13</sup> Thus two earlier studies of the topic, Charbonnat (2007) and Vitzthum (1995), tend to overly favor the 'truth' of materialism, perhaps inadvertently mirroring the only other history of materialism, Lange's, which was intended as a careful, thorough refutation.

<sup>14</sup> Cf. " L'histoire de la philosophie a toujours été l'agent de pouvoir dans la philosophie, et même dans la pensée" (Deleuze 1979, 19-21).

opprobrium. For if we leave this out, we then retreat behind a catalogue of historical definitions. Yet I should also like to set out some typological elements concerning ‘forms of materialism’, before turning to my particular cases in the following chapters.

## 1.2. Dead matter and the opprobrium of materialism

Materialism has long had a bad reputation, on two distinct yet related grounds: that it *reduces everything to ‘dead’ matter*, and that it eliminates the ‘higher’, intellectual or spiritual parts of life, and thereby cannot but be *immoral*. This set of accusations came to a head in the period we now know as the Radical Enlightenment,<sup>15</sup> when, building on Paduan Averroist Aristotelianism (e.g. Pomponazzi), neo-Epicureanism and other partly clandestine elements, thinkers first assert themselves as materialists, boldly and confidently. One may ask (as I do in Chapters 4 and 5) whether these materialists, preachers of the pleasures of the flesh and otherwise deniers of an immortal or any other transcendent source of normativity (and thus basis for reward or punishment) were as coldly mechanistic and immoral as we are often told.

It has been said that the history of philosophy is the history of idealism. This is of interest, less as a truth claim (surely dependent on all sorts of presuppositions about the nature of philosophy, among others), and more because of it what it reveals. The import of this revelation is twofold: philosophy frequently and canonically has understood itself as idealism, both because of its opprobrium against materialism, and because of the reflexive belief – inseparably systematic and historical – that from Plato and Aristotle to Descartes, Kant and Hegel (and beyond), a philosophy is at its core a system of interlocking principles with a rational foundation. On this view, it cannot be an appeal to merely empirical, contingent properties, and still less a ‘reductionist’ explanation of the higher-level (consciousness, intentionality, action overall) in terms of the neuronal or biochemical properties of nematodes, sea slugs, macaques or orang-outangs. All true philosophies are then forms of idealism, while materialism is *Unphilosophie*, non-philosophy (Colletti 1969, 10, 35-36) – a position that has a Hegelian ring to it (after all, for Hegel, “Every philosophy is an idealism”<sup>16</sup>), but that extends beyond:

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<sup>15</sup> I am not concerned here with (a) the difference between Margaret Jacob’s and Jonathan Israel’s concepts of ‘radical Enlightenment’ or (b) the internal conceptual success and consistency of the latter (heavily debated e.g. in Secrétan et al., eds., 2007). As regards the role of Spinozism, I take it as more of a construct than a real relation to Spinoza (following Citton 2006), that is, a conceptual construct which need not involve first-hand acquaintance with the writings of Spinoza. For my approach to Spinozism in the Radical Enlightenment see Wolfe (2007), (2014).

<sup>16</sup> Hegel (1989), 155; Hegel (1971), 124 (where he adds, “Every philosophy is an idealism; there has never been any philosophy other than the self-knowledge of Spirit”).



Schopenhauer had declared that the “true philosophy” was in any case idealism, while materialism is the philosophy of “the subject who forgets to account” for herself.<sup>17</sup>

The opposition between idealism and materialism certainly runs deep. The eminent scholar of French materialism, Olivier Bloch, has recalled that Plato, in the *Sophist* (246b-c), features a ‘battle of giants’ (*gigantomachia*) between the Lovers of Forms and those he calls the Sons of the Earth, his early version of the figures we might call the ‘crude materialists’. The latter come in different guises, for Plato: there are those who explain everything about our bodies and life in terms of the Earth, and thereby confuse human life with the existence of trees and stones; there are those who obsessively take apart reality into tiny atomic components and view the universe as perpetually changing. This contrasts with Aristotle’s extensive (and, in my view, more sophisticated) presentation of and ‘debate’ with materialism, discussed in Chapter 2. The stupidity of such thinkers is mirrored (or matched) by the purported stupidity of matter itself, a motif much belabored in early modernity: e.g., the Cambridge Platonist Ralph Cudworth spoke of “stupid and senseless Matter” in his posthumous *Treatise concerning Eternal and Immutable Morality* (Cudworth 1897, I, chapter II, § 8, 839).

This theme of the ‘stupidity’ of matter reaches something of a fever point in the seventeenth and early eighteenth centuries: for Cudworth, “Mind and Intellect are a higher, more real and substantial Thing than senseless Body and Matter,” and he of course denied that “all Being and Perfection that is found in the World” could “spring up and arise out of the dark Womb of unthinking Matter” (slightly mixing metaphors, one might say: *op. cit.*, § 13, 846). The great Jansenist Pierre Nicole, who significantly influenced Locke, also wrote around the same time that one cannot conceive of “this dead and unfeeling mass we call matter” as being “an eternal being”; it is clear, Nicole continues, that “matter lacks any internal cause of its existence ... it is ridiculous to attribute to the most vile and despicable of all beings, the greatest of perfections, which is to exist by oneself [*d'être par soi-même*]” (Nicole 1671, in Nicole 1714, 27). The Jesuit *Dictionnaire de Trévoux* (first edition, 1704) does not insult matter or materialism for what it does to “perfections” such as intelligence or autonomous existence, but opts for an equally successful strategy of discrediting it – here in dictionary entry form, in the entry ‘Matériel’:

Material also means massive, gross. ... These walls, these foundations are too *material*. This watch is not subtle, it is too *material*. One also says of a witless man, or one who is too fond of the pleasures of the senses, that he is quite *material*, he has a thick and *material* physiognomy (*Dictionnaire de Trévoux* 1704, II, n.p.).

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<sup>17</sup> Schopenhauer, *Die Welt als Wille und Vorstellung*, II, 1 (“Zur idealistischen Grundansicht”), in Schopenhauer (1977), 11, 27.

The Enlightenment anti-materialist writer Denesle (no first name known) wrote that “matter was the most vile of all beings”<sup>18</sup>; as late as 1873, Doctor Desgrange, as I mentioned earlier, called materialism “the most fearsome enemy of society today.” Sometimes this pathos of hatred for matter can, surprisingly, alternate within the same author with a passion for its vitality: Alexander Pope, for instance, exclaimed – quite conventionally – that “There's nought in simple Matter to delight / 'Tis the fair Workmanship that takes the Sight,” so that “Where Mind is not, there Horror needs must be / For Matter formless, is Deformity,” but also, closer to the ‘vital’ materialism discussed in Chapter 5, insists on matter as inherently *alive*: “All matter quick, and bursting into birth.”<sup>19</sup>

There would be more to say about this sometimes accidental, sometimes deliberate slippage between the hatred *for matter* and the hatred *for the thinkers who ‘defend’ it*, but this is not the place. Indeed, in a remarkable display of continuity despite highly diverse intellectual, theological and political contexts, this contempt for ‘crude materialism’ runs at least as far as the twentieth century, via Hegel, Engels and Sartre. Moreover, it crosses between a ‘metaphysical’ form of contempt (as in Cudworth, Nicole or the *Dictionnaire de Trévoux* cited above), a more historicized form, which becomes canonical for a certain brand of Marxism, as presented notably by Engels in the late nineteenth century, and which I shall have more to say about in Chapters 4 and 5, and even a more scholarly form, which we shall encounter again, as part of my aim will to be rebut it: this critique insists that Enlightenment materialism was necessarily a “mechanistic materialism.” Here is Engels’ canonical statement, which is well-known and cited in papers including mine, but it deserves a place in any attempt to give an introduction to problems in the history of materialism.

The materialism of the past century was predominantly mechanistic, because at that time ... only the science of mechanics ... had reached any sort of completion. ... For the materialists of the eighteenth century, man was a machine. This exclusive application of the standards of mechanics to processes of a chemical and organic nature – in which the laws of mechanics are also valid, but are pushed into the background by other, higher laws – constitutes the specific (and at that time, inevitable) limitation of classical French materialism<sup>20</sup>

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<sup>18</sup> Denesle (1754), I, 33n.

<sup>19</sup> Respectively, Pope (1735), 345; Pope (1958), Epistle I, section VIII, 44.

<sup>20</sup> Engels (1888), in Marx & Engels (1982), 278 (translation mine); in English in Marx & Engels (1959), 211.

What I called the 'scholarly' form of this rather overdetermined presentation can be found, e.g., in a description from a study of physical concepts in the *Encyclopédie*, from the 1950s:

the strongest, most pronounced characteristic of the metaphysics we find in the materialism of the 'encyclopédistes', is the reduction of all forms of the motion of matter to mechanical motion, and of all changes in the universe to the merely 'local changes' of a permanently self-identical and unchangeable matter. It is a mechanistic materialism.<sup>21</sup>

It is a flagrant mistake to describe eighteenth-century French materialism as 'mechanistic', for many reasons that I shall not discuss here (for some elements see Chapter 4), ranging from the specifically organic or organismic focus of works like *L'Homme-Machine* to the quite real obsession with the chemistry of matter in such authors. But the aspect I wish to highlight here does not concern matter theory. Rather, it is the way such analyses frequently appeal to a somewhat unargued-for concept of interiority or selfhood which they oppose to this world of mechanistic matter, as when Suzanne Necker asserts in vulgarized Cartesian language that "half of a self is a contradictory absurdity, just like a parcel of matter that cannot be divided is also a contradiction..." (Necker 1798, III, 88).

I observe that this contempt (which here presents itself as merely a *constat* of historical limitations) crosses between metaphysics, history of philosophy and scholarship, also because the more strongly normative language we encountered in the seventeenth-century texts cited above somehow returns also in Marxist humanist form, e.g. in Sartre's well-known 1946 essay "Materialism and Revolution." Sartre describes materialism here as "the subjectivity of those who are ashamed of their subjectivity" (Sartre 1990, 99); materialism claims to be all about reason, but within the materialist perspective, reason is "captive, governed from outside, manipulated by blind causal chains" (86). Nature here is "pure externality" (94), purely mechanical (89-90), in sharp contrast with the world of values and action: "a causal chain can lead me to a movement, a behavior but not ... to my grasping of my situation as a totality. It cannot ... account for revolutionary class-consciousness" (120). In sum, materialism is Taylorism: "materialism, by decomposing man into rigorously defined behaviors like in Taylorism, serves the purposes of the master: it is the master who conceives of the slave as being like a machine" (127-128).

Sartreans and critics of what they perceive as the excesses of materialism might not be delighted to be lumped in with old-fashioned humanists, extending intuitions going back to the Cambridge Platonist defense of the soul, and

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<sup>21</sup> Vassails (1951), 315, referring to the article "MOUVEMENT." One could extend this study of the inflated vision of a mechanistic materialism to contemporary theoretical debates at the intersection of feminism and shifts in 'theory' in the humanities, sometimes under the heading of 'new materialism'; I give some indications in Wolfe (2015).

subsequently human dignity. But the above analyses rely on very much the same intuitions as assertions such as “If everything is matter, I cannot see in the name of what, indeed, we might condemn Stalin’s work” (this is Mauriac).<sup>22</sup> What *do* we need to condemn Stalin, then? This takes us back to the responses to La Mettrie, which reveal that the critique of the ‘man-machine’ idea (which is one way like another of asserting that everything is material) is really a response to *moral* danger. Sade will force this into the form : if everything is matter, I can commit any crime.

Nor is this opposition between a world of meaning, value, and subjectivity and a cold, dead world of matter (and/or mechanistically understood matter) restricted to a now-vanished Hegelian Marxist tradition: a prominent recent work in ‘enactivist’ cognitive science of recent years declares boldly that “Life is not physical in the standard materialist sense of purely external structure and function ... [w]e accordingly need an expanded notion of the physical to account for the organism or living being” (Thompson 2007, 238), a point of view reflecting an enduring trend in phenomenology.<sup>23</sup> In sum, materialism is frequently portrayed as some combination of stupidity and wickedness – “dead matter,” “mechanical, lifeless matter,” “brutish matter” or – which is not the same, as we shall see – as evil itself, as in Hugo’s verse which serves as the epigraph here: “evil is matter itself. Dark tree, fatal fruit,” versus a varying combination of Life, Value and Freedom.

Faced with this situation, some twentieth-century thinkers sought to introduce materialism into the history of philosophy, from Althusser onwards – and one should not confuse this more sophisticated project<sup>24</sup> with the older diktats of ‘dialectical materialism’ or the more dogmatic attempts to present, e.g. Helvétius or Diderot as heroes of a kind of class struggle in philosophy *avant la lettre* (a classic instance of which is Plekhanov 1934). Or one can seek to historicize the practice of the history of philosophy itself, in order to detect its Kantian (and otherwise idealistic) leanings.<sup>25</sup> Here my aim is strictly to call attention, in this combined historico-philosophical account, of several *distinctive features* of materialism, both in a comparative manner (when Diderot and J.J.C. Smart seek to explain mental

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<sup>22</sup> Mauriac, note of March 1953, in Mauriac (1967), 433. Thanks to Lucian Petrescu for help with this reference.

<sup>23</sup> One thinks also of Husserl’s war against positivism, his endless plans to refound each science on an eidetic basis as a science of essences, his rants against laboratories and “experimental fanatics” (Husserl 1910-1911, 304) or the “scientific fanaticism” of our time (338). Whether nor not phenomenology can be naturalized (see Varela, Petitot and Roy eds. 1999), it will not be soluble in materialism, as Thompson himself indicates. This did not prevent such major figures of twentieth-century materialism from searching for ‘naturalized’ equivalents of intentionality, e.g. David Armstrong (Armstrong 1968/1993, 57).

<sup>24</sup> Jean-Claude Bourdin’s reading of Hegel on materialism, but also of the challenging presence of what we might call ‘Radical Enlightenment’ materialism within Hegel’s historical presentation of philosophy, is a noteworthy attempt in this regard (Bourdin 1992).

<sup>25</sup> See Haakonssen 2006 and the papers collected in Laerke, Schliesser Smith eds. (2013), particularly those by Smith and Vermeir.

processes by appealing to the brain, what do they share and what is dissimilar in their arguments?) and in a specific context (what can the materialist say about phantom limb syndrome?). This is what I meant above by the need for a typology of forms of materialism.

### 1.3. Forms of materialism

Whether it bases itself on a critique of concepts of divinity or an internal reform of theology, on physics, on biology or neuroscience (this is not an exhaustive list!), materialism will hold (i) that everything that exists is material, or the product of interaction between or relations between material entities; a second form of materialism (ii) will focus on relations between mind and brain, although (i) and (ii) are not always separate: from responses to Locke on thinking matter to debates on animal minds in the wake of Bayle's article "Rorarius," concerns about the nature of matter and the nature of the mind could fuel one another, as in the chapter title in the free-thinker Boyer d'Argens' 1737 *La philosophie du bon sens*: "That the Animal Soul is a Proof that Matter can acquire the Faculty of Thought" (Boyer d'Argens 1737, ch. XIV). Indeed, the Abbé Pluquet, in his eighteenth-century catalogue of heresies, explains that the thinkers he calls "Materialists or Materials" (*Matérialistes ou Matériels*, a terminology he attributes to Tertullian!) believe "that the soul is born of matter (*sortait du sein de la matière*)."<sup>26</sup> The entry on "Materialists (Atheists)" in the revolutionary-era *Encyclopédie méthodique* distinguished between variants of (i) and (ii), but observed that they are often collapsed: "materialists argue either that man's soul is matter, or that matter is eternal and is God; or that God is just a universal soul distributed throughout matter which moves and arranges it, either to produce beings or to create the various arrangements we see throughout the universe" (Naijeon (ed.) 1794, III, 208).

Claim (i) often took the form of a 'cosmological' thesis – i.e., concerning the constitution of the universe as a whole, as in d'Holbach's affirmation, "the universe, this vast sum of all that exists, offers us everywhere just matter and motion," in the first section of his *Système de la nature* (d'Holbach 1770, I, ch. I, 44). The cosmological thesis was initially framed as an attribution of basic properties such as motion to matter. Thus, in the early years of the eighteenth century, the Irish deist and free-thinker John Toland rejected – perhaps the first to do so – the strong distinction between matter and motion: "Matter is but Motion under a certain Consideration" (Toland 1704, C 4). The fifth of his *Letters to Serena* (*ibid.*, 163f.) is explicitly entitled *Motion essential to Matter*, and in it Toland states that "All the Matter in Nature, every

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<sup>26</sup> Pluquet (1762/1788), II, s.v. "Matérialistes," 300. As late as the *Encyclopédie* article "Matérialistes," these are presented (with an acknowledgment that it is an old definition) as those thinkers "who claim that man's soul is matter" (Diderot 1765/1966, X, 188b), thus combining theses (1) and (2).

Part and Parcel of it, has bin ever in motion, and can never be otherwise" (167), and "there's but one sort of Matter in the Universe" (174). In addition – as La Mettrie and Diderot emphasized more dramatically – matter is not just in some sort of 'intestine' motion (Toland speaks later on of its "autokinesy"), it is also fundamentally, inherently *active*: "Activity ought to enter into the Definition of Matter, it ought likewise to express the Essence thereof" (165), "action is essential to Matter" (160). Contrary to the common accusation that materialists reduce the world, life and mind to a heap of dead, passive matter, Toland is explicit that "Matter neither ever was nor ever can be a sluggish, dead and inactive Lump, or in a state of absolute repose" (C 3); "I deny that Matter is or ever was an inactive dead Lump in absolute Repose, a lazy and unwieldy thing" (159).

However, it is not as if materialism progresses by simply adding further and further properties to Galilean or Cartesian extension like layers in a *millefeuille*. Indeed, active matter, or thinking, sensing, living matter was a consequence of criticisms of the Cartesian/Malebranchian notion of inert matter and theory of mechanism that went with it. As Diderot put it, reacting to the classic mechanist metaphor of the watch or clock in his unfinished *Elements of Physiology* (written during the later 1760s and 1770s), "What a difference there is, between a sensing, living watch and a golden, iron, silver or copper watch!" (Diderot 1975-, XVII, 335). The key property of living matter was organic sensitivity. Diderot sometimes suggested that "sensitivity or touch is common to all beings," or even that sensitivity was a "general property of matter" (308).

In this context, matter was not a metaphysical *extensa* to be assumed in theory, but instead open to experimental investigation into the particular properties of distinct types of living matter – the plasticity of the cerebellum or the regenerative properties of Trembley's polyp or, frequently appealed to by medical materialists including Mandeville (1711/1730) and La Mettrie, the particular illnesses of patients and their relation to individual constitutions – all of which served as evidence of the sorts of properties and powers possessed by matter. A virtue of these theories is that they drew on working experimental concepts and situated their arguments within experimental contexts, not solely within a theoretical account of how exemplary science works. Diderot, whose matter theory centered on epigenetic, living, sensing, self-transforming matter, stated this point as a chemically motivated critique of mathematical abstraction, in his 1770 *Principes philosophiques sur la matière et le mouvement*:

You can practice geometry and metaphysics as much as you like; but I, who am a physicist and a chemist, who takes bodies in nature and not in my mind, I see them as existing, various, bearing properties and actions, as agitated in the universe as they are in the laboratory where if a spark is in the proximity of three combined molecules of saltpeter, carbon and sulfur, a necessary explosion will ensue (Diderot 1975-, XVII, 34).

More broadly, he opposed the novelty and conceptual significance of the life sciences to what he (incorrectly) judged to be the historical stagnation of mathematics, including as in his *Pensées sur l'interprétation de la nature* (discussed in Chapter 4).<sup>27</sup> What is notable in this attitude is the effort to conceptualize a new ontology for the emerging life sciences as part and parcel of the reduction. This was very different from both the mechanistic models of Life and the 'animist' appeals to the soul as an explanatory or even genuine ontological principle (as in Georg-Ernest Stahl) in the late seventeenth and early eighteenth centuries, which either failed to account for specifically living, goal-directed features of organisms, or accounted for them in supernaturalistic terms.

There are several ways to describe this increasing complexity in matter theory. One reading emphasizes the shift from substance dualism to a theory in which matter takes on some of the explanatory role that 'soul' had previously (Vartanian 1982, Wright 1991). The entire story that this book seeks to tell, could be retold in terms of shifting concepts of the soul – its mortality, its corporeality, the possibility of its naturalization, tensions between Aristotelian and Epicurean models, the appearance of animal spirits on the scene, and so on. That will have to wait for another book, but I should like to make one observation, concerning the status of a 'hegemonic' entity corresponding to a centre of our personhood (self, subject, person, soul ..., which Cudworth describes in his writings on morality as the *to hegemonikon*).

The fear that 'cosmic' materialism would lead to reductionist approaches to the mind (and thus the self, the person ...) was central to early modern physico-theology and beyond, from the Boyle Lectures which Robert Boyle had endowed in his will (the title of Richard Bentley's second Boyle Lecture for 1692 is quite explicit: *Matter and Motion Cannot Think*) and John Ray's *Wisdom of God* in the 1690s to Bernard Nieuwentijt's *The religious philosopher, or, The right use of contemplating the works of the Creator* (1715; first English translation 1719), and William Paley's *Natural Theology* of 1802. This is why Isaac Newton was so adamant that gravity should not be understood as a property of matter:

It is inconceivable that inanimate brute Matter should, without the Mediation of something else, which is not material, operate upon, and affect other Matter without mutual Contact, as it must be, if Gravitation in the Sense of *Epicurus*, be essential and inherent in it.<sup>28</sup>

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<sup>27</sup> Diderot (1753), § 4 in Diderot (1975-), IX, 30-31.

<sup>28</sup> Newton to Bentley, February 25<sup>th</sup>, 1693, letter III in Newton (1958), 302. He adds that "Gravity must be caused by an Agent acting constantly according to certain Laws; but whether this Agent be material or immaterial, I have left to the Consideration of my Readers." For a stimulating analysis of the metaphysics involved in Newton's discussion of gravity, see Schliesser (2011).

Thus he wrote to his ideological protégé the divine Richard Bentley that he “desired you would not ascribe innate Gravity to me”:

That Gravity should be innate, inherent and essential to Matter, so that one Body may act upon another at a Distance thro’ a *Vacuum*, without the Mediation of any thing else ... is to me so great an Absurdity, that I believe no Man who has in philosophical Matters a competent Faculty of thinking, can ever fall into it (*ibid.*).

But quickly, the issue shifted from the attribution of motion or gravity to matter, to a yet more grievous attribution, shifting imperceptibly into materialist claim (ii), concerning *thought*. No one saw or expressed this more clearly than Fontenelle, the longtime Secretary of the Académie des Sciences, in his 1752 *Théorie des tourbillons cartésiens* (*Theory of Cartesian Vortices*), late in his long career and life. Fontenelle reflected critically on what he saw as the arbitrariness of Newtonian attraction, and added that attributing attraction to matter in terms of God’s will (“wholly arbitrary”) was a small step away from granting it the power to think: “If we grant this arbitrariness, we destroy any philosophical proof of the spirituality of the soul. *God could just as well have granted thought to matter, as attraction*” (Fontenelle 1752, § III, in Fontenelle 1829, 71, emphasis mine).

The most celebrated discussion of matter and thought in the early eighteenth-century was the pamphlet exchange known as the Clarke-Collins correspondence. Briefly, Samuel Clarke had sought to prove in his *Letter to Dodwell* that consciousness cannot be the property of a system of material parts. According to Clarke, a material thing was divisible. An individual consciousness must be indivisible (“indiscernible”) and hence immaterial and immortal. Anthony Collins responded that a divisible system of matter taken as a whole may have a quality not equal to the sum of the qualities of the separate parts (Clarke 1738, III, 769): a rose is a divisible thing, yet its smell cannot be reduced to the sum of the powers of the parts<sup>29</sup> – and thinking might be like this, too. While consciousness, thought, or the rose’s smell may not be the properties of individual parts of these respective systems, they are properties of the whole.

For Clarke, if matter were conscious, then every particle of matter would have a distinct indivisible consciousness. A system of matter made up of such particles, could not have an individual consciousness, but would have to be at best a cluster or bundle of consciousnesses. Collins replied that Clarke just assumed that thinking was an individual power. For Collins, *thinking was a mode of matter*: “human consciousness or thinking is a mode of some generical power in matter . . . it has generation, succession and corruption like all other modes of matter” (in Clarke 1738, III, 807). Collins further insisted on a connection between the empiricist account of the origin of ideas in sensation, and the materialist account of how “ideas

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<sup>29</sup> Collins, in Clarke 1738, III, 770 (this controverts Clarke, *Letter to Dodwell*, in Clarke 1738, III, 759).



of sensation" originate in the process of "bodies operat[ing] upon us" (Clarke 1738, III, 863). Here, Collins added the other characteristic (and at the time quite new) materialist claim that thinking is a kind of motion in the brain (866).

If Cudworth and Bentley had feared the idea that matter could *think*, by the mid-eighteenth century the fear is primarily directed towards *living*, self-subsisting, self-organizing matter. Kant, in the 1786 *Metaphysische Anfangsgründe der Naturwissenschaft* (*Metaphysical Foundations of Natural Science*) and subsequently, argued at length against this view, which he called hylozoism, and sought to eliminate its possibility from our concepts of nature; he viewed it as "the death of all philosophy of nature."<sup>30</sup> Consider also Goethe's reaction to d'Holbach's *System of Nature*:

I recollect particularly the *Système de la Nature*, which we laid hold of with curiosity. We could not understand how such a book could be dangerous. It seemed to us so gloomy, so Cimmerian, so deathly (*so grau, so cimmerisch, so totenhaft*), that we could hardly endure its presence, and shuddered before it as before an apparition. . . . But how vacant and desolate our souls grew in this sad atheistic twilight (*tristen atheistischen Halbnacht*)! – in which the earth vanished with all its forms of beauty, and the heaven with all its stars. Only matter remained, moved from eternity hither and thither, right and left, with no other power, on all sides producing the endless phenomena of existence (*Dichtung Und Wahrheit*, XI, in Goethe 1887-1919, 69-70).

Goethe is describing a reaction that was also common in Coleridge and other authors who were deeply invested in the philosophy of nature: that materialism was a dehumanizing form of reduction that stripped Nature of life and meaning; he missed the stress on living, self-organized matter and the criticisms of mechanism in French materialism (and differently, in Collins and others), which were meant to supersede the dichotomy between inert matter and active thought.

Engels, Ruyer and already Goethe articulate a powerful (at least at the level of intuition) critique of materialism: that it reduces the world of life to the world of dead matter; a sophisticated version of this critique would allow for the pertinence of certain sciences (from the search for the *Urpflanz* to an Aristotelian biology!) *over and against* other, illegitimate explanations, e.g. in terms of physics and/or mechanics. They seem blind to the presence, in Lucretius, Gassendi, La Mettrie and Diderot, and in a very different way in authors such as Dewey, Quine or Dennett, of either a specifically *vital* sense of matter, and/or a naturalistic openness to the fact that the description of the natural world is not, in the end, going to be a matter of pure physics. One could add, as I discuss further in the Conclusion, that they don't

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<sup>30</sup> *Metaphysische Anfangsgründe*, III.3, AA 4, 544. Prior to the first *Critique*, in a 1773 letter to Marcus Herz, Kant already insisted that in his anthropology lectures he would avoid "eternally futile inquiries as to the manner in which bodily organs are connected with thought" (AA 10, 145), as opposed to what he would call pragmatic anthropology.

seem to do justice to the very active forms of *anti-foundationalism* in work in the theories they attack (or perhaps it is their desire for ultimate foundations which motivates some of their criticism!). As the anonymous 1738 *Dissertation on the Formation of the World* put it, “isn’t it in vain that we seek to define the original form of matter?” (ch. II, in Stancati 2001, 96). A variety of texts, from Meslier’s *Mémoire* (written in the 1720s but unknown until a generation later) to the *Encyclopédie* article “Matière,” speak out against “first principles.” The materialist will precisely reject the foundational character of mind, as in Cudworth’s formulation that mind is “senior to the world” (Cudworth 1678, I, ch. IV, 729, 736-737; ch. V, 853).

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I have suggested some ways of sorting out, or through the morass of the history of materialism without thereby opting either for an overly partisan defence of a kind of eternal truth (scientific? metaphysical? atheistic?) of this doctrine, or for an antiquarian *herbier* of endless possible cases, sources, rhetorical forms and instantiations. Unfortunately, many episodes were left out, as I discuss again in the Conclusion – and even if this study were double the length, it would still not be about dialectical materialism or materiality. But I hope that a short historical and philosophical overview which combines Aristotle contra materialism, the problem of phantom limbs, evolution (however briefly, in Chapter 3), brains, machines and ‘hylophobia’ will serve some purpose. Scholars of early modern philosophy will wish for chapters on Hobbes, Spinoza, perhaps Cavendish,<sup>31</sup> or Leibniz’s critique of materialism/Epicureanism ; scholars of German Idealism will regret the absence of the problem of hylozoism, determinism, abstract matter, and so forth. This is, of course, a partial introduction, ‘heavy’ on the Enlightenment and its posterity.

Methodologically, the trajectory I have sought to describe indicates that there is a history, not just of materialist philosophies (e.g. Lucretius, Hobbes, Diderot, Priestley) but also of the presence of materialist ‘components’ or articulated wholes *within* philosophical systems that are not themselves materialistic: Descartes as appropriated by Regius, Malebranche as appropriated by *L’âme matérielle*, Spinoza and Bayle as appropriated by several generations of radical eighteenth-century thinkers – not to mention ‘scientific’ texts like those of Willis, Whytt or Haller, whose authors go out of their way to reject materialism, but who instantly become evidence for that view. (I don’t take a position in this work on whether Spinoza was a materialist or not.<sup>32</sup>) This is not just a theoretical game (whether it is described as collage, appropriation or in more systematic terms), for as noted with respect to Malebranche’s psychophysiology, sometimes the texts which were criticising a view

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<sup>31</sup> See the work of Stewart Duncan, e.g. Duncan (2012).

<sup>32</sup> Although I am sympathetic to this view. See Moreau (2000) and Korichi (2000).

could serve as the best evidential resource for an author who was not part of an inner sanctum of experimental natural philosophy.<sup>33</sup>

## References

- Armstrong, D.M. 1993. *A Materialist Theory of the Mind* (1968), 2<sup>nd</sup> edition. London: Routledge.
- Benítez, Miguel. 1996. *La face cachée des Lumières*. Paris/Oxford: Universitas/Voltaire Foundation
- Bloch, Olivier. 1995. *Le matérialisme*, 2<sup>nd</sup> edition. Paris: PUF, coll. "Que sais-je?".
- Bloch, Olivier. 1998. *Matière à histoires*. Paris: Vrin
- Bourdin, Jean-Claude. 1992. *Hegel et les matérialistes français*. Paris: Klincksieck.
- Boyer, Jean-Baptiste de, marquis d'Argens. 1737. *La philosophie du bon-sens ou réflexions philosophiques sur l'incertitude des connoissances humaines....* London: aux dépens de la Compagnie.
- Cabanis, Pierre-Jean-Georges. 1802. *Rapports du physique et du moral*. Paris: Crapart, Caille et Ravier.
- Charbonnat, Pascal. 2007. *Histoire des philosophies matérialistes*. Paris: Syllepse.
- Citton, Yves. 2006. *L'Envers de la liberté. L'invention d'un imaginaire spinoziste dans la France des Lumières*. Paris: Éditions Amsterdam.
- Clarke, Samuel. 1738/1978. *The Works of Samuel Clarke*, 4 vols. Reprint, New York: Garland.
- Cudworth, Ralph. 1678/1977. *The True Intellectual System of the Universe*. London: R. Royston; Reprint, Hildesheim: Georg Olms.
- Cudworth, Ralph. 1897. *A Treatise concerning Eternal and Immutable Morality* [written before 1688; first published posthumously in 1731], in L.A. Selby-Bigge, *British Moralists*, in two volumes, vol. 2. Oxford: Clarendon Press.
- Darwin, Charles. 1996. *On Evolution*, eds. T. Glick and D. Kohn. Indianapolis: Hackett.
- Deleuze, Gilles. 1979. *Dialogues avec Claire Parnet*. Paris: Champs-Flammarion.
- Denesle. 1754. *Examen du matérialisme, relativement à la métaphysique*, 2 vols. Paris: Vincent.
- Desgrange, Antoine. 1873. *Du matérialisme contemporain*. Lyon: A. Vingtrinier

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<sup>33</sup> Thus Diderot, writing on physiology, could cite as evidence the Edinburgh physician Robert Whytt's 'neuropneumatological' assertion that "the soul is equally present in the extremities of the nerves through the whole body as in the brain" (Whytt 1768, 287) even though Whytt had specified this was not tantamount to materialism, since these functions of the soul were themselves dependent on what he calls an "active sentient principle," which brought together sensibility and life, and could not be a property of matter itself (*ibid.*, 128).

- D'Holbach, Paul-Henri-Thiry, Baron. 1770/1990. *Système de la Nature ou des lois du monde physique et du monde moral*. London (reprint of 2<sup>nd</sup> edition 1781), ed. J. Boulad-Ayoub. Paris: Fayard-“Corpus”.
- [Diderot, Denis.] 1765/1966. Matérialistes (Théol.). In *Encyclopédie ou Dictionnaire raisonné des arts et des métiers*, eds. Denis Diderot and Jean Le Rond D'Alembert, X, 718b. Paris: Briasson, David, Le Breton & Durand; reprint, Stuttgart/Bad Cannstatt: Frommann.
- Dubarle, Dominique. 1953. Matérialisme scientifique et foi religieuse. In François Russo, André George, Dominique Dubarle [et al.], *Pensée scientifique et foi chrétienne*, 43-53. Paris: Fayard.
- Duncan, Stewart. 2012. Debating Materialism: Cavendish, Hobbes, and More. *History of Philosophy Quarterly* 29(4): 391-409.
- Engels, Friedrich. 1982. *Ludwig Feuerbach und der Ausgang der klassischen deutschen Philosophie* (1888). In Marx und Engels, *Werke*, vol. 21. Berlin: Dietz Verlag.
- Fontenelle, Bernard de 1829. *Théorie des tourbillons Cartésiens; avec des réflexions sur l'attraction* [1752], in *Œuvres de Fontenelle*, vol. III, 5-80. Paris: Salmon.
- Goethe, J.W. von. 1887-1919. *Goethes Werke*. hrsg. im Auftrage der Grossherzogin Sophie von Sachsen, 143 v. Weimar: Hermann Böhlau, v. 28.
- Haakonssen, Knud. 2006. The concept of eighteenth-century philosophy. In *The Cambridge History of Eighteenth-Century Philosophy*, ed. Knud Haakonssen, 3-25. Cambridge: Cambridge University Press.
- Hegel, Georg Wilhelm Friedrich. 1971. *Einleitung in der Geschichte der Philosophie*, ed. J. Hoffmeister. Hamburg: Felix Meiner
- Hegel, Georg Wilhelm Friedrich. 1989. *The Science of Logic*, trans. A.V. Miller. Atlantic Highlands, NJ: Humanities Press International.
- Hugo, Victor. 1968. *Œuvres complètes de Victor Hugo: édition chronologique*, ed. J. Massin, vol. IX. Paris: Club Français du Livre.
- Husserl, Edmund. 1910-1911. Die Philosophie als Strenge Wissenschaft. *Logos* 1: 289-341
- Israel, Jonathan. 2001. *Radical Enlightenment. Philosophy and the making of modernity 1650-1750*. Oxford: Oxford University Press.
- Kant, Immanuel. 1900. *Kants gesammelte Schriften*, Hrsg. von der Königlich Preussischen Akademie der Wissenschaften zu Berlin. Reprint, De Gruyter, Berlin 1900 (cited as AA)
- Korichi, Mériam. 2000. Defining Spinoza's Possible Materialism. *Graduate Faculty Philosophy Journal* 22:1 (*The Renewal of Materialism*): 53-69
- Kors, Alan Charles. 1990. *Atheism in France, 1650-1729*. Princeton: Princeton University Press.

- Lærke, Mogens, Smith, Justin E.H., and Schliesser, Eric, eds. 2013. *Philosophy and Its History. Aims and Methods in the Study of Early Modern Philosophy*. Oxford: Oxford University Press.
- La Mettrie, Julien Offray de. 1987. *Ceuvres philosophiques (1751)*, ed. F. Markovits, 2 vols. Paris: Fayard- "Corpus".
- Lange, Friedrich A. 1974. *Geschichte des Materialismus und Kritik seiner Bedeutung in der Gegenwart*, hrsg. H. Cohen, 2 vols., Leipzig: J. Baedeker [1866]; new edition, ed. A. Schmidt, 2 vols. Frankfurt: Suhrkamp
- Lange, Friedrich A. 1892. *History of Materialism and Criticism of its Present Importance*, tr. E.C. Thomas, 3 vols., 4<sup>th</sup> edition. London: Kegan Paul, Trench & Trübner
- Mandeville, Bernard. 1730. *A Treatise of the Hypochondriack and Hysterick Diseases, in Three Dialogues (1711)*, second corrected edition, London: Tonson; reprint, Delmar, N.Y.: Scholars' Reprints, 1976
- Marx, Karl and Engels, Friedrich. 1959. *Basic Writings on Politics and Philosophy*, ed. L.S. Feuer. New York: Doubleday / Anchor Books.
- Mauriac, François. 1967. *Mémoires politiques*. Paris: Grasset.
- Mensching, Günther. 2000. Le matérialisme, une tradition discontinuée. In *Materia actiosa... Mélanges en l'honneur d'Olivier Bloch*, eds. M. Benítez, A. McKenna, G. Paganini & J. Salem, 512-525. Paris: H. Champion / Geneva: Slatkine
- Mintz, Samuel I. 1962. *The Hunting of Leviathan: seventeenth-century reactions to the materialism and moral philosophy of Thomas Hobbes*. Cambridge: Cambridge University Press.
- More, Henry. 1668. *Divine Dialogues, Containing sundry Disquisitions and Instructions Concerning the Attributes and Providence of God in the World...* London: Fleisher
- Moreau, P.-F. 2000. Matérialisme et spinozisme. *Materia actiosa... Mélanges en l'honneur d'Olivier Bloch*, eds. M. Benítez, A. McKenna, G. Paganini & J. Salem, 253-259. Paris: H. Champion / Geneva: Slatkine.
- Mothu, Alain. 1990-1991. La pensée en cornue: considérations sur le matérialisme et la 'chymie' en France à la fin de l'âge classique. *Chrysopoeia* 4: 307-445
- Naigeon, Jacques-André, ed. 1794. *Encyclopédie méthodique, ou par ordre de matières. Philosophie ancienne et moderne. Tome III, l'an deuxième de la République*. Paris: H. Agasse.
- Necker, Suzanne. 1798. *Mélanges, extrait de ses manuscrits*, ed. Jacques Necker. Paris: Charles Pougens.
- Newton, Isaac. 1958. *Sir Isaac Newton's Letters and Papers on Natural Philosophy*, ed. I. Bernard Cohen with R. Schofield. Cambridge, Mass.: Harvard University Press.
- Plekhanov, Georgi. 1934. *Essays on the History of Materialism*, trans. R. Fox (original publication, 1896). London: Jonathan Lane.

- Pluquet, François-André-Adrien, Abbé. 1788. *Mémoires pour servir à l'histoire des égarements de l'esprit humain par rapport à la religion chrétienne: ou Dictionnaire des hérésies, des erreurs et des schismes* (1762). Sedan: Charles Morin.
- Pope, Alexander. 1735. *Letters of Mr. Pope and Several Eminent Persons: From the Year 1705 to 1735*. London: F. Cooper
- Pope, Alexander. 1958. *An Essay on Man*, ed. M. Mack. New Haven: Yale University Press.
- Priestley, Joseph. 1775. *Hartley's Theory of the Human Mind, on the Principle of the Association of Ideas, with Essays relating to the Subject of it*. London: J. Johnson.
- Quine, W.V.O. 1981. *Theories and Things*. Cambridge, Mass.: Harvard University Press
- Rumore, Paola. 2013. *Materia cogitans: l' Aufklärung di fronte al materialismo*. Hildesheim: Georg Olms.
- Ruse, Michael. 2000. *Can a Darwinian be a Christian?* Cambridge: Cambridge University Press.
- Ruyer, Raymond. 1933. Ce qui est vivant et ce qui est mort dans le matérialisme. *Revue philosophique* 116(7-8): 28-49
- Sartre, Jean-Paul. 1990. Matérialisme et révolution (1946), in *Situations philosophiques*, 81-140. Paris: Gallimard
- Schliesser, Eric. 2011. Without God: Gravity as a Relational Quality of Matter in Newton. In *Vanishing Bodies in Early Modern philosophy*, eds. Dana Jalobeanu and Peter Anstey, 80-102. London: Routledge.
- Schopenhauer, Arthur. 1977. *Zürcher Ausgabe. Werke in zehn Bänden*, ed. Arthur Hübscher with Angelika Hübscher, Claudia Schmölders, Fritz Senn and Gerd Haffmanns. Zürich: Diogenes
- Secrétan, Catherine, Dagon, Tristan and Bove, Laurent, eds. 2007. *Qu'est-ce que les Lumières 'radicales' ? Libertinage, athéisme et spinozisme dans le tournant philosophique de l'âge classique*. Paris: Éditions Amsterdam.
- Stancati, Claudia. 2001. *Dissertation sur la formation du monde (1738); Dissertation sur la résurrection de la chair (1743): manuscrits du recueil 1168 de la Bibliothèque Mazarine de Paris*. Paris: Champion.
- Toland, John. 1704/1976. *Letters to Serena*. London: B. Lintot; reprint, New York: Garland.
- Varela, Francisco, Petitot, Jean & Roy, Jean-Michel, eds. 1999. *Naturalizing Phenomenology*. Stanford: Stanford University Press.
- Vartanian, Aram. 1982. Quelques réflexions sur le concept d'âme dans la littérature clandestine. In *Le matérialisme du XVIII<sup>e</sup> siècle et la littérature clandestine*, ed. O. Bloch, 149-165. Paris: Vrin.
- Vassails, Georges. 1951. L'Encyclopédie et la physique. *Revue d'histoire des sciences* 4: 294-323

- Vitzthum, Richard.C. 1995. *Materialism: An Affirmative History*. Amherst, NY: Prometheus Books.
- Vogt, Carl. 1874. *Physiologische Briefe*, 14<sup>th</sup> ed. (original, 1847). Gießen: Rickersche Buchhandlung.
- Vogt, Carl. 1875. *Lettres physiologiques*. Paris: Reinwald
- Warman, Caroline, 2002. *Sade: from materialism to pornography*. Oxford: Voltaire Foundation.
- Whytt, Robert. 1768. *The Works of Robert Whytt, M.D., published by his son*. Edinburgh: J. Balfour.
- Wolfe, Charles T. 2007. Determinism/Spinozism in the Radical Enlightenment: the cases of Anthony Collins and Denis Diderot. *International Review of Eighteenth-Century Studies* 1: 37-51
- Wolfe, Charles T. 2014. Epigenesis as Spinozism in Diderot's biological project. In *The Life Sciences in Early Modern Philosophy*, eds. Ohad Nachtomy and Justin E.H. Smith, 181-201. Oxford: Oxford University Press
- Wolfe, Charles T. 2015. (ms). Varieties of vital materialism.
- Wright, John P. 1991. Locke, Willis and the Epicurean soul. In *Atoms, pneuma and tranquility. Epicurean and Stoic themes in European thought*, ed. M. Osler, 239-258. Cambridge: Cambridge University Press
- Wunderlich, Falk. 2015. (ms.). Materialism in late Enlightenment Germany. A neglected tradition reconsidered. *British Journal for the History of Philosophy*, forthcoming.

