



Hobbes's materialism and Epicurean mechanism

Patricia Springborg

To cite this article: Patricia Springborg (2016) Hobbes's materialism and Epicurean mechanism, *British Journal for the History of Philosophy*, 24:5, 814-835, DOI: [10.1080/09608788.2016.1212699](https://doi.org/10.1080/09608788.2016.1212699)

To link to this article: <http://dx.doi.org/10.1080/09608788.2016.1212699>



Published online: 27 Sep 2016.



Submit your article to this journal [↗](#)



Article views: 120



View related articles [↗](#)



View Crossmark data [↗](#)

ARTICLE

Hobbes's materialism and Epicurean mechanism

Patricia Springborg

Centre for British Studies, Humboldt University, Berlin, Germany

ABSTRACT

Hobbes belonged to philosophical and scientific circles grappling with the big question at the dawn of modern physics: materialism and its consequences for morality. 'Matter in motion' may be a core principle of this materialism but it is certainly inadequate to capture the whole project. In wave after wave of this debate the Epicurean view of a fully determined universe governed by natural laws, that nevertheless allows to humans a sphere of *libertas*, but does not require a creator god or teleology to explain it, comes up against monotheism and its insistence on the incoherence of an ordered world in the absence of a God and his purposes. The following questions were central to this debate: (1) Can we understand the universe as law-governed in the absence of a god? (2) If so, what room is there in a fully determined mechanical universe for human freedom? (3) If humans do enjoy freedom, does the same hold for other animals? (4) Is this freedom compatible with standard views of morality? (5) Is there an analogue between the material world as law-governed and human social order? (6) If so does it also obtain for other animals?

ARTICLE HISTORY Received 13 July 2015; Revised 29 April and 28 May 2016; Accepted 11 July 2016

KEYWORDS Hobbes; materialism; Epicurean mechanism; *libertas*; other animals

If there is a single thinker who demonstrates the merit of cautions from the *Begriffsgeschichte* tradition of intellectual history about differentiating between how thinkers in question saw their projects and categorized them and how later analysts categorize them, it is Thomas Hobbes. Falk Wunderlich wisely entitles his Introduction to this special issue of the *BJHP* 'Varieties of Early Modern Materialism'. One has only to consider the difference between 'dialectical materialism' so-called (a term that Marx in fact never used), quite foreign to the issues addressed here and without anticipation among the thinkers we consider, to see how vast is the terrain that 'materialism' can cover. More importantly, very few of the thinkers we survey here saw themselves as 'materialists' at all, and La Mettrie in the eighteenth century seems to have been the first to have referred to himself as such. 'Man-machine theorist'

CONTACT Patricia Springborg  springbp@hu-berlin.de

© 2016 BSHP

was a term applied to and sometimes used by eighteenth-century French materialists, La Mettrie, Helvétius and d'Holbach, to refer to themselves, taking its origin from La Mettrie's famous work, *L'homme Machine* of 1747 which radicalized Descartes's hypothesis of animals as machines by extending it to humans, and denying the existence of the soul as a substance separate from matter. Technically this was a form of materialism, but usually not to be named as such, even by Hobbes, who had made it so notorious, because materialism smacked of atheism. 'Man-machine' theorists like Helvétius (and I use the term advisedly, simply because he participated in the debates around La Mettrie's text) took positions strikingly similar to Hobbes, who was too dangerous to name by virtue of having been incorporated into the demonology of popular and clandestine literature as an atheist and one of the 'three imposters', which included Spinoza and variously Hobbes's friend Edward Herbert, or Descartes (Malcolm, 'European Republic of Letters', 480–1). Helvétius, in particular, seems to have been a proxy for Hobbes and was critiqued by other *Philosophes* like Diderot and Rousseau as such, as Sophie Audidière's chapter would suggest.¹

My claim might be judged as Anglo-biased, overstating Hobbes's salience on the Continent. But that would be to miss the significance of the Latin editions of his works which were precisely targeted at a Continental audience for whom Latin was the language of the Republic of Letters, and among whom Leibniz, and later Voltaire, seem to have been unusual in being able to read English (Malcolm, 'European Republic of Letters', 462). *De Cive* was something of a best-seller whose printing history took place entirely on the Continent. Samuel Sorbière's first edition of 1642, promoted by Mersenne, had been followed by a second enlarged edition published by Elzevier in Amsterdam in 1647, which immediately sold out, was reset and republished in the same year, followed by further printings 'in 1657 (Amsterdam), 1760 (Amsterdam), 1696 (Amsterdam), c.1704 (Halle), 1742 (Amsterdam?), 1760 (Lausanne) and 1782 (Basel)' (Malcolm, 'European Republic of Letters', 459). The Dutch Calvinist Gijsbert Cocq's observation in 1668 that demand could not keep up with supply, and that 'copies of *De cive* were being worn out with use by many hands', was complemented by fears expressed by the Lutheran Adam Rechenberg from Leipzig in 1674 that the doctrines of *Leviathan* were being too widely disseminated, 'especially because those accursed books are now being sold with impunity in Germany and worn out

¹Sophie Audidière, in a private communication (8 April 2016), agrees that it is quite possible that Helvétius was read as a proxy for Hobbes, noting a chain of references centering on Hobbes's aphorism 'malus est robustus puer', that would suggest this was self-conscious. In *De l'homme*, Helvétius quotes Hobbes's aphorism 'malus est robustus puer', that the evil man is simply a vigorous child, from *De Cive* in Sorbière's translation, to develop Hobbes's position, while Diderot, in the *Encyclopaedia*, article 'Hobbisme', quotes the same phrase, but misreads it (maybe on purpose, as Audidière notes). And in the *Réfutation d'Helvétius*, Diderot repeats his misinterpretation of Hobbes, specifically in opposition to Helvétius, whose position he presumably knows is almost indistinguishable from that of Hobbes.

with use even by the hands of students' (Malcolm, 'European Republic of Letters', 471). So much so that in 1711 the Elector of Saxony, Friedrich Augustus, actually stepped in to prevent a reprinting in Germany of the anthology of Hobbes's main works, the *Opera philosophica* of 1668 (Malcolm, 'European Republic of Letters', 461). Library holdings would certainly support the 'use by many hands' hypothesis and Malcolm cites Yves Glaziou's, *Hobbes en France* analysis of 38 catalogues of French eighteenth-century private libraries of which 10 had *De cive* in Latin, 14 in French, 13 the *Opera philosophica* (which contains it), while 3 had the Latin *Leviathan*, 1 *De corpore* and 1 *De homine*. And should private collections be thought of as less representative, a similar distribution emerges from the 'Catalogue collectif de la France', listing the holdings of 55 public libraries: which include 36 copies of *De cive* in Latin, 37 in French, 14 copies of the *Opera philosophica* (which contains it), 5 of the Latin *Leviathan*, 5 of *De corpore* and 5 of *De homine* (Malcolm, 'European Republic of Letters', 460).

Why should Hobbes have been so salient? Hobbes was a philosopher whose fame was spread as much by his enemies as by his friends and, leaving aside for the moment their own considerable merit, it was precisely because his works were proscribed, placed on the Catholic Index, not to speak of book-burnings in London, that demand for them was ever-increasing. (Malcolm, 'European Republic of Letters', 471–2) analyses Hobbes's reception under three general categories: hostile critics, mainly clerics and academics, who regarded his views as extreme (part IV); radicals, who likewise propagated his views as anti-orthodox (part V); and those 'who made positive use of Hobbesian ideas, not in order to shake the foundations of orthodox belief, but rather to develop arguments and positions that belonged within the intellectual mainstream' (part VI). By the 1670s and 1680s, however, precipitated by 'the scandal and horror provoked by the publication of Spinoza's major writings in the 1670s', Hobbes came to be seen as an extreme atheist, and Spinoza, in the words of the notorious Balthasar Bekker, as 'Hobbes's lick-spittle' (Malcolm, 'European Republic of Letters', 480–1) 'Linking Hobbes and Spinoza – and frequently Herbert – soon became a commonplace of polemical writing', now designed 'to construct a genealogy of modern atheism'. The 'three great imposters' were the target of a series of Lutheran professors or divines, Jakob Thomasius, as early as May 1670 at Leipzig, Christian Kortholt at the University of Kiel, Michael Berns at Dittmarschen, near Hamburg, and Ernst Kettner at the University of Leipzig: thus,

by the first decade of the eighteenth century, an entire canon of unorthodoxy had thus been established: according to writers such as Valentin Ernst Löscher in Dresden and Zacharias Grapius in Rostock, it ran from Pomponazzi, the early Socinians and Vanini, via Herbert, Descartes, Hobbes and Spinoza, to Bekker, Locke, and Toland.

(Malcolm, 'European Republic of Letters', 481)

According to Malcolm, the three main components of this 'atheistic' tradition were 'rationalism, naturalism, and anti-scripturalism', 'naturalism' being a synonym for 'materialism' and 'associated mainly with Hobbes and Spinoza' (Malcolm, 'European Republic of Letters', 481).

But his fame, or notoriety, does not mean that Hobbes's own position on materialism was straightforward. 'Mechanistic materialism', according to Wolfe,

holds that the world is material, and what it is to be material ... is to be exhaustively explainable in terms of shape, size and motion, with a further possible reduction towards a mathematization of such ... mechanistically construed matter.

(*Varieties of Vital Materialism*, 2)

If this is the case Hobbes is not a 'mechanistic materialist', for reasons that we will later discuss. But as Falk Wunderlich emphasizes in his Introduction, the problem of nomenclature is complicated by the fact that materialism was usually left to the critics to define. In this respect the works of Henry More, Robert Boyle and Ralph Cudworth in the 1670s are a spectacular example, where the target of their 'materialist' debates was precisely Hobbes. An ontological materialist of this text-book sort Hobbes was certainly not. He was however a self-confessed corporealist (Lupoli, 'Fluidismo', *Nei Limiti della Materia*; Leijenhorst, 'Hobbes's Corporeal Deity'), insisting that the entire universe is made of body and what is not body is not in the universe. Moreover he mooted the possibility of a 'corporeal God', a consideration he meekly proffered to Descartes in his 56 page letter of 5 November 1640, only to be met with a ferocious response.² But as with 'materialism', the term 'corporealism' was also left to his critics to define, and in this case the same critics. For Cudworth it denoted something very close to materialism, who declared: 'All Atheists are mere Corporealists, that is, acknowledge no other Substance besides Body or Matter ...' (Cudworth, *The True Intellectual System of the Universe*, bk. 1, Chapter 4, 187). The difference between 'ontological materialist' and 'corporealist' vanishes if we rely on Cudworth's definition. Small surprise, given that critics are not the most reliable guide to the thought of those whom they are vilifying!

Several factors speak against Hobbes being simply a 'mechanist', simply a 'materialist', or simply a 'corporealist'. The first is that, like the Epicureans, Hobbes also admitted 'corporeal spirits' (*Lev. xlvi*, §15, 371/459; Springborg, 'Hobbes's Challenge to Descartes'), which might be why he initially thought his suggestion might appeal to Descartes who, as a mechanist, came close to Hobbes's position. Descartes gave a vivid account of the body as a perpetual motion machine, comprising

²For the story of this extraordinary exchange, which I think left an indelible mark on the projects of both men, see Springborg, 'Hobbes's Challenge to Descartes'.

the beating of the heart and arteries ... the reception of the external sense organs of light, sounds, smells, tastes, heat and other such qualities, the imprinting of the ideas of these qualities in the organs of the 'common sense' and the imagination, the retention or stamping of ideas in memory, the internal movements of the appetites and passions, and finally the external movement of all the limbs.

(Descartes, AT 11:201, CSM 1:108)

Of this account Hobbes's own depiction of the man-machine as a sense-and-memory-receptor in his Introduction to *Leviathan*, 'the *heart*, but a *spring*; and the *nerves* but so many *strings*; and the *joints*, but so many *wheels*', is strikingly evocative.³ Similarly, Hobbes's account of 'spirit' as subtle or airy substance evokes Descartes's description of animal spirits as 'a very fine wind, or rather a very lively and pure flame' (AT 11:129, CSM 1:100) and again, as 'a certain very fine air or wind' (AT 11:331, CSM 1:330). Both the airy and flame metaphors were common in Epicurean accounts of the spirits, most notably in Lucretius's *De rerum natura*, but Hobbes's point in evoking them here, like his evocation of the man-machine image at the very outset of *Leviathan*, was, I believe, a polemical move against Descartes.

What tells most against any of the epithets his critics threw at him hitting the mark precisely is the fact that essential elements in Hobbes's ontology cannot be reduced to physical properties at all (Campbell, 'Materialism'). Most important of these is 'conatus' (effort, endeavour; impulse, inclination, tendency; undertaking; striving) or the innate inclination of a thing to continue to exist and enhance itself, which accounts for the wellsprings of motion (*De Corpore*, 1998, III, xiv, 2), a concept to which Descartes, Spinoza and Leibniz also subscribed. 'Conatus', referred to as 'ENDEAVOUR' in *Leviathan* is the general field of 'animal' and 'vital' motion, 'begun in generation and continued without interruption through their whole life' is instinctual and 'needs no help of imagination' (*Lev.* vi, §1, 23/27). But this general instinctual 'vital' or animal motion is also accompanied by a second form, 'voluntary motion, as to *go*, to *speak*, to *move* any of our limbs in such manner as is first fancied in our minds' (*Lev.* vi, §1, 23/27). Not only is 'the imagination ... the first internal beginning of all voluntary motion', but 'voluntary motions depend always upon a precedent thought of *whither*, *which way* and *what*' (*Lev.* vi, §1, 23/27), that is to say on the ability to deliberate and make means-ends calculations. As we shall see, 'voluntary motion' is a faculty which Hobbes credits not only to humans but also to other animals, which is problematic in terms of a materialist reduction, clearly telling against textbook definitions of 'materialism', 'mechanism' or 'corporealism' as involving only passive matter.

³Hobbes, *Leviathan*, Introduction, 1. Citations are to *Leviathan [1651], with selected variants from the Latin edition of 1668*, ed. Edwin Curley (Indianapolis, 1994) referencing chapter (small Roman numerals) section (§) pagination of the Head edition/and of the Curley edition.

Interestingly, as Wunderlich argues, the same could be said of almost every other materialist, from Collins and Toland via La Mettrie to Priestly, all of whom deny that matter is inherently passive. So, mechanical materialism turns out for them, as for Hobbes, to be a mere construct, at least in its strict form. For reasons which I will detail at length, I try to show that for Hobbes at least it is not sufficient to consider 'materialism' as a strictly ontological reduction. The role that imagination plays, together with his conception of voluntary motion, tell against it. Indeed, I go further, to claim that much of what we now classify as 'materialist' rather belonged to a project designed to answer a peculiar constellation of questions that arose concerning the ethical and religious ramifications of early modern (specifically Galilean) physics. Correspondingly, what we call 'materialism' among the ancients, Democritus, Epicurus, the Stoics, Sceptics and Roman Epicureans, turned on similar religious questions – not coincidentally, because the Renaissance recovery of their texts incentivized early modern 'materialists'.

Epicureanism, its acceptance or rejection, was a defining issue of the Renaissance as it rippled out from Italy to France, the Low Countries eventually to England and Germany, and a wealth of recent scholarship has dealt with its diffusion in its philosophical, scientific and linguistic aspects (Pacchi, 'Hobbes e l'epicureismo'; Paganini, 'Hobbes, Gassendi', 'Hobbes, Gassendi and the Tradition', 'Hobbes Among Ancient and Modern Sceptics', 'Passionate Thought', 'Political Animals in Seventeenth-century Philosophy'; Springborg, 'Hobbes's Theory', 'Hobbes and Epicurean Religion', 'Hobbes's Fool the *Stultus*', 'Hobbes's Challenge to Descartes', 'Hobbes calviniste?'; Fisher, *Pierre Gassendi's Philosophy and Science*; LoLordo, *Pierre Gassendi and the Birth*; Wilson, *Epicureanism at the Origins of Modernity*; Leddy and Lifshitz, *Epicurus in the Enlightenment*; Norbrook *et al.*, *Lucretius's and the Early Modern*). But often overlooked is the degree to which the ancient 'materialists' were attentive to the question of humans and other animals, for instance, the debate among the ancient Epicureans on whether all animals are capable of free will and contracting (Huby, 'The Epicureans'; Saylor, 'Man, Animal, and the Bestial in Lucretius's'; Shelton, 'Contracts with Animals'; Verlinsky, 'Do Animals Have Freewill?'), or whether this is a peculiarly human characteristic. It is increasingly clear that Hobbes was grappling with the big questions at the dawn of modern physics: materialism and its consequences for morality; and that he belonged to impressive circles of philosophers and new scientists so engaged. 'Matter in motion' may be a core principle but it is certainly inadequate to capture the whole project. The attraction of the Epicureans was that they clearly realized this and tried to address a particular constellation of problems in which the early moderns became very interested. The questions the atomists and the monotheists were eternally debating can be formulated as follows:

- (1) Can we understand the universe as law-governed in the absence of a god?
- (2) If so, what room is there in a fully determined mechanical universe for human freedom?
- (3) If humans do enjoy freedom, does the same hold for other animals?
- (4) Is this freedom compatible with standard views of morality?
- (5) Is there an analogue between the material world as law-governed and human social order?
- (6) If so does it also obtain for other animals?

We can now see that these were just the questions that the old atomists were asking, and that they came up with some ingenious answers. For instance, there has been much discussion about Epicurus's atomic 'swerve' as designed to inject randomness and chance (and therefore the opportunity for disorder) into a fully determined mechanical universe. But the classicists D. J. Furley, *Two Studies in the Greek Atomists* and A. A. Long, *Hellenistic Philosophy*, 'Chance and Natural Law in Epicureanism' are among the best advocates of the view that 'the swerve' was not intended to inject randomness and chance into the *material* universe, governed as it is by invariant natural laws, but rather to accommodate the peculiarity of human and animal behaviour, which is not determined in the same way, hence to explain morality and choice. This is still not the universal view, but it is far more powerful in its explanatory power than the alternatives, and it has been demonstrated with great clarity in the case of Epicurus and Lucretius's. Such a view has important consequences for our assessment of the human capacity for curiosity and knowledge, because it assumes that humans have real knowledge in real time of a material world in which they are permitted a sphere to create their own order. How is this human capacity for real knowledge accommodated in a universe in which humans are also 'material', that is to say 'bodies' and in which their contact with the external world comes about through the abrasion of material objects against the senses, body rubbing against body (*Lev. i, §4, 3–4/6–7*)? And what can we say about the truth value of sensations so produced, are they objective or subjective? If the latter, do we have to posit mind and reason as intermediaries?

If we look carefully at the views of Lorenzo Valla, Galileo Galilei, Pierre Gassendi, Marin Mersenne, René Descartes and Thomas Hobbes, we see that they were attentive to just these questions and I venture to say that this set of questions looms much larger on the agenda of early modernity than was previously acknowledged. Moreover, this cluster of views, held by most of those interrogated by the Inquisition or burned at the stake, was also defining for early modern heresy from the Council of Trent (1545–63) on. For instance, Giordano Bruno (1548–1600), who acknowledged the influence of Lucretius's, was briefly connected to English scientific circles during his time at Oxford, including Sir Philip Sidney (to whom he dedicated two works) and the alchemist, John Dee. He was convicted by the Jesuit Inquisitor, Cardinal Robert Bellarmine

(1542–1621), also involved in the long legal process commenced by the Inquisition in 1610 against Galileo, culminating in his trial of 1633; the same inquisitor to whom Hobbes addressed substantial argument in *Leviathan* (Springborg, ‘Thomas Hobbes and Cardinal Bellarmine’). The specific views for which they were convicted were subscription to a heliocentric universe, belief in the plurality of worlds and that the universe is infinite, views which Hobbes shared. But Bruno, like Hobbes, also held heretical opinions about the Trinity, the divinity of Christ, the virginity of Mary, the Incarnation, and was convicted of Arianism, for which he burned. A fate that Hobbes feared for himself!

From the early work of Frithiof Brandt, who saw Hobbes’s materialism as a form of ‘motionalism’ driven by a relentless ‘mechanism’ (Brandt, *Thomas Hobbes’ Mechanical Conception of Nature*, 124, 156), commentators have observed the peculiar way in which Hobbes’s ideas cluster and tried to explain their provenance. ‘Materialism’ framed in this way is the red thread running through all Hobbes’s works, from the optics, his early response to Descartes and debate with Bishop Bramhall, and all three of his political treatises, *The Elements of Law, Natural and Politic* (1640), *De cive* (1642) and *Leviathan* (1651). It is also the reason for Hobbes’s fear of heresy charges and the seven works that this fear may be said to have occasioned: his *Response to Bramhall’s ‘The Catching of Leviathan’*, written in 1666–7; the Chatsworth MS on Heresy of 1673; his *Historical Narration Concerning Heresy* of 1668; *De Haeresi*, his Appendix to the Latin *Leviathan* of the same year; the *Dialogue Concerning the Common Laws*, written after 1668; *Behemoth*, written between 1668 and 1670; and the *Historia Ecclesiastica*, probably completed by 1674. My overview will try to show that Hobbes, who worked so diligently along the track of the ancients, nevertheless produced anomalies with which we are still dealing. They raise different although related questions:

- (a) Why did Hobbes confuse the issue by referring to the laws of human society as ‘natural laws’ a term reserved by the ancients for the laws of the material universe?
- (b) Did he moralize behaviour that is common to humans and other animals?
- (c) Does his Epicurean notion of the will as ‘the last appetite’ put legs that are too slender under the social contract, also an Epicurean construction?

In answer to (a), one can claim that Hobbes, although understood as working within the more anthropological understanding of the natural law tradition pioneered by Hugo Grotius (Springborg, ‘Hobbes’s Fool the Stultus’), may have deliberately invoked the Epicurean scientific sense of ‘natural law’ when describing the fundamental laws of human society as a way of accommodating human behaviour to the law of the universe: ‘matter in motion’. Hobbes subscribed to the axioms of Epicurus’s *Kuriiai Doxai* (Springborg, ‘Hobbes and Epicurean Religion’), including the first two

'natural laws or necessary truths', that 'nothing comes into being out of nothing' and that 'nothing is reduced to nothing' (Long, 'Chance and Natural Law in Epicureanism', 77). In Chapter 46 of *Leviathan* he specified his initial thesis of the law of the universe being 'matter in motion', stating that the entire universe is made of body and what is not body is not in the universe, meaning, as Bramhall, *A Defence of True Liberty* pointed out, that God, angels, and demons, are either bodies or they do not exist. Only bodies can be perceived by the senses, have mass and can move other bodies:

The world (I mean not the earth only, ... but the *universe*, that is, the whole mass of all things that are) is corporeal (that is to say, body) and hath the dimensions of magnitude (namely, length, breadth, and depth). Also, every part of body is likewise body, and hath the like dimensions. And consequently, every part of the universe is body, and that which is not body is no part of the universe. And because the universe is all, that which is no part of it is nothing (and consequently, nowhere). Nor does it follow from hence that spirits are nothing. For they have dimensions and are really bodies (though that name in common speech be given to such bodies only as are visible or palpable, that is, that have some degree of opacity).

(Hobbes, *Lev.* xlvi, §15, 371/459)

Among the ancient atomists it seems likely that Democritus had already established the view that everything that happens in the world, including human and animal behaviour, is the product of previous complexes of atomic movements (Long, 'Chance and Natural Law in Epicureanism', 75). And it is generally agreed that Epicurus, intent on countering the deists, subscribed to Democritus' view, denying that the behaviour of stars and animals must be explained by final causes, yet seeking to preserve the notion of freedom by introducing the notion of the atomic 'swerve'. Perhaps Democritus had already paved the way for this notion with the introduction of the concept of 'luck' (*tuche*), although as Long makes clear, Democritus' usage of this word refers to 'undiscovered causes and not indeterminateness' (Long, 'Chance and Natural Law in Epicureanism', 69). Plutarch (ca. 45–120 AD), in a contentious passage in *On the intelligence of animals* (964c = Usener, *Epicurea*, 351) describes Epicurus's enemies as vehemently disallowing the least swerve 'so that stars and animals and *tuche* might be introduced and human autonomy not be destroyed' (Long, 'Chance and Natural Law in Epicureanism', 70). And from Lucretius's comments on the atomic swerve it is clear that he believed it is inferred not from purely contingent events in the *material* world, but from the '*libera voluntas*' of the *animal* world (Long, 'Chance and Natural Law in Epicureanism', 71).

Hobbes was syncretistic in his adoption of ancient views, and although his theory of the vacuum was debated by members of his circle in terms of whether it was strictly Epicurean or not, the atomic swerve does not feature in his system. Epicureanism underwent a transformation with Galileo in

terms of the way in which ‘matter in motion’ was theorized. But it remains the case, I believe, that early modern scientists turned to it as a way of accommodating human and animal behaviour to the law of the universe that did not require a crude reductionism, creating a space for human freedom and the specificity of choice. So, for instance, when writing technically about the causes of human action, as Long points out, Epicurus is not focused on a simple binary distinction between ‘chance’ and ‘necessity’, but rather a three-fold typology comprising ‘the cause in ourselves’, the ‘nature’ we have inherited, and external necessity (34.27; 34.33 Arrighetti, see also, Lucret. ii. 284–92; Long, ‘Chance and Natural Law in Epicureanism’, 70). Such a typology describes Hobbes’s own approach to human behaviour, which the simple dichotomy between freedom and necessity, although the subject of an early and important debate with Bramhall, does not capture. Other scholars have noted that materialist reductionism does not adequately describe Hobbes’s approach. The very fact that in the Introduction to *Leviathan* Hobbes promises to treat of man both as ‘matter’ and ‘artificer’ (III, x; Arp, ‘Re-thinking Hobbes’, 19),⁴ noting that ‘civil philosophy is demonstrable because we make the commonwealth ourselves’ (I, 184; Arp, ‘Re-thinking Hobbes’, 19), speaks against ‘the Hobbesian individual [being] ... simply the effect of some physics’ (Arp, ‘Re-thinking Hobbes’, 19). As Arp insists, ‘Hobbes’s treatment of morality and politics cannot be considered as reducible to or even arising from a *purely* materialistic outlook’ (Arp, ‘Re-thinking Hobbes’, 19). Specifically, ‘[t]he passions of pleasure and pain exist within a framework of complex human nature and manifest themselves in the context of complex social interactions that include physical as well as other natural and artificial elements’ (Arp, ‘Re-thinking Hobbes’, 19). Noting that Hobbes’s central non-materialist categories like ‘self-preservation, fear and peace [would seem to be] ... rooted in the kind of Aristotelian/Scholastic teleology Hobbes so vehemently rejects (e.g. I, 127–8, 131; VII, 82)’, Arp, cites Cees Leijenhorst, who argues that Hobbes “‘exploit[s] possibilities that are given within the Aristotelian tradition”, thus ‘retain[ing] some of the framework he seeks to replace’ (Arp, ‘Re-thinking Hobbes’, 19, citing Leijenhorst, ‘Hobbes’s Theory of Causality’, 435).

1. Hobbes on the ‘passionate thought’ of human beings and other animals

The answer to (b) whether Hobbes moralized behaviour that is common to humans and other animals, must be given in the affirmative, and scholars such as Sorell, ‘Hobbes’s Scheme of the Sciences’, Strauss, *The Political*

⁴When quoting Arp, ‘Re-thinking Hobbes’, I cite Hobbes’s works as he cites them, from the Molesworth *English Works of Thomas Hobbes* (1839–1845) (*EW*), giving volume in Roman and page numbers; and from the Wordsworth edition of Hobbes’s *Opera Philosophica* (1839).

Philosophy of Thomas Hobbes and Green, Hobbes and Human Nature (86–7) emphasize ‘teleological factors in Hobbes’s metaphysics that make an ontological mechanist reading of his doctrines inappropriate’ (Arp, ‘Re-thinking Hobbes’, 20). While Hobbes maintains that ‘there is no such ... *Summum Bonum*, as is spoken of in the Books of the old Moral Philosophers’ (Hobbes *EW* III, 85; IV, 32), his ‘subjectification of good and evil relative to each individual’s bodily experience’ allows “‘the greatest good’ for each individual person; namely “his own preservation” (Hobbes, *EW* II, 9; III, 116; IV, 83) or *sibi bonum* (Arp, ‘Re-thinking Hobbes’, 21). At the same time, Hobbes’s redescription of good and evil in terms of the pursuit of pleasure and avoidance of pain, represents an effort to come ever closer to a materialist understanding that ‘each individual is the supreme judge of moral matters ... based upon the “here-and now” of experienced passion’ (Arp, ‘Re-thinking Hobbes’, 21). Hobbes reworked the concept of the circulation of the blood, pioneered by Harvey and Descartes, to produce a ‘heart-centred’, rather than ‘brain-centred’, account of ‘deliberation’ in terms of the push and pull of pleasure and pain in alternating sequences of deliberation, the last of which constitutes ‘the will’, always directed at ‘self-preservation’. With this ‘vitalist’ reduction Hobbes achieves two things: first the *subjectification* of ‘matter in motion’, or the principle of the universe, as the principle of *human* life; and second as the principle of life *experienced as such*, so that ‘the simple sensation that is felt by the heart pumping is something that is desired as pleasurable: “not to feel is not to live”’ (Hobbes, *EW* III, 38; IV, 31, 58; Arp, ‘Re-thinking Hobbes’, 21). The *sibi bonum* is differentiated from the *summum bonum* of the old philosophers in being a modality rather than a goal, and that very modality by which ‘matter in motion’ for humans is characterized:

Felicity is a continuall progresse of desire, from one object to another; the attaining of the former, being still the way to the latter. The cause whereof is, That the object of mans desire, is not to enjoy once onely, and for one instant of time; but to assure for ever, the way of his future desire.

(Hobbes, *EW* III, 85; Arp, ‘Re-thinking Hobbes’, 22)

Arp acknowledges a paradox in the way in which Hobbes himself treats this reduction of the *summum bonum* to *sibi bonum* (Hobbes, *EW* II, 8, 12; III, 176; IV, 83), claiming one minute that individual ‘ends’, *sibi bonum*, are morally denaturalized as ‘principally their owne conservation, and sometimes their delectation only’ (Hobbes, *EW* III, 111; Arp, ‘Re-thinking Hobbes’, 22): ‘For if the end be final, there would be nothing to long for, nothing to desire’ (Hobbes, *EW* IV, 32–3). But at other times that *sibi bonum* might also count as teleology, claiming in the *Elements* that a ‘final cause has no place but in such things as have sense and will’ (Hobbes, *EW* I, 132) and ‘that final causes have a place only in “moral philosophy”’ (Hobbes, *EW* VII, 82) (Arp, ‘Re-thinking Hobbes’, 22). In other words, Hobbes finds a new use for the

scholastic terminology of final causes to describe not divine design, but the *hubris* of purposeful *human* behaviour capable of grandiose projects of which other animals would never dream. Hobbes refuses to complete the materialist reduction due to his interest in other observable features of human nature and, in particular, human beings as creatures of the imagination and 'beings of reason that can use this rational capacity to contract into social relationships ... a reality that runs contrary to a human's natural deterministic instinct to be anti-social, and ... a non-material part of human nature' (Arp, 'Re-thinking Hobbes', 31). As we shall see, the ability to contract is precisely where the mechanist project falls down.

Hobbes moralizes human behaviour, despite his efforts at a materialist reduction in terms of a 'heart-centred physiology', and despite the fact that, in contrast to Descartes, he minimizes the difference between the cognitive capacities of man and other animals, attributing to them also the capacity for cause-effect and means-ends calculations. In *Leviathan* Chapter 3, where Hobbes speaks of 'Train[s] of Imagination', he distinguishes two types. The first is the search for causes which is common to all animals, presumably because self-preservation requires it. The second is a generalized curiosity that transcends the requirements of basic need satisfaction (objects of 'hunger, thirst, lust and anger'), accounting for the great achievements and catastrophic failures of humans, compared with other animals:

The train of regulated thoughts is of two kinds: one, when of an effect imagined, we seek the causes, or means that produce it; and this is common to man and beast. The other is when, imagining anything whatsoever, we seek all the possible effects that can by it be produced; that is to say, we imagine what we can do with it, when we have it. Of which I have not at any time seen any sign, but in man only; for this is a curiosity hardly incident to the nature of any living creature that has no other passion but sensual, such are hunger, thirst, lust and anger.

(Hobbes, *Lev.* iii, §5, 9/13)

The first 'train of regulated thoughts' which humans share with other animals is primary, as the 'passionate thought' involved in 'seeking', which at once expresses the curiosity of man and animal so important to self-preservation and as well as being the source of all human invention. It elicits from Hobbes one of his most vivid and memorable series of images:

In sum, the discourse of the mind, when it is governed by design, is nothing but *seeking*, or the faculty of invention, which the Latins call *sagacitas*, and *solertia*; a hunting out of the causes of some effect, present or past, or of the effects of some present or past cause. Sometimes a man seeks what he has lost, and from that place and time wherein he misses it ... his thoughts run over all the parts of it, in the way one would sweep a room to find a jewel, or as a spaniel runs all over a field till he picks up a scent, or as a man might run through the alphabet to makes a rhyme.

(Hobbes, *Lev.* iii, §5–6, 10/13)

In *Leviathan* Chapter 8, on the intellectual virtues and vices, Hobbes returns to the image of the spaniel sniffing out a field until he picks up a scent, to connect 'things desired' as the objects of 'seeking': 'thoughts are to the desires as scout and spies, to range abroad and find the way to the things desired' (*Lev.* viii, §16, 35/41): 'The secret thoughts of a man run over all things, holy, profane, clean, obscene, grave and light, without shame or blame; which verbal discourse cannot do ...' (*Lev.* viii, §10, 34/39–40). The point of the image is not the powerfully evocative 'secret thoughts' which humans and animals share as a consequence of their lusts, but rather the capacity for speech which divides them. Speech, and particularly rhetoric, having the power to systemically distort objects of fear, make the real distinction between humans and other animals. And only speech makes possible the second 'train of regulated thoughts' which is characteristically human, involving reconstructions of the past 'supposing like events will follow like actions' (*Lev.* iii, §7, 10/13). But as in the case of all attempts to project the past into the future, this particularly human propensity is fraught with uncertainty, leading to systematic distortion and overstatement which are not characteristic of the behaviour of other animals.

Keeping in mind the consequences of the twin trains of imagination in conjunction with Hobbes's resort to sovereign power to solve the problem of truth, we can now give this an ontological underpinning. Sensations or phantasms are such that their occurrence, whether in dreams or in waking, is fully determined by material cause-event sequences in which matter-in-motion, conveyed through the nerves and strings of the bodily cognitive apparatus, produces them involuntarily for humans as for other animals. No external authority has any more power over our sensations or phantasms than we do. Because these phantasms have an irreducibly subjective aspect – they are a function of the excitation of the subject in response to external stimuli – they are unreliable as a faithful representation of the object, if this were even possible. But, in the absence of a criterion, authority can supply it, and this too can be deduced.

Just as surely as the subject can deduce that in the absence of an immediate correspondence between a thing and our cognition of it, reason must make up the deficit, so individuals in the struggle for life and death that constitutes the state of nature can calculate from their own situation to that of others and arrive at a solution of maximum benefit for minimum risk as a strategy for survival. This calculation involves the erection of a sovereign as guarantor of the individual, but unstable, pacts that individuals make between themselves. In this way the dualism of Hobbes's system, that admits a public creed and private doubt, is endemic, underpinned by a carefully elaborated materialist ontology and mechanistic psychology, spelled out in a nominalist epistemology. Hobbes's systematic doctrine of 'the deception of sense', illustrated by appeal to dreams and other experiences of illusion, as

a corollary enhances the power of reason and will. And sovereign power is the ultimate expression of will.

3. Hobbes on determinism, freedom and the problem of the will

Hobbes's solution to the existential problem of self-preservation in the form of a social contract that empowers a sovereign is nevertheless achieved at quite a cost, and that is to elevate the concept of will, a concept Hobbes otherwise has worked to minimize (Springborg, 'Liberty Exposed'). For, one could say that his rejection of the scholastic 'faculty of the will' as a fictitious entity more properly treated as the last event in a cause-event sequence, was a break-through for Hobbes, which Bishop Bramhall was the first to see. Hobbes 'confounds the faculty of the will with the act of volition', Bramhall complained in his *Defence of True Liberty* of 1655 (see also Hobbes, *EW V*, 360). By failing to acknowledge that volitions arise 'from the faculty or from the power of willing, which is in the soul', he further denies 'the power of the reasonable soul', owed to God 'who created and infused the soul into man, and endowed it with this power', Bramhall declared (Hobbes, *EW V*, 373). The scholastic doctrine of 'free will' was indeed just what Hobbes denied, parrying Bramhall with the concession that, if 'I have confounded the *faculty* of the *will* with the *act* of *volition*', then 'I must therefore have departed very much from my own principles', chief of which is to deny that there is any such thing as 'a *faculty* of the *will*' (Hobbes, *EW V*, 378). But not always consistently. In *Elements*, 22.2.127c, where he treats sovereignty by acquisition, Hobbes makes what 'appears to be a slip' (Skinner, *Hobbes and Republican Liberty*, 23), in distinguishing momentarily between a 'voluntary act of subjection', on the one hand, and 'yielding by compulsion', on the other the old Aristotelian distinction between voluntary and involuntary behaviour. But I disagree. Hobbes does quite clearly admit voluntary motion, for humans and animals as we have seen (*Lev.* vi, §1, 23/27), and although paying lip-service to it, never fully embraced the 'materialist' (Stoic, Sceptic and Epicurean) notion whereby judgment is the last movement of the mind, determined by will as the last appetite, if indeed they did themselves!

In the *Elements* we have further evidence of a residual scholastic account in Hobbes's characterization of freedom in the state of nature as a state of 'blameless liberty', or positive freedom (Hobbes, *El.* 14.6), in which the agent enjoys 'natural liberty', defined as the liberty 'of governing himself by his own will and power' (Hobbes, *El.* 15.13). Liberty, Hobbes defines at the opening of Chapter 14 of the *Elements*, as the liberty 'of using our own natural power and ability' (Hobbes, *El.* 14.6), which does in fact suggest the will as a faculty that one has the power to 'own'. It is true that one's 'own will and power' as the liberty 'of using our own natural power and ability' are terms that can be redescribed, consistent with a materialist ontology, as

epiphenomena, chains of causes belonging to a physiological mechanism, activated by sensation and terminating with action. This Hobbes already hints, although he is not yet at the point at which he gives such a redescription, which awaits *Leviathan*; while it is in *Questions concerning Liberty, Necessity and Chance* of 1656 that he supplied a full ontology and epistemology for the position on freedom of the will that he had taken in the debate a decade earlier. Ridiculing Bramhall in the latter work, as Skinner points out, Hobbes denies that a free agent is someone who acts according to his rational will. Since deliberation takes the form of ‘alternate appetite, and not ratiocination’, there can be no such thing as ‘rational will’ (Hobbes, *EW V*, 450, 234; Skinner, *Hobbes and Republican Liberty*, 33–4). A free agent is simply someone who ‘can write or forbear, speak or be silent, according to his will’ and nothing more (Hobbes *EW V* 38, 50). Moreover, to say of an agent that in acting according to his will he acts according to his last appetite does not distinguish him from other animals, ‘for appetite and will in man and beast’ are ‘the same thing’ (Hobbes, *EW V*, 365, see also 35).

Skinner (*Hobbes and Republican Liberty*, 34) observes: ‘With these shockingly reductionist observations about the geography of the human soul, Hobbes rests his case’. But, I would suggest, this was no idle observation on Hobbes’s part for, in the *Elements* (Hobbes, 1640 xix, 4–5), he had already undertaken a critique of Aristotle’s *zoon politikon* precisely to show that, when it came to a comparison between humans with other animals, animals as spontaneously political creatures came off best. No one has so far noticed that this is one of the best cases of Hobbes adopting Epicurean presuppositions against the Aristotelians. The passage follows the structure of Lucretius’s *De rerum natura*, but takes the unusual step of comparing the human propensity for competition and conflict that grows simultaneously as social organization develops, ‘with living creatures irrational, that nevertheless continually live in such good order and government, for their common benefit, and are so free from sedition and war amongst themselves, that for peace, profit, and defence, nothing more can be imaginable’ (Hobbes, *El.* 19.4). And here Hobbes takes the example of ‘that little creature the bee, which is therefore reckoned amongst *animalia politica*’ by Aristotle in the *Politics* (1.2.1253a, 7–18):

Why therefore may not men, that foresee the benefit of concord, continually maintain the same without compulsion, as well as they? To which I answer, that amongst other living creatures, there is no question of precedence in their own species, nor strife about honour or acknowledgment of one another’s wisdom, as there is amongst men; from whence arise envy and hatred of one towards another, and from thence sedition and war.

(Hobbes, *El.* 19.4)

A lengthy passage follows in which Hobbes itemizes one by one the further reasons why the ‘good order and government’ that animals achieve

spontaneously, can only be achieved by human beings 'artificially', an argument absolutely consistent with his position that, being instinctually weak, humans pursue projects of the imagination to a much greater extent than other animals (*Lev.* iii, §5, 9/13; iii, §7, 10/13; vi, §1, 23/27), and that these projects can be catastrophic:

Secondly, those living creatures aim every one at peace and food common to them all; men aim at dominion, superiority, and private wealth, which are distinct in every man, and breed contention. Thirdly, those living creatures that are without reason, have not learning enough to espy, or to think they espy, any defect in government; and therefore are contented therewith; but in a multitude of men, there are always some that think themselves wiser than the rest, and strive to alter what they think amiss; and divers of them strive to alter divers ways; and that causeth war. Fourthly, they want speech, and are therefore unable to instigate one another to faction, which men want not. Fifthly they have no conception of right and wrong, but only of pleasure and pain, and therefore also no censure of one another, nor of their commander, as long as they are themselves at ease; whereas men that make themselves judges of right and wrong, are then least at quiet when they are most at ease. Lastly, natural concord, such as is amongst those creatures, is the work of God by way of nature; but concord amongst men is artificial, and by way of covenant. And therefore no wonder if such irrational creatures as govern themselves in multitude, do it much more firmly than mankind, that do it by arbitrary institution.

(Hobbes, *El.* 19.4)

Concord among men is only possible through the creation of an artificial body by covenant,

And that this may be done, there is no way imaginable, but only union; which is defined Chap XII, sect. 8, to be the involving or including the wills of many in the will of one man, or in the greatest part of any one number of men, that is to say, in the will of one man, or of one COUNCIL.

(Hobbes, *El.* 19.4)

Hobbes has no other way of accounting for the 'artificial' concord 'by way of covenant' that substitutes 'arbitrary institution' for the natural concord among other creatures, except by appeal to the 'faculty of will':

And though the will of man, being not voluntary, but the beginning of voluntary actions, is not subject to deliberation and covenant; yet when a man covenanteth to subject his will to the command of another, he obligeth himself to this, that he resign his strength and means to him, whom he covenanteth to obey; and hereby, he that is to command may by the use of all their means and strength, be able by the terror thereof, to frame the will of them all to unity and concord amongst themselves.

(Hobbes, *El.* 19.4)

When in the *Elements*, Hobbes describes the mechanism by which the covenant is brought into being, through promising, he seems to be trying to avoid

appeal to the notion of a faculty of the will. 'Promises, therefore, upon consideration of reciprocal benefit, are covenants and signs of the will, or last act of deliberation, whereby the liberty of performing or not performing, is taken away, and consequently are obligatory'; and Hobbes adds: 'For, where liberty ceaseth, there beginneth obligation' (Hobbes, *El.* 15.8–9). It is this addendum that is problematic. Skinner (*Hobbes and Republican Liberty*, 45) refers to it as another Hobbesian 'slip', repeated in *De cive* (Hobbes *DC*, 2.10: 'ubi enim libertas desinit, ibi incipit obligatio') and corrected only in *Leviathan* Chapter 14, where Hobbes gives a behavioural account of covenanting: 'he that renounceth or passeth away his right giveth not to any other man a right which he had not before (because there is nothing to which every man had not right by nature), but only standeth out of his way' (*Lev.* xiv, §6, 64/81). If this is another 'slip', it also bespeaks a fundamental contradiction. For, if this last act of will is simply the final act in a series driven for man, as for other animals, by fear and appetite, then there is no reason to moralize it; and the 'obligation' that steps so conveniently into the space vacated by liberty, can be renounced as soon as it becomes expedient to do so. The contradiction arises because the whole purpose of Hobbes's comparison between humans and other animals is to show precisely that a voluntary act of covenanting is necessary for humans to contract an obligation, without which a man 'out of all covenants obligatory to others', is 'free to do, and undo, and deliberate as long as he listeth' (Hobbes *El.* 20.18). And Hobbes does not simply leave it at that, going on to show that covenanting is a more serious act of will than promising.

Covenanting is both a deliberate act and an act of deliberation over and above promising, because it binds in perpetuity, whereas in the case of promising: 'he that saith of the time to come, as for example, to-morrow: I will give, declareth evidently that he hath not yet given. The right therefore remaineth in him to-day'; for anyone who promises to give, 'so long as he hath not given deliberateth still' (Hobbes, *El.* 15.5; see also, *DC*, 2.8; Hobbes, 1996, Chapter 6, 44–5). But what does deliberation mean here? It seems to be the old Aristotelian meaning that implies a faculty of the will as concluding the deliberative process. Note that Hobbes goes on to say of animals: 'it is impossible to make covenant with those living creatures' lacking language, because 'we have no sufficient sign of their will' (Hobbes, *El.* 15.11). But if Hobbes were consistent, we require no other 'sign of their will' than the act prompted by the last appetite!

The context in which Hobbes discusses liberty in the *Elements* is the state of nature, where the natural liberty that man enjoys is equivalent, he claims, to natural right (Hobbes, *El.* 14.6; Pacchi, 'Diritti naturali e libertà politica in Hobbes', 151–5). It is also one of his most powerful statements about self-preservation requiring humans to embrace their own good (*sibi bonum*): Men are so constituted as 'to will and desire *bonum sibi*, that which

is good for themselves, and to avoid that which is hurtful' (Hobbes, *El.* 14.6; *DC*, 1.7). Above all they are motivated to avoid 'that terrible enemy of nature, death, from whom we expect both the loss of all power, and also the greatest of bodily pains in the losing of it' (Hobbes, *El.* 14.6). Men not only seek self-preservation above all, Hobbes maintains, but they have a right to do so. For that 'which is not against reason', is allowed as a 'RIGHT, or *ius*' (Hobbes, *El.* 14.6). So, since 'it is not against reason that a man doth all he can to preserve his own body and limbs, both from death and pain', he does it of right (Hobbes, *El.* 14.6).

Skinner claims that it is perfectly consistent of Hobbes to make the sweeping claim that liberty of nature grants to everyone 'a right to do whatsoever he listeth to whom he listeth' (Hobbes, *El.* 14.6; Skinner, *Hobbes and Republican Liberty*, 37), and that it nicely echoes Aristotle's *Politics* book 6 in the English translation of 1598, where 'tokens' of liberty are defined as the liberty 'to live as men list' (Skinner, *Hobbes and Republican Liberty*, 37, citing Aristotle, *Politiques*, 6.2, 340). But is this the case? Why should a philosopher committed to a determinist metaphysics, who postulates self-determination as a primary human drive, take the extra and unnecessary step of claiming that they have a 'right to self-determination' and that this was guaranteed by the 'liberty of nature'? Is this not a *reduction ad absurdum* with respect to rights, and especially their treatment by the late Scholastics? And are not 'rights' like 'obligations' superfluous entities in a materialist anthropology?

If natural liberty and natural right are one and the same, as Hobbes claims, in what does the latter consist precisely? Do these notions simply represent fictions, or surrogates for mechanisms of psychological determinism that our cognitive structures do not allow us to fully understand? How in general does Hobbes's understanding of psychological mechanism impact on the status of concepts? Are physiological structures parallel to mental structures, as Descartes maintained (Descartes, *AT*, 11:119; *CSM*: 1:99; Springborg, 'Hobbes's Challenge to Descartes')? Or do we take a clue from the programmatic statement at the beginning of the *Elements* Chapter 14, where Hobbes claims to be discussing 'the whole nature of man, consisting in the powers natural of his mind and body' (Hobbes, *El.* 14.6), that he in fact conflates the mind/brain problem? Do physiological structures exhaust the mental, as the emphasis on 'powers *natural*' of the mind and body would suggest? And does Hobbes rather harbour the hope, like Freud two centuries later, of describing them scientifically? Most importantly, where does this leave any meaningful concept of freedom?

These problems are minimized in *Leviathan*, where Hobbes does not repeat the Lucretian comparison between men and other animals. But they still exist. In *Leviathan* Hobbes, discussing deliberation, states simply that '[t]his alternative succession of appetites, aversions, hopes and fears is no less in other living creatures than in man; and therefore beasts also deliberate' (*Lev.* vi,

§51, 27/33). He is clear that this deliberative process involves a minimalist concept of 'will' as the 'end, when that whereof they deliberate is either done or thought impossible, because till then we retain the liberty of doing or omitting, according to our appetite or aversion' (*Lev. vi*, §52, 27/33). And he is very clear that this concept of the 'will' is different from the scholastic 'faculty of willing':

In deliberation, the last appetite or aversion immediately adhering to the action, or to the omission thereof, is that we call the WILL, the act (not the faculty) of *willing*. And beasts that have deliberation must necessarily also have *will*. The definition of will given commonly by the Schools, that it is a *rational appetite*, is not good. For it if were, then there could be no voluntary act against reason. For a *voluntary act* is that which proceedeth from *will* and no other. But if instead of a rational appetite we shall say an appetite resulting from a precedent deliberation, then the definition is the same that I have given here.

(Hobbes, *Lev. vi*, §53, 28/33)

It does not take much deliberation to see that such a concept of will puts slender legs under the mighty concept of covenanting, if it remains coherent at all; and it simply will not sustain the distinction, made so clearly in the *Elements*, between the fragile and 'artificial' order to which covenanting humans must resort, due to their natural fractiousness, compared with the spontaneous order achieved in the animal kingdom. Meanwhile, the antinomy between Hobbes's psychological determinism and a 'right to self-determination' guaranteed by the 'liberty of nature' still remains. What this all tells us, if we were ever in doubt, is that Hobbes, if he ever intended to, which I doubt, certainly never succeeded in achieving a materialist ontological reduction and is even a corporealist only in a qualified way.

Acknowledgements

Grateful thanks to Falk Wunderlich for organizing the Mainz conference to which this was presented. Likewise, thanks to Mike Beaney, General Editor of this journal for the ceaseless work he has expended to bring this special issue to fruition, as well as to the journal's anonymous readers for their comments and recommendations.

Bibliography

Primary sources

Aristotle. *Politiques, or Discourses of Government*. Translated by I. D. London, 1598.

Aristotle. *Complete Works of Aristotle*. Edited by Jonathan Barnes. Princeton: Princeton University Press, 1984.

Arrighetti, G. *Epicuro Opere, nuova edizione*. Turin: Einaudi, 1973.

Bramhall, John. *A Defence of True Liberty from Antecedent and Extrinsic Necessity*. London: Routledge/Thoemmes, [1655] 1971.

- Cudworth, Ralph. *The True Intellectual System of the Universe: The First Part; Wherein, All the Reason and Philosophy of Atheism is Confuted, and its Impossibility Demonstrated*. London: Richard Royston, 1678.
- Descartes, R. *Oeuvres de Descartes*. Edited by C. Adam and P. Tannery. 13 vols. Paris: Vrin, 1964–74. Cited as AT.
- Descartes, R. *The Philosophical Writings of Descartes*. Edited by J. Cottingham, R. Stoothoff, and D. Murdoch. Cambridge: Cambridge University Press, 1984. Cited as CSM.
- Hobbes, T. *The Elements of Law Natural and Politic*. Edited by J. C. A. Gaskin. Henceforth *El*. followed by chapter and paragraph. Oxford: Clarendon Press, [1640] 1999.
- Hobbes, T. *Leviathan, or the Matter, Forme & Power of a Common-wealth Ecclesiasticall and Civill* (henceforth *Lev.*). Citations are to the 1994 edition with selected variants from the Latin edition of 1668, E. Curley ed., Indianapolis: Hackett, referencing chapter (small Roman numerals), section (§), pagination of the Head edition/and of the Curley edition, [1651] 1994.
- Hobbes, T. *Opera Philosophica*. Edited by William Wordsworth. London: Longman, 1839.
- Hobbes, T. *The English Works of Thomas Hobbes*. Edited by Sir William Molesworth. 11 vols. London: Bohn (referred to as *EW*). Republished with a new Introduction by G. A. J. Rogers, 11 vols. Routledge: Thoemmes Press, London, [1839–1845] 1992.
- Hobbes, T. *The Questions Concerning Liberty, Necessity, And Chance*. *EW V*, 1839–1845.
- Hobbes, T. *De Cive: The Latin Version*. Edited by Howard Warrender. Henceforth *DC*, followed by chapter and paragraph, Vol. 2. Oxford: Clarendon Edition, 1983.
- Lucretius. *De Rerum Natura*. W. H. D. Rouse, translated, commentary by M. F. Smith, Loeb edn. London: Heinemann, 1975.

Secondary sources

- Arp, Robert. 'Re-thinking Hobbes's Materialistic and Mechanistic Projects'. *Hobbes Studies* 15 (2002): 3–31.
- Audidière, Sophie. 'Why do Helvétius' writings matter? Rousseau's Notes sur *De l'esprit*'. *British Journal for the History of Philosophy*, 24 (2016).
- Brandt, Frithiof. *Thomas Hobbes' Mechanical Conception of Nature*. Copenhagen: Levin & Munksgaard, 1928.
- Campbell, Keith. 'Materialism'. In *The Encyclopedia of Philosophy*, edited by P. Edwards, 179–88. London: Macmillan, 1967.
- Fisher, Saul. *Pierre Gassendi's Philosophy and Science*. Leiden: Brill, 2005.
- Furley, D. J. *Two Studies in the Greek Atomists*. Princeton: Princeton University Press, 1966.
- Glaziou, Y. *Hobbes en France au XVIII siècle*. Paris: P.U.F, 1993.
- Green, Arnold W. *Hobbes and Human Nature*. London: Transaction Publications, 1993.
- Huby, P. M. 'The Epicureans, Animals and Free Will'. *Apeiron* 3, no. 1 (1969): 17–19.
- Leddy, Neven, and Avi Lifschitz, eds. *Epicurus in the Enlightenment*. Oxford: Voltaire Foundation, 2009.
- Leijenhorst, Cees. 'Hobbes's Theory of Causality and Its Aristotelian Background'. *The Monist* 79 (1996): 426–47.
- Leijenhorst, Cees. 'Hobbes's Corporeal Deity'. *Rivista di storia della filosofia* 1 (2004): 73–95.
- LoLordo, Antonia. *Pierre Gassendi and the Birth of Early Modern Philosophy*. Cambridge/ New York: Cambridge University Press, 2006.
- Long, A. A. *Hellenistic Philosophy*. London: Duckworth, 1974.
- Long, A. A. 'Chance and Natural Law in Epicureanism'. *Phronesis* 22, no. 1 (1977): 63–88.

- Lupoli, A. "Fluidismo" e *Corporeal Deity* nella filosofia naturale di Thomas Hobbes: A proposito dell'hobbesiano "Dio delle Cause". *Rivista di storia della filosofia* 54 n.s. (1999): 573–610.
- Lupoli, A. *Nei Limiti della Materia. Hobbes e Boyle: materialismo epistemologico, filosofia corpulolare e dio corporeo*. Milan: Baldini Castoldi Dalai, 2006.
- Malcolm, Noel. 'Hobbes and the European Republic of Letters'. In *Aspects of Hobbes*, edited by Malcolm, 457–545. Oxford: Oxford University Press, 2002.
- Norbrook, David, Stephen Harrison, and Philip Hardie, eds. *Lucretius and the Early Modern*. Oxford: Oxford University Press, 2015.
- Pacchi, Arrigo. 'Hobbes e l'epicureismo'. *Rivista Critica di Storia dell'Filosofia* 33 (1975): 54–71.
- Pacchi, Arrigo. 'Diritti naturali e libertà politica in Hobbes'. In *Scritti hobbesiani (1978–1990)*, edited by Agostino Lupoli, 145–62. Milan: Franco Angeli, 1998.
- Paganini, G. 'Hobbes, Gassendi e la psicologia del meccanicismo'. In *Hobbes Oggi*, Actes du Colloque de Milan (18–21 May 1988), edited by Arrigo Pacchi, 351–446. Milan: Franco Angeli, 1990.
- Paganini, G. 'Hobbes, Gassendi and the Tradition of Political Epicureanism'. *Hobbes Studies*: 3–24; reprinted In *Der Garten und die Moderne: Epikureische Moral und Politik vom Humanismus bis zur Aufklärung*, edited by G. Paganini and E. Tortarolo, 113–37. Stuttgart-Bad Cannstatt: Rommann-holzboog Verlag, 2001 [2004].
- Paganini, G. 'Hobbes Among Ancient and Modern Sceptics: Phenomena and Bodies'. In *The Return of Scepticism. From Hobbes and Descartes to Bayle*, edited by Paganini, 3–35. Dordrecht: Kluwer, 2003.
- Paganini, G. "Passionate Thought": Reason and the Passion of Curiosity in Thomas Hobbes'. In *Emotional Minds*, edited by Sabrina Ebbersmeyer, 227–56. Berlin: De Gruyter, 2012.
- Paganini, G. 'Political Animals in Seventeenth-century Philosophy: Some Rival Paradigms'. In *Ethical Perspectives on Animals in the Renaissance and Early Modern Period*, edited by C. Muratori and B. Dohm, 285–98. Firenze: Edizioni del Galluzzo, 2013.
- Saylor, C. F. 'Man, Animal, and the Bestial in Lucretius'. *The Classical Journal* 67, no. 4 (1972): 306–16.
- Shelton, J. 'Contracts with Animals: Lucretius, *De Rerum Natura*'. *Between the Species*, 11 (1995): 115–21.
- Skinner, Q. *Hobbes and Republican Liberty*. Cambridge: Cambridge University Press, 2008.
- Sorell, Tom. 'Hobbes's Scheme of the Sciences'. In *Cambridge Companion to Hobbes*, edited by Tom Sorell, 45–61. Cambridge: Cambridge University Press, 1996.
- Springborg, Patricia. 'Thomas Hobbes and Cardinal Bellarmine: *Leviathan* and the Ghost of the Roman Empire'. *History of Political Thought*, 16, no. 4 (1995): 503–31.
- Springborg, Patricia. 'Hobbes's Theory of Civil Religion'. In *Pluralismo e religione civile*, edited by Gianni Paganini and Edoardo Tortarolo, 61–98. Milano: Bruno Mondadori, 2003.
- Springborg, Patricia. 'Hobbes and Epicurean Religion'. In *Der Garten und die Moderne: Epikureische Moral und Politik*, edited by Gianni Paganini and Edoardo Tortarolo, 161–214. Stuttgart-Bad Cannstatt: Rommann-holzboog Verlag, 2004.
- Springborg, P. 'Liberty Exposed, Quentin Skinner's *Hobbes and Republican Liberty*'. *British Journal for the History of Philosophy* 18, no. 1 (2010): 139–61.
- Springborg, P. 'Hobbes's Fool the *Stultus*, Grotius, and the Epicurean Tradition'. *Hobbes Studies* 23 (2010): 29–53.

- Springborg, P. 'Hobbes's Challenge to Descartes, Bramhall and Boyle: A Corporeal God'. *British Journal for the History of Philosophy* 20, no. 4 (2012): 903–34.
- Springborg, P. 'Hobbes calviniste? Hobbes, l'épicurisme et les enjeux de la différence anthropologique'. In *Jean Calvin et Thomas Hobbes, Naissance de la modernité politique*, edited by O. Abel, P.-F. Moeau, D. Weber, 207–31. Paris: Labor et Fides, 2013.
- Strauss, Leo. *The Political Philosophy of Thomas Hobbes*. Translated by Elsa M. Sinclair. Chicago: University of Chicago Press, 1952.
- Usener, H. *Epicurea*. Leipzig: Teubner, 1887.
- Verlinsky, A. 'Do Animals Have Freewill? Epicurus, On Nature Book XXV, 20B and 20J Long-Sedley'. *Hyperboreus* 2, no. 1 (1996): 125–38.
- Wilson, Catherine. *Epicureanism at the Origins of Modernity*. Oxford: Oxford University Press, 2008.
- Wolfe, Charles T. 'Varieties of Vital Materialism'. *British Journal for the History of Philosophy*, special issue (2016).