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Résumé de l'article

Vers la fin de son *Leviathan*, Th. Hobbes critique ses propres études universitaires pour avoir abandonné l'enseignement de la *philosophie*, en y substituant ce qu'il appelle '*Aristotelity*', c'est-à-dire, un dévouement servile aux doctrines d'Aristote. Le présent article soulève la question suivante : jusqu'à quel point l'*Aristotelity* dénoncée par Hobbes représente-t-elle la vraie pensée d'Aristote ? Nous considérons trois points : i) l'idée qu'Aristote n'avait pas reconnu la base mathématique des sciences naturelles ; ii) l'idée qu'Aristote avait conçu les essences comme des entités immatérielles séparées en espace des entités dont elles sont les essences ; iii) l'idée qu'Aristote concevait l'éternité comme un présent intemporel. Aucun de ces trois éléments de l'*Aristotelity* de Hobbes n'est fidèle à la vraie pensée du Maître.

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ON HOBBES' *ARISTOTELITY*

John Thorp

'Bumptious' and 'bellicose' – these would be good adjectives to describe a remarkable chapter near the end of Hobbes' *Leviathan*.[1] In it he lets loose a rambling volley of criticism of the Universities' curriculum of his day. The fundamental charge is that they don't teach philosophy, i.e. natural philosophy – science; rather they teach what he calls 'Aristotelity' – a slavish adherence to the teachings of Aristotle. 'Aristotelity' is a term of his own coining, and it is impossible not to detect the sneer of disdain that it carries. Withering disdain, indeed, is the tone of the chapter, tellingly titled 'Of the Darkness from Vain Philosophy.'

The times, to say the least, were tumultuous; many of the religious, intellectual and political institutions of England were in various stages of disarray: even the monarchy itself had been suspended in 1649, with the execution of Charles I, not to be restored until 1660, when Charles II was proclaimed king. These events engendered a quickening sense that longstanding traditional arrangements could come unstuck, and gave rise to a fermentation of ideas and debate about the ways in which the state, and the church, should be ordered. It is no surprise, then, that the Universities – that is, Oxford and Cambridge – should also be the object of criticism and of calls for reform.

Hobbes led the attack, publishing *Leviathan* in 1651, but there were other voices of complaint as well. In 1654, John Webster, a churchman, surgeon and controversialist with a penchant for astrology, published his *Academiarum Examen*, arguing, among other things, that clerics should not have a university education.[2] Soon after, William Dell, the Master of Gonville and Gaius College, Cambridge, published his *Triall of Spirits*, in which he advocated the secularization of the universities and – *plus ça change!* – the abandonment of classical studies.[3] These various attacks, all arrogant and intemperate, gained

1. Thomas Hobbes, *Leviathan*, Edwin Curley ed., Indianapolis IN, Hackett, 1994. The Chapter in question is xlvi, pp. 453-468.

2. John Webster, *Academiarum Examen*, London, Giles Calvert, 1654.

3. William Dell, *The Triall of Spirits*, London, 1664; reprinted Philadelphia PA, Benjamin Franklin and David Hall, 1760. (Since Wilkins and Ward replied to this work in 1654, it must have circulated in some form prior to its first recorded publication in 1664.)

enough traction that they provoked a defence of the universities, *Vindiciae Academiarum*, written jointly by John Wilkins, Master of Wadham College, Oxford, and Seth Ward, the Savilian Professor of Astronomy there.[4] Wilkins and Ward were intellectual giants of the age, founding members of the Royal Society, and later bishops, of Chester and Salisbury respectively.

Their answer to Hobbes is rather defensive. It consists essentially in saying that his criticisms of the Universities might perhaps have been accurate for the time when he, Hobbes, was a student, but that was half a century earlier, and, in the meantime, much had changed. Ward writes that at the time when Hobbes was a student:

> … the constitution and way of the University might (likely) be enclining to his Character of it, but now his Discourse seemes like that of the seaven sleepers, who after many yeares awaking, in vaine addressed themselves to act according to the state of things when they lay downe.[5]

However all that may be, Hobbes' diatribe does give us some kind of glimpse into how the doctrines of Aristotle were understood, and taught, in the English Universities at the beginning of the seventeenth century. The question of interest to us, in a work on the Peripatetic tradition, is how far that tradition had strayed – or not – from its origins in the nearly two millennia that had elapsed since the Stagirite wrote. Or, more succinctly: how aristotelian was Aristotelity?

Hobbes' Complaints

The famous chapter xlvi opens with a definition of philosophy as, roughly, the knowledge acquired by reasoning from a thing's generation to its properties, or from its properties to its generation, with a view to the betterment of human life. His examples are geometry, which permits the measurement of land and water, and astronomy, which permits calendars and timekeeping. There follows a list of three things that natural philosophy *is not*: brute experience and the prudence it gives rise to, supernatural revelation, and reasoning based on authority.

After some discussion of intellectual history (in which, here as elsewhere, his large classical and patristic erudition is on display) Hobbes comes to the point. The curriculum of the Universities is not philosophy, because it commits the third of the abovementioned sins: it relies on authority; indeed, it relies on the authority only of Aristotle. And that is what loses it the name of philosophy and earns it the title 'Aristotelity.'

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4. John Wilkins and Seth Ward, *Vindiciae Academiarum*, Oxford, Leonard Lichfield, 1654; reprinted by EEBO.

5. *Vindiciae Academiarum*, pp. 58-59.

But what exactly is it, in Aristotelity, that sticks so irksomely in Hobbes' craw? It would be good to sort through all his complaints, and to ask, in each case, how remote from, or near to, the actual thought of Aristotle the doctrine in question lies. That undertaking, however, would be very long: there seem to be upward of twenty irritants mentioned in Hobbes' rant, jumbled together somewhat chaotically. Many of them are relatively minor, however, so I'll keep myself to only three matters, three that seem to be Hobbes' principal irritants. The first is geometry, the second abstract essences (aka separated essences or substantial forms), and the third the idea of eternity.

i) Geometry

The story of Hobbes' engagement with geometry is a fascinating one. That it was absent from the university curriculum in his day is made clear by the fact that, although he studied at Magdalen Hall, Oxford, for 6 years, he knew nothing of the subject. He encountered it quite accidentally at the age of 40, when he was visiting a gentleman's private library at Geneva, and happened to see the book of Euclid's *Elements* lying open, and indeed lying open at the proof of Pythagoras' Theorem. *Toluit; lexit*. He was so entranced with this discovery that he set himself to learn geometry, and indeed he became a widely reputed geometer and mathematician in his day. It was as a mathematician that, during his productive years, he was principally known. It didn't end very well, for, much later in his life, he cockily claimed to have solved the ancient conundrum of squaring the circle, and he was humiliatingly refuted by the Savilian Professor of Astronomy, Seth Ward; a later effort at the same problem was refuted, very publicly, by another Savilian Professor, of Geometry this time, John Wallis. He was also a vocal champion of infinitesimals, and that too gave him trouble among the professors.[6] But Hobbes tenaciously took himself to be a great mathematician, and he certainly thought that geometry was the Ur-science, and that all disciplines should aspire to the clarity and irrefutability of Euclid. We have already seen that he took geometry to be a prime example of true philosophy. And, immediately after his pillorying of Aristotelity in *Leviathan*, he enters the complaint that there is scarcely any geometry taught in the universities. Part, it would seem, of Aristotelity, is precisely the *absence* in it of geometry.

It is true that Aristotle's rather schematic and lopsided treatment, in the *Politics,* of the curriculum of the ideal education[7] makes no mention of geom-

6. Hobbes' engagement with geometry, his mathematical battles, and his idiosyncratic views about infinitesimals, are engagingly recounted in Amir Alexander, *Infinitesimal – How a dangerous mathematical theory shaped the modern world*, New York NY, Scientific American / Farrar, Straus and Giroux, 2014.

7. *Politics*, Book VIII.

etry, or indeed of mathematics in general. This may be because the treatise breaks off at that point, or it may be that Aristotle's extreme, fascinated, preoccupation with the place of music in the curriculum drove all else from his mind.

But in any case Hobbes will not have been especially interested in Aristotle's philosophy of education; what he wants is to see the place of geometry as the Ur-science acknowledged in the theoretical work. And, it would seem, Aristotelity did not make any explicit room for geometry, let alone room for it as the master science. But even if Aristotle himself did not put it this way, the idea has definite ancestry in his work. There is some fluidity in his terminology, some fluidity about the meaning of 'mathematical,' but one clear line of thought emerges: some sciences are empirical, or applied, or physical branches of arithmetic or geometry (or stereometry). Optics is an application of geometry; mechanics and astronomy are applications of stereometry; music is an application of arithmetic.[8] These philosophy-of-science discussions are a bit abstract, to be sure, but we have at least one splendid example of the idea at work. In *de Incessu animalium* Aristotle is trying to understand how animals, especially humans, walk.[9] The analysis turns out to be entirely in terms of triangles. A person standing erect sticks out a leg; that leg does not reach the ground, for to do so it would have to be longer than the other leg: it would have to be the hypotenuse of a right-angled triangle. So then the person leans forward so that her extended leg touches the ground. She is then an isosceles triangle. And so forth. As people walk their heads bob up and down, for they change back and forth from being the apex of a right angled triangle to being the apex of an isosceles triangle whose side is the former hypotenuse[10] (See Figure 1). So here we see the mathematical science behind ancient kinesiology: geometry. It seems fairly clear that Aristotle would give pride of place among these sciences to geometry and arithmetic, though it is not clear that, of the two, geometry would be superior.[11] But however all those details might be negotiated, this much is clear: Aristotle would definitely see geometry as a (if not the) fundamental physical science: the science that seeks *the reason why* in several more applied sciences. It would seem that the university curriculum of Hobbes' day had entirely forgotten this important strand in Aristotle's thought. Here Aristotelity falls seriously short of Aristotle himself.

8. See the discussion in *Physics* B2, *Metaphysics* M3, and *Posterior Analytics* A13.

9. *De Incessu animalium*, Chapter IX, 708b30ff.

10. *De Incessu animalium*, 709a5ff.

11. At *Posterior Analytics* 87a34 he says that arithmetic is more exact (*akribestera*) than geometry.

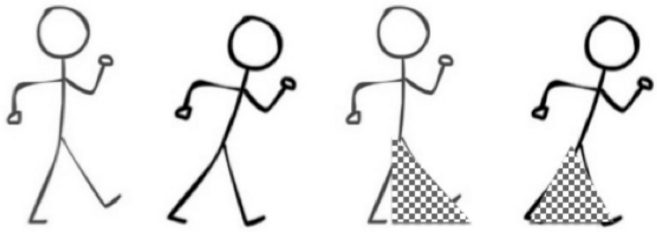

Figure 1: The geometry of human walking

ii) Separated essences

If Aristotelity sins by its omission of geometry, its major sin of commission, in Hobbes' view, is that of postulating separated essences, aka substantial forms, aka abstract essences. What sticks in Hobbes' craw here is the idea that over and above a given thing, there is an additional entity, its form or essence.

This idea is, for Hobbes, metaphysically impossible and even absurd; moreover it is dangerously harmful to the social order.[12] It's harmful to the social order in the following way. To quote Hobbes, the belief in separated essences

> frights [people] from obeying the laws of their country with empty names, as men fright birds from the corn with an empty doublet, a hat, and a crooked stick.

Separated essences are like scarecrows: they invite belief in disembodied spirits, in demons and angels, and other noncorporeal agents. And this gives a toehold to Roman Catholicism, with its spiritual doctrines, and its deference to the power of the pope. This in turn weakens the imperative for subjects to be obedient to their king: the divine law is held to be above the local positive law, and the pope lays claim to being above the king. This fear (which runs through *Leviathan*) is not unlike the fear that led Locke, fifty years later, to deny religious toleration to Roman Catholics: their loyalty to the pope compromised their loyalty to the king and so made them untrustworthy citizens, citizens of divided loyalty. Indeed, it is a leitmotiv of the age. Hobbes was so shaken by the horrors of the Civil War that his most strongly felt imperative, motivating and permeating *Leviathan*, is to quell and refute anything which would draw citizens toward disobedience to the lawful civil power.

However all that may be, our concern here is more with the philosophical or metaphysical issue of abstract essences. Aristotle's theory is subtle and liable to misunderstanding. And indeed, I am not sure that Hobbes' metaphysical tenets, his materialism, would allow him to understand Aristotle's idea. Aristotelity probably misrepresents Aristotle, Hobbes' understanding of

12. *Leviathan*, 460.

Aristotelity certainly misunderstood Aristotle. Indeed, Hobbes must think that abstract essences are absurd.

Let me explain. Aristotle, to put it very loosely, thinks that there are things called essences, and that everything has an essence; moreover these essences are – what shall I say? – different beings from the things whose essences they are. They are, however, coincident with those things; they occupy the same place as those things. How can that be?

Now Hobbes is a robust corporealist. Whatever exists is body, and body is extended in space. Of course you can't have two bodies in the same place.[13] So if a thing's essence is a different thing from the thing itself, you have two options. One is to think that the thing's essence is incorporeal, not extended in space, and that gives rise to a number of absurdities that he pilories with delight; but we can easily see that it's not a possible line of thought for Hobbes because of his robust corporealism. Anything that is real is body. The other option is to think that the essence is corporeal, but then it has to be in a different place from the thing whose essence it is.

And thus, in addition to a given thing like a rose, there would be the rose's essence; it would be a corporeal entity that exists somewhere, presumably just beside the rose itself. And so you introduce a whole army of extra entities – corporeal, spatial, though doubtless gauzy and insubstantial. And this gives rise to the belief in ghosts and demons we have mentioned, with its attendant political dangers.

So neither option is acceptable to Hobbes, and he thus rejects the Aristotelian idea of separated essences or abstract entities as nonsense, as one of the worst aspects of Aristotelity.

(A parenthesis here on the subject of incorporeality. Hobbes allows that we say that God is incorporeal, and he would allow us to continue to speak in this way, even though it violates his metaphysical tenets. The reason is that it is but an approximate way of speaking about the deity – the best we can do. To ascribe something impossible to God in this way is but a manner of expressing the inexpressible, and so it is a way of speaking that, for all its impossibility, does honour to God. And so it should continue. But we shouldn't try to make philosophical sense of it. If we do, we start lurching from embarrassment to embarrassment, making fools of ourselves. As Hobbes writes:

> But they that venture to reason of [God's] nature from these attributes of honour, losing their undertanding in the very first attempt, fall from one inconvenience to another […] in the same manner as when a man ignorant of the ceremonies of court, coming into the presence of a greater person than he is used to speak to,

13. This principle lies behind Hobbes' rejection of the theological doctrine of the Real Presence in the Eucharist.

and, stumbling at his entrance, to save himself from falling, lets slip his cloak; to recover his cloak, lets fall his hat; and with one disorder after another, discovers his astonishment and rusticity.)

So Hobbes thinks that Aristotle's belief in abstract essences, substantial forms, etc. is absurd. My own view is that he has not seen the subtlety of Aristotle's position – though here, I have to confess, he is in ample company. Like many others, he has not understood Aristotle's theory of abstraction.

Here it helps to remember that, in an interesting way, Aristotle's *aphairesis* is different from our abstraction. When we abstract (*abstrahere*), we intellectually 'pull off' from a thing or a bunch of things, the elements we are interested in and want to focus on. Consider a granite triangle:

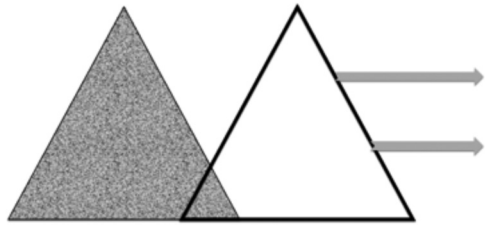

Figure 2: Ab-straction:
the ideal triangle is 'pulled away' from the real triangle.

In Greek, by contrast, what we intellectually 'pull off' from a thing is the stuff we are not interested in, in order to leave behind the thing we want to consider. Consider a granite triangle; in math class we are invited – in the Greek image – to imaginatively 'pull off' *and discard* some features of this object: its granite-ness, its colour, its weight. What is left is the mathematical triangle, the shape, we need for our proof or our theorem. We can represent this imaginative pulling-off-and-discarding by the dimming of the granite-ness: it is still there, but we're ignoring it.

	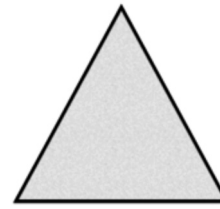
Granite triangle	*Aphairesis:* the granite is still there, but it is ignored.

Figure 3: *aphairesis*

The difference in the imagery here is important. In the English way of thinking we pull off the abstract triangle, and it's natural to think, we take it somewhere else. It has been removed from the original granite triangle. But in the Greek image, the abstract triangle is left precisely where the granite one was. The abstract triangle is exactly coincident with the original granite one. The abstract triangle is in a number of ways a different object than the granite one, but it exists exactly where the granite one does. Hobbes couldn't go there, because of his view that distinct objects are distinct bodies, and you cannot have two bodies coincident in one space.

Listen to Aristotle, in another context, expressing this idea of two 'beings' that coexist in one and the same place:

1. (*De Anima* III, 2, 427a1)
that which distinguishes is unified and undivided and inseparable in number, but divided in being.[14]
ἆρ' οὖν ἅμα μὲν καὶ ἀριθμῷ ἀδιαίρετον καὶ ἀχώριστον τὸ κρῖνον, τῷ εἶναι δὲ κεχωρισμένον;

2. (*De Anima* III, 2, 427a5)
it is divided in being but undivided in place and number
τῷ εἶναι μὲν γὰρ διαιρετόν, τόπῳ δὲ καὶ ἀριθμῷ ἀδιαίρετον

3. (*De Anima* III,7, 431a19)
The final [cognizer] is one and a single mean, though its being is multiple….
…τὸ δὲ ἔσχατον ἕν, καὶ μία μεσότης, τὸ δ' εἶναι αὐτῇ πλείω…

Another case in which Aristotle considers this same possibility of two things existing in one place is that of point or limit. Divide a line AB at C; the point C is then in a sense two points: the rightmost point of AC, and the leftmost point of CB. Double in definition, double in being, but one in place and number.

So Aristotle, I would argue, when he speaks of abstract essences, or separated essences, has in mind this sort of case. An essence is different *in being,* (i.e. in *definition*) from the thing whose essence it is, but not different in number, not different in time and space. Such abstract essences cannot get up and wander over graveyards to terrify the loyal subjects of the king. Or if they do, they have to take their bodies with them!

Here again, then, I would argue that Aristotelity departs from Aristotle, though I freely admit that it takes a subtle mind – subtlety wasn't Hobbes' *forte* – to see the point.

(Now I actually would want to go further than this and offer some extra if surprising comfort to Hobbes. I don't think that Aristotle is actually commit-

14. The translations are my own.

ted to the existence of immaterial forms, that is, forms that exist unenmattered. I leave aside, here, the very difficult case of the Prime Mover, of course. But the familiar arguments for immaterial forms are, in my view, unpersuasive.

First, a strictly textual argument. There is one and only one place in the whole Corpus of Aristotle where the word 'immaterial' ἄϋλος – unenmattered – may occur: *De generatione et corruptione* 322a28. The issue there is about just how it is that when the nutritive function of an animal sends digested food – flesh – to some part of the body, that flesh acquires the appropriate form, shape, for the work that it has to do. How, for example, would a lump of flesh come to be tube-shaped, if it has gone to build up a nostril or a vein? The text is very corrupt and chopped about. It may be that Aristotle is invoking some sort of magical immaterial something and so using the term ἄϋλος; but it could also be that the word is not ἄϋλος at all, but rather αὐλός – meaning pipe or tube. So the one and only occurrence of the word for 'immaterial' may very likely not be an occurrence of that word at all!

Second, in the account of sense perception, we know that the form of the sensible object is received by the soul without matter – *sine materia*. That sounds like knock-down evidence that, at a very humdrum level of life, forms exist unenmattered. But it won't do. The Greek is not ἄνευ ὕλης, but ἄνευ τῆς ὕλης: perceptual forms are received in the soul without the matter, that is, without the matter they are enmattered in in the outer world. It doesn't follow that they lack matter in the soul!)

(iii) Eternity

Says Hobbes:

> For the meaning of *eternity,* they will not have it to be an endless succession of time […]. But they will teach us that eternity is the standing still of the present time, a *nunc-stans* (as the Schools call it), which neither they nor any else understand, no more than they would a *hic-stans* for an infinite greatness of place.[15]

This common understanding of eternity as the 'timeless present,' which was doubtless part of Aristotelity, is absolutely and resolutely not of Aristotle. Aristotle had no such notion; for him the world was infinitely old, and will have an infinite future: eternity for him was beginningless and endless time.

Indeed, this point was a critical one in that long project of Late Antiquity, harmonizing Plato and Aristotle, that is, taking Aristotle aboard the Neoplatonic juggernaut, and massaging his various views to fit with a more platonic outlook. His view about the eternity of the world, however, was simply not compatible with Christian or Islamic Neoplatonism: that the world had a beginning in historical time was an item of religious faith. You may be able

15. *Leviathan*, p. 461.

to palpate and soften ideas about essence or form or matter to make them fit the Neoplatonic template, but the idea that the world is infinitely old is recalcitrant. This was a famous moment in the history of western thought when the Aristotelian commentators simply had to say that Aristotle was *wrong*. The honour fell to Philoponus, in the sixth century, who advanced a brilliant argument to the effect that infinite past time was logically impossible: it would require the existence of an *actual infinite series* – a thing that even Aristotle acknowledged to be an impossibility.

On this one, then, Aristotelity was absolutely, and notoriously, in contradiction to Aristotle himself. As far as it goes, Hobbes and Aristotle would have got on very well together!

Conclusion

What, then, is our verdict overall? We have of course only considered three of Hobbes' approximately twenty complaints, but at least two of them are major ones on which much depends. First, we have found that, Aristotelity, in leaving geometry largely out of account, was a fair reflection of the surface text of Aristotle, but that if the tradition had dug deeper it would have seen that Aristotle took mathematics – arithmetic and geometry – to be the underlying base level of pure science, at least in the natural world. Second, on the vexatious question of separated essences, we have argued that a true understanding of Aristotle's thought on this subject would be immune to the rather grotesque implications that Hobbes draws from it: Aristotelity got Aristotle wrong here, but for sure the matter is subtle, and it invites misinterpretation. Third, on the subject of eternity, we have found that Aristotelity was in direct contradiction to Aristotle himself.

On the whole, and this is scarcely surprising, Aristotle is a much richer and more rewarding study than is Aristotelity.

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SUMMARY

In Chapter xlvi of *Leviathan* Hobbes launches a blistering attack on the curriculum of his own university studies; the gist of this attack is that instead of teaching *philosophy* the universities teach *'Aristotelity,'* a slavish adherence to the doctrines of Aristotle. In this paper I ask whether 'Aristotelity,' as recounted by Hobbes, is a faithful rendition of the actual teachings of Aristotle. I consider three of Hobbes' complaints: i) the idea that Aristotle did not acknowledge the

priority of mathematics in science; ii) the idea that Aristotle understood essences to be ghostly entities floating around in space separate from the things of which they were the essences; and iii) the idea that Aristotle thought eternity to be a kind of timeless present. In none of these cases is Aristotelity faithful to Aristotle.

SOMMAIRE

Vers la fin de son *Leviathan*, Th. Hobbes critique ses propres études universitaires pour avoir abandonné l'enseignement de la *philosophie*, en y substituant ce qu'il appelle *'Aristotelity'*, c'est-à-dire, un dévouement servile aux doctrines d'Aristote. Le présent article soulève la question suivante : jusqu'à quel point l'*Aristotelity* dénoncée par Hobbes représente-t-elle la vraie pensée d'Aristote ? Nous considérons trois points : i) l'idée qu'Aristote n'avait pas reconnu la base mathématique des sciences naturelles ; ii) l'idée qu'Aristote avait conçu les essences comme des entités immatérielles séparées en espace des entités dont elles sont les essences ; iii) l'idée qu'Aristote concevait l'éternité comme un présent intemporel. Aucun de ces trois éléments de l'*Aristotelity* de Hobbes n'est fidèle à la vraie pensée du Maître.