

Hobbes and the Nature of Bodies

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Introduction

That Hobbes had an enormous interest in body is obvious. The first part of his major work *Elementa philosophiae* is *De corpore* (*On Body*; hereinafter DC), and it is much longer than the second part *De homine* (*On Man*). Materialism is a key note of his philosophy presented in *Elementa philosophiae* and *Leviathan*.¹ For Hobbes, a human being is solely made up of material constituents, and her actions are explained by mechanical theories. Moreover, intellectuals of 17th century were amazed at a remarkable development of natural philosophy, and Hobbes considered himself a cutting-edge scientist.² In DC, we find intensive discussions of circular motion, reflection of light, and other natural phenomena.

Given that Hobbes had a strong commitment to mechanism,³ we may be tempted to conclude that according to him, body consists in size, shape and motion. And indeed, he explained many physical phenomena in terms of these. Although Hobbes was a nominalist and his definition of body cannot be rightly taken as a presentation of the nature of bodies, we can still interpret him as holding that size, shape and motion (especially endeavour [*conatus*]) constitute their nature. But at the same time, Hobbes seems to assume that bodies may have real qualities that are radically different from size, shape and motion.

1. The Nature of Bodies in General

Hobbes used the expression “the nature of body in general” in the context of summing up DC at the end of the book:⁴

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- 1 Stephen Finn introduces Hobbes’ early view on natural philosophy before *De corpore* (1655) and *Leviathan* (1651). When Hobbes wrote *A Short Tract on First Principles* of 1630-36, he often referred to the active power of a thing under an influence from the Aristotelean philosophy (Finn, 2006, p. 35). But he did not introduce this term in DC.
 - 2 Noel Malcolm argues that the publication of *De corpore* declined Hobbes’ reputation as a natural scientist since the world-view in it was not new in the mid-1650s (Malcolm, 2002, p. 498). Nonetheless, Hobbes was strongly motivated to investigate natural philosophy, and his discussion of the nature of bodies is a fruit of the efforts dedicated to it.
 - 3 Douglas Jesseph points out that Hobbes was “a devotee” of mechanical philosophy since in *Dialogus Physicus* (1661) he accepted the maxim that “nature does all things by the conflict of bodies pressing each other mutually with their motions” (Jesseph, 1996, p. 86).
 - 4 *De corpore* has different editions. At first, a Latin version was published in June 1655. Then he published an English version in June 1656, from which I quote passages in this paper. There are some substantial revisions in the English version considering criticisms on Hobbes’ mistakes of geometry (Honda, 2015, pp. 694-695). Later Hobbes published the final version (1668) written in Latin. I mainly cite the English version, and quote correspondent passages from the final version in footnotes. I notice if there is any substantial difference between two versions.

And thus much concerning the nature of body in general; with which I conclude this my first section of the Elements of Philosophy. In the first, second, and third parts, where the principles of ratiocination consist in our own understanding, that is to say, in the legitimate use of such words as we ourselves constitute, all the theorems, if I be not deceived, are rightly demonstrated. The fourth part depends upon hypotheses; which unless we know them to be true, it is impossible for us to demonstrate that those causes, which I have there explicated, are the true causes of the things whose productions I have derived from them. (DC.4.30.15)⁵

Here Hobbes noted that he had discussed the nature of bodies in DC. He argued that the first three parts successfully showed the nature. In the first part, he introduced logic and philosophy in general. In the second and third, he discussed features of body and motion on the basis of logical connections of basic concepts. On the contrary, Hobbes did not think the fourth part offered certain knowledge. This last part deals with sensations of men, motions of stars, light and gravity. Hobbes seems to admit that there are many possible hypotheses to explain these phenomena, and he merely introduced some of them.⁶ Thus Hobbes seems to introduce the nature of bodies in the first three parts rather than in the fourth.

Hobbes also suggested that he knew the nature of bodies through philosophical investigations that were demonstrated in DC:

[W]e do not at all feel the weight of water in water, much less of air in air. That we come to know that to be a body, which we call air, it is by reasoning; but it is from one reason only, namely, because it is impossible for remote bodies to work upon our organs of sense but by the help of bodies intermediate, without which we could have no sense of them, till they come to be contiguous. Wherefore, from the senses alone, without reasoning from effects, we cannot have sufficient evidence of the nature of bodies. (DC.4.30.14)⁷

Hobbes suggested that air is a body. To be sure, it is transparent and light, and we may feel that air is not a body. But sounds cannot be transmitted to ears without a body. Since they are transmitted by air, it must be a kind of body. Hobbes also wrote that “we cannot suppose any magnitude so little, but that our very supposition is actually exceeded by nature” (DC.4.27.1). It suggests that although tiny parts of bodies are not perceived, we understand that

5 The corresponding passage of the Latin version is slightly different from the quoted passage in English. But both of them explicitly distinguish the fourth part involving hypotheses from the first three. “Atque de natura corporis in genere hactenus dictum sit: quae elementorum philosophiae sectio prima est. In cujus partibus prima, secunda, et tertia, ubi principia ratiocinandi consistunt in intellectu nostro, id est, in vocabulorum legitimo usu, quem ipsi facimus, theorematum non fallor omnia legitime demonstrata sunt. Pars quarta dependet ab hypothesebus; et propterea, ignorata illarum veritate, causas rerum eas revera esse quas explicavimus, demonstrari non potest.”

6 Jesseph argues that for Hobbes, natural sciences cannot completely reach the certainty of geometry, and they only can approximate it by utilizing hypotheses (Jesseph, 1996, p. 88).

7 “Pondus item ne aquae quidem in aqua, et multo minus aeris in aere sentire possumus. Ratione autem corpus esse aliquod quod aerem dicimus, cognosci potest, sed unica, nimirum, quia sine medio corpore, corpora procul posita in sensoria nostra agere non possint, neque omnino sentiremus nisi contigua. Naturae ergo corporeae, absque ratiocinatione ab effectu, soli sensus idonei testes non sunt.”

they do have parts that are too small to be seen since an extended thing has parts by nature. The passages above may provide an impression that he successfully found the nature of bodies, and presented it when he gave a definition of body. In the following sections, however, I notice that Hobbes' definition of body should not be taken as his presentation of its nature.

2. Hobbes' Definition of Body

Hobbes took definition in general as important, and at the very beginning of DC, he introduced a definition of philosophy noting the significance of philosophical investigations (DC.1.1.2). He also provided a definition of body in the second chapter as the following:

HAVING understood what imaginary space is, in which we supposed nothing remaining without us, but all those things to be destroyed, that, by existing heretofore, left images of themselves in our minds; let us now suppose some one of those things to be placed again in the world, or created anew. It is necessary, therefore, that this new-created or replaced thing do not only fill some part of the space above mentioned, or be coincident and coextended with it, but also that it have no dependance upon our thought. And this is that which, for the extension of it, we commonly call *body*; and because it depends not upon our thought, we say it is *a thing subsisting of itself*; as also *existing*, because without us; and, lastly, it is called the *subject*, because it is so placed in and *subjected* to imaginary space, that it may be understood by reason, as well as perceived by sense. The definition, therefore, of *body* may be this, *a body is that, which having no dependance upon our thought, is coincident or coextended with some part of space.* (DC.2.8.1)⁸

Some features of body are introduced: It is placed somewhere, and it has some extension, and it subsists independently of a perceiving mind. Here it is not easy to find a substantial difference between Hobbes' view and Cartesians', since they held that extension is the essential attribute of body, and in Hobbes' view features of body are obviously related to extension.

Furthermore, the following short passage seems to suggest that extension is an essential attribute of body:

But *abstract names* denote only the causes of *concrete names*, and not the things themselves. For example, when we see any thing, or conceive in our mind any visible thing, that thing appears to us, or is conceived by

8 "INTELLECTO jam quid sit spatium imaginarium, in quo nihil esse externum supposuimus, sed meram eorum, quae olim existentia imagines suas in animo reliquerant, privationem; supponamus deinceps aliquid eorum rursus reponi, sive creati denuo; necesse ergo est ut creatum illud sive repositum, non modo occupet aliquam dicti spatii partem, sive cum ea coincidat et coextendatur, sed etiam esse aliquid, quod ab imaginatione nostra non dependet. Hoc autem ipsum est quod appellari solet, propter extensionem quidem, *corpus*; propter independentiam autem a nostra cogitatione *subsistens per se*; et propterea quod extra nos subsistit, *existens*; denique quia sub spatio imaginario substerni et supponi videtur, ut non sensibus sed ratione tantum aliquid ibi esse intelligatur, *suppositum* et *subjectum*. Itaque definition corporis hujusmodi est, *corpus est quicquid non dependens a nostra cogitatione cum spatii parte aliqua coincidit vel coextenditur.*"

us, not in one point, but as having parts distant from one another, that is, as being extended and filling some space. Seeing therefore we call the thing so conceived *body*, the cause of that name is, that that thing is *extended*, or the *extension or corporeity* of it. (DC.1.3.3)⁹

Here Hobbes uses the terms “extension” and “corporeity” as almost univocal. This seems to imply that every extended thing is a body, and vice versa. However, the most important point of the passage is that we often ascribe some property (that is represented by an abstract term) to a concrete thing if we come to know it through that property. This does not mean that the abstract term “extension” rightly expresses the nature of a concrete extended body. And in fact, Hobbes emphasized that the definition of something with abstract terms is different from its nature.¹⁰

3. Hobbes’ Nominalism

Hobbes denied that there are abstract entities called universals. Although he believed that there are particulars or concrete objects that exist in space at some time, he did not believe that a universal as such exists without having a specific position in the spatiotemporal order. Thus for instance, he did not think the universal “whiteness” exists apart from white things. To be sure, Hobbes thought that there are many names stand for universals, and “tree” can be used as a common name for many different trees (Lev.1.4.6; Duncan, 2017). But he thought that the similarity of things is sufficient for giving a single name for them, and the existence of a universal should not be postulated.

Hobbes was obviously reluctant to admit that abstract entities exist in the following passage of DC:

From the same fountain spring those insignificant words, *abstract substance, separated essence*, and the like; as also that confusion of words derived from the Latin verb *est*, as *essence, essentiality, entity, entitative*; besides *reality, aliquidity, quiddity, &c.* which could never have been heard of among such nations as do not copulate their names by the verb *is*, but by adjective verbs, as *runneth, readeth, &c.* or by the mere placing of one name after another; and yet seeing such nations compute and reason, it is evident that philosophy has no need of those words *essence, entity*, and other the like barbarous terms. (DC.1.3.4)¹¹

9 “Nomina autem abstracta causam nominis concreti denotant, non ipsam rem. Exempli gratia cum aliquid videamus, vel visibile aliquid animo concipiamus, apparet illa res, vel concipitur non in uno puncto, sed ut habens partes a partibus distantes, id est, ut extensa per spacium aliquod; quoniam igitur rem ita conceptam voluimus appellari *corpus*, causa ejus nominis est, *esse eam rem extensam* sive *extensio* vel *corporeitas*...”

10 Although Daniel Garber argues that for Hobbes the essence of body is extension, I could not find evidence to ascribe this view to him (Garber, 2008, p. 24n). As we will see, Hobbes’ definition of body is not a presentation of the essence of body.

11 “Ab eodem fonte nascuntur illae voces insignificantes, *substantiae abstractae, essentia separata*, aliaque similia. Etiam confusio illa vocum a verbo *Est* derivatarum, ut *essentia, essentialitas, entitas, entitativum, et realitas, aliquiditus, quidditus*, quae apud gentes quibus copulatio non sit per verbum *est*, sed per verba adjectiva ut *currit, legit, &c.* vel per meram nominum collocationem audiri non potuissent, quibus tamen gentibus, cum philosophari ut caeterae possunt, non sunt necessariae eae voces, *essentia, entitas* omnisque illa barbaries ad philosophiam.”

Hobbes seems to deny that an abstract entity exists as a substance. He also suggested that western philosophers wrongly assumed that entity or being itself exists, since their languages have special verbs such as “esse,” “be,” “être,” “sein,” and others. Their metaphysics would be quite different if they used other languages that lack similar verbs.

Furthermore, Hobbes suggested that the proposition “essence is separated” is false or meaningless:¹²

[P]ropositions are false, when abstract names are copulated with concrete names; as (in Latin and Greek) *esse est ens, essential est ens, τὸ τί ἦν εἶναι (i.); quidditas est ens*, and many the like, which are found in Aristotle’s *Metaphysics*. Also, the *understanding worketh, the understanding understandeth, the sight seeth; a body is magnitude, a body is quantity, a body is extension; to be a man is a man, whiteness is a white thing, &c;* which is as if one should say, the *runner is the running, or the walk walketh*. Moreover, *essence is separated, substance is abstracted*: and others like these, or derived from these, (which which common philosophy abounds.) (DC.1.5.3)¹³

Although the proposition is obscure, it seems to mean that the abstract entity called “essence” exists apart from concrete things. In this case, the essence would exist as a substance abstracted from particular things, which is a mere fictitious story for Hobbes.

Hobbes’ nominalism is even more remarkable in the following passage, where he declared that a definition is given through how we signify things:

But whatsoever the cause of hereof may be, yet this is manifest, that *genus, species, definition, &c.* are names of words and names only; and therefore to put *genus* and *species* for things, and *definition* for the nature of any thing, as the writers of *metaphysics* have done, is not right, seeing they be only significations of what we think of the nature of things. (DC.1.2.10)¹⁴

He emphasized that we should not conflate the definition of something with its nature. According to Hobbes, we

12 Malcolm points out that Hobbes’ denial of the existence of “separated essences” was refuted by the Cartesian occasionalist Louis de la Forge, since it looked as presenting an anti-Cartesian view that a thinking substance cannot exist apart from bodies (Malcolm, 2006, p. 498).

13 “Juxta modum primum falsae sunt ubi nomina abstracta copulantur com concretis, ut *esse est ens, essentia est ens, τὸ τί ἦν εἶναι (i.) quidditas est ens*, et multa istiusmodi quae reperiuntur in metaphysicis *Aristotelis; item intellectus agit, intellectus intelligit, visus videt, corpus est magnitudo, corpus est quantitas, corpus est extensio, esse hominem est homo, albedo est alba*; simile enim est ac si quis diceret *cursor est cursus, vel ambulatio ambulat*, item, *essentia est separata, substantia est abstracta*, atque harum similes, vel ab his derivatae (quarum philosophia communis est plenissima). . .”

14 “Sed quacunq; de causa hoc factum sit, manifestum tamen est *genus, species, definitionem* non esse nomina aliquorum rerum praeterquam vocum et nominum; et propterea non recte poni in metaphysicis *genus* et *speciem* pro rebus, et *definitionem* pro rei natura, cum sint tantum cogitationum nostrarum de natura rerum significaciones.”

can introduce a definition of something without knowing what it exactly is. We recognize a dog through its shape, size and voice, and another creature is named such-and-such with some reason. But we usually do not completely know the bodily structure of a dog.

Hobbes further argued that names do not exactly match the natures of things given how people name things differently:

For considering that new names are daily made, and old ones laid aside; that diverse nations use different names, and how impossible it is either to observe similitude, or make any comparison betwixt a name and a thing, how can any man imagine that the names of things were imposed from their natures? (DC.1.2.4)¹⁵

For instance, Japanese people use “mujina” and “tanuki” referring to a kind of badger. In this case, we cannot find a one-to-one correspondence between Japanese and English words. So far we have seen Hobbes’ nominalism that the definition of a thing is not an elaboration of its nature, but in the following sections I attempt to identify the nature of bodies on the basis of Hobbes’ discussion of “accidents.”

4. The Aristotelian Framework

Hobbes gave critical notes upon Aristotle in many passages. As we have seen, Hobbes negatively referred to Aristotle and rejected realism of abstract objects. But Hobbes did not reject all of Aristotle’s claims. Hobbes positively introduced some Aristotelian terms, such as substratum, accident, part and whole:¹⁶

When an *accident* is said to be in a body, it is not so to be understood, as if any thing were contained in that body; as if, for example, redness were in blood, in the same manner, as blood is in a bloody cloth, that is, as a part in the whole; for so, an accident would be a body also. But, as magnitude, or rest, or motion, is in that which is great, or which resteth, or which is moved, (which, how it is to be understood, every man understands) so also, it is to be understood, that every other accident *is in* its subject. (DC.2.8.3)¹⁷

Hobbes declared that an accident is “in its subject.”¹⁸ It must be, since according to Hobbes “whiteness” does not exist apart from a concrete white thing. And we need to take note that Hobbes did not use the term “accident”

15 “[C]ui enim, qui verba quotidie nova nasci, vetera aboleri, diversa diversis gentibus in usu esse, denique qui inter res et verba neque similitudinem esse, neque comparationem ullam institui posse videt, in animum venire potest naturas rerum sibimetipsis nomina sua praeuisse?”

16 Aristotle suggested that accidents cannot be separated from substances (Met. 1. 8).

17 “Quod autem *accidens in corpore inesse* dicatur, id non ita accipiendum est, ac si aliquid in corpore contentum esset, tanquam exempli gratia ita rubor inesset sanguini, sicut sanguis in cruentata veste, id est, ut pars in toto; nam sic accidens esset quoque corpus; sed sicut magnitudo, vel quies, vel motus est in eo quod magnum est, quod quiescit, vel quod movetur (quod quo modo intelligendum est unusquisque intelligit) ita etiam omne aliud accidens inesse subjecto suo intelligi debet.”

18 Yves Charles Zarka argued that Hobbes introduced “basic concepts” of the first philosophy, and a pair of them are “body/accident” (Zarka, 1996, p. 65). Here Zarka suggests that the substratum of an accident is basically a body.

contrasting with “nature” or “essence.”¹⁹ He used it for any feature that is in the subject, and thus in his view even an indispensable feature can be an accident. Thus, we may also find a discussion of the nature of bodies in passages where Hobbes introduced an “accident.”

5. Motion and Magnitude as the Most Common Accidents

Hobbes introduced motion and magnitude as the most common accidents of bodies in general:

THE next things in order to be treated of are MOTION and MAGNITUDE, which are the most common accident of all bodies. This place therefore most properly belongs to the elements of geometry. But because this part of philosophy, having been improved by the best wits of all ages, has afforded greater plenty of matter than can well be thrust together within the narrow limits of this discourse, I thought fit to admonish the reader, that before he proceed further, he take into his hands the works of Euclid, Archimedes, Apollonius, and other as well ancient as modern writers. For what end is it, to do over again that which is already done? The little therefore that I shall say concerning geometry in some of the following chapters, shall be such only as is new, and conducing to natural philosophy. (DC.3.15.1)²⁰

It is highly likely that Hobbes introduced motion and magnitude as components of the nature of bodies since after starting the third part with this passage, as we have seen, he summed up DC reviewing the first three parts as presentations of certain knowledge about bodies. So let us see the further discussions after the passage, from which the third part starts, since it has by far the richest discussions of bodies. I will sum up Hobbes’ discussions of motion and magnitude, respectively.

5.1 Motion and Endeavour

Hobbes thought that a motion is constituted by a number of momentary motions or endeavours. He took endeavour as the fundamental type of motion, and we find that a large part of Chapters 15 and 16 is spent for discussing the notion of endeavour, rather than that of motion. The notion of endeavour is introduced as the following:²¹

19 In contrast, Aristotle argued that accident is “that which attaches to something and can be truly asserted, but neither of necessity nor usually” (Met.5.30).

20 “PROXIMA ordine tractatio est de *motu et magnitudine*, corporum accidentibus maxime communibus. Itaque locum hunc sibi vindicant magna ex parte proprium sibi elementa geometriae. Quoniam autem pars ista philosophiae, ab excellentissimis omnium temporum ingeniis exulta, uberiolem tulit segetem, quam ut in angustias propositi operis nostri contrudi possit; lectorem ad hunc locum accedentem admonendum esse censeo, ut Euclidis, Archimedis, Apollonii, aliorumque tum antiquorum tum recentiorum, scripta in manus sumat. Quorsum enim actum agere? Ego vero de rebus geometricis pauca tantum et nova, et ea praesertim quae physicae inserviunt, proximis aliquot capitibus dicturus sum.”

21 The notion of endeavour or conatus has a significant impact upon the history of philosophy. For instance, “endeavour” is a key term to understand the third part of the *Ethics*, where Spinoza intensively discussed emotions of the human being. It is also an important notion of Leibniz’s early work, the *Theory of Abstract Motion* of 1671 (GP.4.229 = L.149-50).

First, I define ENDEAVOUR *to be motion made in less space and time than can be given; that is, less than can be determined or assigned by exposition or number; that is, motion made through the length of a point, and in an instant or point of time.* For the explaining of which definition it must be remembered, that by a point is not to be understood that which has no quantity, or which cannot by any means be divided; for there is no such thing in nature; but that, whose quantity is not at all considered, that is, whereof neither quantity nor any part is computed in demonstration; so that a point is not to be taken for an indivisible, but for an undivided thing; as also an instant is to be taken for an undivided, and not for an indivisible time. (DC.3.15.2)²²

Here Hobbes suggested that an endeavour has some quantity, and yet it is smaller than any assigned number.²³ He seems to suppose that the motion of a body to some distance is actually composed of many (perhaps an infinite number of) endeavours.

Hobbes thought that the notion of endeavour explains many features of body. First, Hobbes argued that impetus is “nothing else but the quantity or velocity of endeavour” (DC.3.15.2). He realized that a ball with a large speed can move another ball more strongly than that of the same weight with a small speed. He thought that the former has a larger impetus to move the latter. Second, Hobbes defined resistance as “endeavour of one moved body either wholly or in part contrary to the endeavour of another moved body, which toucheth the same.” Simply put, a body can resist to a collision with another body if it has an endeavour that opposes to the other’s endeavour. Third, pressure is also explained by endeavour. For instance, a heavy stone continuously presses the ground since it always has a downward endeavour.

5.2 Magnitude

Some bodies are larger than others, and Hobbes obviously thought that the magnitude or size of a body is its common accident. And he seems to assume that the notion of magnitude is more fundamental than that of shape. In the third part of DC, he introduced many geometrical discussions, and he was mainly thinking about how a point and a line segment of certain length move (ex. DC.3.16; DC.3.17.2). It seems that Hobbes analyzed the movement of an actual (three-dimensionally extended) body to a collection of many movements of line segments in the body.

6. Bodies and the Subject of Philosophy

We have seen that Hobbes suggested that motion and magnitude constitute the nature of bodies. But although

22 “Primo, definiemus *conatum esse motum per spatium et tempus minus quam quod datur, id est, determinatur, sive expositione vel numero assignatur, id est, per punctum.* Ad cujus definitionis explicationem meminisse oportet, per punctum non intelligi id, quod quantitatem nullam habet, sive quod nulla ratione potest dividi (nihil enim est ejusmodi in rerum natura); sed id cujus quantitas non consideratur, hoc est, cujus neque quantitas neque pars ulla inter demonstrandum computatur; ita ut punctum non habeatur pro indivisibili, sed pro indiviso. Sicut etiam *instans* sumendum est pro tempore indiviso, non pro indivisibili.”

23 Hobbes’ discussion reminds us of Cavalieri, who suggested that a plain figure is made of an infinite number of invisible segments.

we can understand the nature of bodies through these two notions, it cannot explain some miraculous phenomena that were believed to take place in the world. Hobbes did not explicitly reject miracles that are told among Christians. This may be a political compromise with the society he belonged to. But we do not have a good reason to argue that he secretly denied all the miraculous facts for Christians. At least, Hobbes argued that investigations of miracles do not belong to philosophy:

The *subject* of Philosophy, or the matter it treats of, is every body of which we can conceive any generation, and which we may, by any consideration thereof, compare with other bodies, or which is capable of composition and resolution; that is to say, every body of whose generation or properties we can have any knowledge. (DC.1.1.8)²⁴

The generation of Jesus' tiny body in Mary's womb cannot be explained by composition or division of bodies. Thus Hobbes concluded that it cannot be philosophically explained. Hobbes also argued that "the doctrine of angels" does not belong to philosophy (Sorell, 1996, p. 46):

[Philosophy] excludes the doctrine of *angels*, and all such things as are thought to be neither bodies nor properties of bodies; there being in them no place neither for composition nor division, nor any capacity of more and less, that is to say, no place for ratiocination. (DC.1.1.8)²⁵

According to the standard view, angels have actions that are beyond the laws of nature,²⁶ though their seemingly miraculous actions are minor with respect to the great miracles that are directly brought about by God. Thus the miracles cannot be explained by mechanical theories. Interestingly, Hobbes used the expression "such things as are thought to be neither bodies nor properties of bodies." This can be understood to mean that miracles are not brought about by bodies, but God's direct intervention. But it can be also understood to mean that although we understand bodies through their nature, they may have some properties which we cannot conceive.

Hobbes also mentioned to revelation, and suggested that although it provides some knowledge, this type of knowledge is not counted as philosophical:

[Philosophy] excludes all such knowledge as is acquired by Divine inspiration, or revelation, as not derived to

24 "Subjectum Philosophiae, sive materia circa quam versatur, est corpus omne cujus generatio aliqua concipi, et cujus comparatio secundum ullam ejus considerationem institui potest. Sive in quibus compositio et resolutio locum habet; id est omne corpus quod generari, vel aliquam habere proprietatem intelligi potest."

25 "Excludit doctrinam de angelis et rebus illis omnibus quae nec corpora, nec corporum affectus existimantur; quia in illis locus non est compositioni, nec divisioni, ut in quibus non est magis nec minus, id est, nullus locus ratiocinationi."

26 Thomas Aquinas argued that the local motion of an angel can be non-continuous (ST.1.53.2). According to him, angels can move to another place without passing intermediate places.

us by reason, but by Divine grace in an instant, and, as it were, by some sense supernatural. (DC.1.1.8)²⁷

Here Hobbes suggested that some “knowledge” is given through revelation. But it is not known as a self-evident truth. And it is not logically derived from self-evident propositions. For instance, there is no logical demonstration for the conclusion that Jesus and God are “one” (John 10:30).

Thus Hobbes seems to suggest that some facts cannot be explained by how bodies move in accordance with interactions of endeavours. Still, Hobbes might have believed that he had sufficient knowledge about bodies, since an unexplainable phenomenon is brought about by an intervention of God. But Hobbes also may have thought that it is caused by an unknown power of body. Hobbes thought that body is the most familiar object, and he thought that cognition starts from a stimulation of sense organs. However, he was somewhat agnostic about what exactly constitutes a body, perhaps because he was not committed to the theological view that we can thoroughly understand bodies insofar as God created men as being able to have concepts that rightly express his intellect that completely determines bodies in general.

Abbreviations of Primary Texts and Translations

- DC: *De corpore*. Cited by part, chapter and section.
 GP: *Die philosophischen Schriften von G. W. Leibniz*. Ed. C. I. Gerhardt. Berlin: Weidmann, 1875-1890. Reprint, Hildesheim: Georg Olms, 1978. Cited by volume and page.
 L: *G.W. Leibniz Philosophical Papers and Letters*. Translated and edited by L.E. Loemker. Dordrecht: Kluwer.
 Lev: *Leviathan*. Cited by part, chapter and section.
 Met: Aristotle *Metaphysics*. Cited by book and part.
 ST: Thomas Aquinas *Summa theologiae*. Cited by part, question and article.

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27 “Excludit scientiam omnem quae oritur ex divina inspiratione, vel revelatione, quippe quae non est acquisita ratione, sed gratia divina et actu instantaneo (quasi sensio quaedam supernaturalis) dono data.”