Aspects of Hobbes

Noel Malcolm, one of the world’s leading Hobbes scholars, presents a set of extended essays on a wide variety of aspects of the life and work of this giant of early modern thought. The greater part of this volume is published here for the first time. Malcolm offers a succinct introduction to Hobbes’s life and thought, as a foundation for his discussion of such topics as his political philosophy, his theory of international relations, the development of his mechanistic world-view, and his subversive biblical criticism. Several of the essays pay special attention to the European dimensions of Hobbes’s life, his sources and his influence; the longest surveys the entire European reception of his work from the 1640s to the 1750s. All the essays are based on a deep knowledge of primary sources, and many present striking new discoveries about Hobbes’s life, his manuscripts and the printing history of his works. Aspects of Hobbes will be essential reading not only for Hobbes specialists, but also for all those interested in seventeenth-century intellectual history more generally, both British and European.
Hobbes's Science of Politics and his Theory of Science

Hobbes thought of his theory of politics as a 'science'. At the end of his English Optical Treatise he expressed the hope that 'I shall deserve the reputation of having been ye first to lay the grounds of two sciences: this of Optiques, ye most curious, and ye other of Natural Justice, which I have done in my booke De Cive.' The parallel, or distinction, between natural science and civil science recurs again and again in Hobbes's writings and the difficulty for Hobbes's commentators lies in deciding what the relationship is between these two different types of science. Most critics have assumed that the two types are closely related, and that we therefore have to understand how Hobbes conducts his physical science in order to be able to understand his science of politics. But a few writers, most notably Tom Sorell in his important recent study of Hobbes's philosophy, have argued in favour of a so-called 'autonomy thesis', according to which Hobbes's political science is independent, qua science, of his science of nature.2

Among interpretations which argue that Hobbes's two sciences were closely related, we can distinguish two versions of the argument: a strong version and a weak one. The strong version claims that Hobbes envisaged a single, continuous chain of derivation leading from physics, via psychology, to politics: this interpretation makes him a would-be 'social scientist' of a very literal kind, and an intellectual ancestor certainly of Comte, and possibly of Mill. The weak version, on the other hand, claims only that Hobbes applied the method of physical science to the science of politics, so that the political theory resembles or parallels the physics without necessarily being derived from it.

A classic example of the strong version of this argument can be found in Alan Ryan's book, The Philosophy of the Social Sciences: Hobbes believed as firmly as one could that all behaviour, whether of animals or inanimate matter, was ultimately to be explained in terms of particular motion: the laws of physics

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1 SW VII, p. 491.

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governing the motions of discrete material particles were the ultimate laws of nature, and in this sense psychology must be rooted in physiology and physiology in physics, while the social sciences, especially the technology of statecraft, must be rooted in psychology.3

The phrase 'rooted in' is perhaps a little less confident than 'derived from' or 'entailed by' would be; but the general picture is clear. This interpretation is certainly faithful to Hobbes's ontology, in which matter in motion is the only knowable reality, and it is also faithful to the overall scheme of human knowledge which Hobbes adhered to in planning his tripartite system of the 'Elements of Philosophy': De corpore, De homine, De cive.

As is well known, however, the history of Hobbes's writing and publishing of his tripartite system belies any strict interpretation of its cumulative structure. 'What was lost in order', he writes in the Preface to the second edition of De cive, 'is yet come forth first in time, and the rather, because I saw that grounded on its own principles sufficiently knowne by experience it would not stand in need of the former Sections.'4 There is a similar disclaimer in the first chapter of Leviathan, where Hobbes remarks that 'to know the natural cause of Sense, is not very necessary to the business now in hand... Nevertheless, to fill each part of my present method, I will briefly deliver the same in this place.'5 This may suggest that Hobbes's 'present method' is more a system of organization than a system of deduction.

When Hobbes says that his political theory is 'grounded on its own principles sufficiently knowne by experience', it is open to critics such as Ryan to argue that this indicates only a short-cut in the order of knowledge, not a break in the order of truth or logical deduction. But the resort to 'experience', i.e. introspection, which Hobbes makes use of when setting out the basis of his political theory, surely produces a quite different kind of truth from the truths which might be derived from the physiology of the brain and the nervous system. This objection is not merely a special point about the peculiarity of introspection. If we attempted to follow Hobbes's method through, ascending from one level of knowledge to the next, we would find that each new level required the introduction of concepts which were simply not contained in the subject-matter of the previous level. Physics will give us the concepts of 'motion towards' or 'motion away from'; but only psychology will provide the concepts of 'desire' or 'fear'. Hobbes seems to recognize this when, in the introduction to Leviathan, he invokes the maxim 'Noque Teipsum' and asks each reader to consider 'what he doth, when he does think, move, reason, hope, fear, &c., and upon what grounds'.6

Alan Ryan's strong version of the argument seems unable to cope with Hobbes's actual practice. The weak version, as put forward by writers such as John Watkins

5 Leviathan, p. 5.
6 Ibid., p. 5.
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and Maurice Goldsmith, is better equipped to take on board Hobbes's frequent comments emphasizing the difference in subject-matter between physics and politics. 7 The diagram of the sciences in chapter 9 of Leviathan, for example, begins by dividing all philosophical knowledge into two: 'Consequences from the Accidents of Bodies Natural', and 'Consequences from the Accidents of Political Bodies'. 8 (This diagram is, admittedly, a puzzle for most theories of Hobbes's method, since it also places both ethics and the science of justice in the human subsection of the science of 'bodies natural'; but the diagram is, in any case, a system of classification of the sciences rather than a programme of deductive method.) The picture of physics and politics as two radically different areas of subject-matter, existing more or less in parallel and both qualifying as sciences, is confirmed by the first chapter of De corpore, which explains that there are two parts of philosophy, called natural and civil, concerned with 'two chief kinds of bodies', which are 'very different from one another'. 9 The principal thing which these two sciences have in common, it seems, is that they are sciences; in other words, they employ essentially the same method in searching after the 'generation' and 'properties' of their respective 'bodies'.

The classic text for this line of interpretation is the passage in the Preface to the second edition of De cive, where Hobbes argues that 'everything is best understood by its constitutive causes', and compares the analysis of the body politic to the taking apart of a watch. In the English translation of De cive the passage appears as follows:

Concerning my Method. Though it is not sufficient to use a plain and evident style in what I had to deliver, except I took my beginning from the very matter of civil government, and thence proceeded to its generation, and form, and the first beginning of justice; for everything is best understood by its constitutive causes; for as in a watch, or some such small engine, the matter, figure, and motion of the wheels, cannot be well known, except it be taken in sundry, and viewed in parts; so to make a more curious search into the rights of States, and duties of Subjects, it is necessary, (I say not to take them in sundry, but yet that) they be so considered, as if they were dissolved . . . 10

In his recent book, Tom Sorell argues ingeniously that the real significance of this comparison is not the similarity which it suggests between physical and political investigation, but the dissimilarity. The comparison here, he notes, is not between a watch and a body politic; but between a watch and a set of rights and duties—the difference being that the 'parts' of a body politic are individual people, but the 'parts' of rights and duties are jural entities. He also notes that, while the watch is to be disassembled, the rights and duties are to be entirely 'dissolved' in thought:

8 Leviathan, ch. 9, table 2.
9 De corpore I, LV, l. p. 11.
10 De cive (English version), p. 72.

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this means that, while the physical scientist merely puts the real watch back together again, the political scientist can construct an ideal political entity of rights and duties as they should be. 11

Much of the reasoning with which Dr Sorell supports this argument is, I think, convincing. But as an analysis of the passage in De cive the argument fails, because it relies (as all previous commentators seem to have done) on the English translation. As I have indicated elsewhere, this translation was certainly not by Hobbes. 12 It is generally faithful, but often, as here, it blurs the details of Hobbes's argument. In the original Latin, Hobbes does in fact keep up a very close parallelism. The comparison is between the watch and the 'civitas'. In the one case we wish to investigate the function (officials) of the cogs, wheels, etc.; in the other case we wish to investigate the function or office or duty (officially again—this is a sort of conceptual pun) of the citizens and the right ('just') of the state. In the one case we take apart (dissolve) the watch; in the other case we do not actually take apart the state, but consider it as if taken apart (but dissolve). In the one case, in order to understand the function of the parts, we have to examine the material, shape, and motion of each of them; in the other case, we have to consider human nature, the ways in which it makes men draw together into a state and the exact way in which people must align themselves with one another if they are going to draw together.

By emphasizing the similarity between the two cases, I am contradicting Dr Sorell's textual analysis; but I think that emphasizing the similarity helps in the long run to confirm his general argument. Note first of all that Hobbes has not compared the state to a natural object such as a crystal or a sand-dune, which would be proper objects for investigation by the methods of physical science: he has compared it to an artefact, the nature of which can only be understood by understanding the intentions of the person who makes it or uses it. If you take a watch apart, you will find that one of its components is something called a governor, which turns the uneven motion of the unwinding of a spring into the even motion of the hands on the face of the watch. We could not understand the nature of the watch's arrangement of physical parts unless we understood what the governor was doing; and we could not have the concept of a governor unless we knew what watches were for. Of course, if a governor is to do its job it has to have certain physical properties; physics will describe the strength of the metal, the forces applied to it, the friction involved, and so on. The governor consists, after all, of nothing other than a piece of metal: there is no ghost in the machine. But a full physical description of it would not in itself give us the concept of a governor, any more than the physical description of a hemispherical metal object will give us the concept of a helmet or a cannonball.
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What I am trying to suggest here is the simultaneous truth and inadequacy of saying that the watch consists of nothing other than metal and is therefore entirely reducible to a physical explanation of its nature. And the point which I am making is not the same as the point which is usually made about ‘emergent properties’ in the case of physical phenomena which are not artefacts. A ripple in a lake, for example, is an emergent property of water under certain conditions: we know that there is nothing there except water molecules, and we also know that to talk of ripples is to use a level of description which is simply not appropriate to the molecular level of reality. But the nature of a watch qua watch or of a helmet qua helmet is not an emergent property. It didn’t just emerge—it was put there. And to describe it we need not just a different level of description but a different kind of description: description in terms of intentions. The same applies, I believe, so the nature of the state in Hobbes’s theory.

A brief comparison may be permitted here with Mill, whose notion of social science is in fact so reductivist that it hardly allows emergent properties, let alone intentional ones. In book six of the System of Logic, he announces:

The laws of the phenomena of society are, and can be, nothing but the laws of the actions and passions of human beings united together in the social state. Men, however, in a state of society, are still men. . . . (They) are not, when brought together, converted into another kind of substance, with different properties; as hydrogen and oxygen are different from water. . . . Human beings in society have no properties but those which are derived from, and may be resolved into, the laws of the nature of individual man.

But we should be clear that Mill is talking here only about social science, not about politics or policy. At the end of the book he brings in a different level of knowledge, ‘teleology’ or the doctrine of values, and explains (although in fact he explains very little here) that it is on a completely different footing from the science of society which he has outlined. It makes use of the science of society just as an architect makes use of physics: the aesthetic values which shape the architect’s design cannot themselves be derived from physical science. Although he leaves a great deal unsaid here, Mill does at least attempt a clean separation between fact and value—something which is sadly missing in the end from Hobbes’s argument.

Returning to Hobbes’s watch-analogy, it is worth noting, finally, that this passage from De cive resurfaces in the ‘Introduction’ to Leviathan, where it is expanded into Hobbes’s famous comparison between the state and an ‘automaton or artificial man’. Hobbes defines automata here as ‘engines that move themselves by springs and wheels as do blades of a watch’. Seeing the derivation of this passage from the watch-comparison in De cive helps us to see that the essential point about the ‘artificial man’ here is that it is artificial, not that it resembles a man—that

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resemblance is an extra layer of analogy, added in Leviathan because of the increased importance in that work of the theory of the ‘person’ of the commonwealth.

In the ‘Introduction’ to Leviathan, Hobbes indulges in a fanciful and elaborate enumeration of the ‘parts’ of this automaton which he proposes to investigate: the wealth of the population is the artificial man’s strength; the counsellors are its memory; reward and punishment are its nerves; and so on. Both qualities and physical parts are mingled promiscuously here: they are on a par with one another not in terms of a physical description of the automaton but in terms of the nature of the automaton as an artificial object, an object constituted by the intentions of the people who make it and use it.

In the passage in De cive, Hobbes said that he would investigate human nature and the ways in which it was apt to join together. Here in Leviathan he says the following:

To describe the Nature of this Artificial man, I will consider
First, the Matter thereof, and the Artificer. . . .
Secondly, How, and by what Compassion it is made; what are the Right and just Power or Authority of a Sovereign; and what it is that preserves and abates it.
Thirdly, what is a Christian Common-wealth.
Lastly, what is the Kingdom of Darkness.

And here, in other words, is the four-fold plan of Leviathan. If we look at his summary of Part I of the work, we can see that it contains, quite comprehensively, both sides of the critical debate about Hobbes’s ‘science’ of politics: I will consider’, Hobbes writes, ‘First the Matter thereof, and the Artificer, both which is Man’. Hobbes’s politics must therefore include both a science of human nature as the material of the state, and a science of human means, the ways in which men define and create the nature of the state as they fashion it out of that material.

Behind all this talk of material and workmanship, there lingers, quite naturally, an Aristotelian argument about the relation between ‘matter’ and ‘form’. There is nothing covert or shameful about the presence of this conceptual model: in the original passage in De cive Hobbes actually uses the terms ‘materia’ and ‘forma’, when he says that he has proceeded from the matter of the state to its generation and form. Does this mean that Hobbes was betraying his allegiance to the ‘new science’ of mechanistic physics? Not at all. One way of putting the new scientists’ objection to Aristotle’s theory of formal causes would be to say that they felt that this theory involved imputing some sort of purposive or intentionality to physical processes—an imputation which they believed to be superfluous or spurious. Hobbes, similarly, found the category of formal causation irrelevant to physical science. Yet there was no reason why he should abandon its use where the description of intentional actions was concerned: for this purpose it was ideally suited.

14 Leviathan, p. 1.
15 ibid., p. 1.
16 De cive (Latin version), p. 29.
17 151.
method of physical science could be used to describe the 'matter' of the commonwealth. But physical science itself would not supply a concept of the relation between matter and form; and in order to analyze the form of the commonwealth in terms of the intentions of the people who made it, a rather different type of science was also necessary.

Hobbes found the model for this type of science in the science of geometry. The essential similarity was striking. Both sciences yielded universal truths by expressing the connections between conceptual entities: lines, circles, and squares, or rights, duties, and laws. To express the relationship between the sovereign and the citizens was to expound an analytic truth, similar to that which states the relationship between a circle and its radius. Unfortunately, however, beyond this type of immediate similarity there lay a very shadowy terrain of uncertain analogies and shifting implications. The difficulties arose partly because Hobbes's views on the nature of geometry changed, and partly because he always tended to play down the peculiar status of the objects of geometry as conceptual entities, preferring to absorb geometry into a general theory about the nature of universal truths.

Hobbes's theory of universal truths was a product of his nominalism, and his nominalism was a good deal less extreme than is popularly supposed. He was a nominalist, not an arbitrator. Hobbes believed that all blue objects, for example, are really similar: our use of the same word to describe them is not a mere freak of human will or fancy. Indeed, his mechanistic theory of sense perception insists that this, since the nature of the conception in our brains which we connect with the word 'blue' is causally connected with the motion of the object which we see. We experience objects as similar because they really do cause similar motions.

Hobbes defines a true proposition as follows: 'that, whose predicate contains, or comprehends in its subjects, or whose predicate is the name of every thing, of which the subject is the name.' This definition is not directed simply at analytical truths of the sort, 'a bachelor is an unmarried man.' When I hold a blueberry and say 'this berry is blue,' I satisfy Hobbes's requirement for a true statement: 'this berry' and 'blue' are both names of the thing I hold in my hand.

Apart from this sort of particular contingent truth, Hobbes also distinguishes between what might be called general contingent truths and universal necessary truths. 'All crows are black' is a general contingent truth. It is true because 'black' happens to be the name of the thing of which 'all crows' is the name. But if we found a white crow we would still call it a crow; so this is not a universal necessary truth. 'All crows are birds' is a universal necessary truth, because we could never find a crow which was not a bird. Hobbes is being something of a traditionalist here, setting up a hierarchy of levels of description. We might put it as follows. The real similarity connected by the term 'bird' is a component of the more complex real

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similarity connected by the term 'crow.' We cannot identify something as a crow without (earliy on in the process) identifying it as a bird. In De corpore Hobbes gives an example of this sort of cumulative recognition of similarities as we approach an object from a distance, we see first that it is a body (i.e. corporeal), then that it is animate, then that it is rational. We 'compound' these concepts and arrive at the true judgement that it is a man. This sort of conceptual 'compounding', and its converse, conceptual resolution, provided the primary model for Hobbes's theory of resolution-compositive method—a method which, I believe, owed almost nothing to Galileo and very little to the Ptolemaic tradition of commentary on Aristotle. The use of the terms 'essentia' and 'componentia' was immensely widespread, across a whole range of disciplines; they were simply the Latin equivalents of the Greek terms 'analyein' and 'synthetis,' terms used in the Galenist tradition of diagnosis and prognosis, and in the Euclidean tradition of the methodology of mathematical problems. Galileo's use of resolution and composition was concerned with the investigation of the causes of phenomena. Hobbes's conceptual resolution was concerned with causes only indirectly or equivocally. Indirectly in the sense that, when an observer perceives an object to be first corporeal, then animate, then rational, these perceptions are the causes of his knowing that it is a man. Equivocally in the sense that having those properties is the 'cause' of the object's being a man—that is a use of the word 'cause' which was outlawed, strictly speaking, by Hobbes's ontology.

Conceptual resolution of this kind involved little more than a progression through different levels of description; as such, it offered a much less fruitful model for a theory of scientific method than, for example, the use of 'resolution' to solve mathematical problems in the Euclidean tradition. Yet what appealed to Hobbes about geometry was its ability to yield new knowledge from an initial store of definitions and axioms. Ethics might resemble this form of science, since it was possible to resolve terms such as 'justice' into terms such as 'contract,' and then to compound again in ways which might reveal hitherto unknown truths about what could or could not count as justice. But it was difficult to see how resolving and compounding the concepts of a crow could tell you anything you did not already know about crows. Hobbes would have benefited, perhaps, from Locke's distinction between natural objects, whose nominal essences differ from their real essences, and conceptual objects (such as mixed modes and relations), where the nominal essence is the real essence.

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18 Ibid., III, p. 38. 19 Ibid., III, p. 38.

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Hobbes's early works gave the scenic status of "science" only to those disciplines, such as geometry, which yielded universal truths. The knowledge of physical causes, on the other hand, belonged to the realm of experience, conjecture, and hypothesis. After a few years in Paris in the 1640s, however, Hobbes began to include the knowledge of causes in his definitions of science. He may have been prompted to explore this direction of argument partly by the Mercante circle's preoccupation with physical science, and more generally by the feeling that the physical causation of one event by another was the only category of fundamental explanation suitable for a universe consisting entirely of matter in motion. But one further reason for importing physical causes into the realm of true science may have been, paradoxically, Hobbes's desire to explain the special power of geometry to yield new knowledge.

The first signs of this new line of thinking come in the notes on Hobbes's philosophy made by Sir Charles Cavendish in 1645, and in the undated manuscript at Chatsworth, the "Logica et T.H.", which closely resembles Cavendish's notes and represents a draft of the early chapters of De corpore.32 In these accounts the description of philosophy or science is no longer concerned with attaining universal propositions through the use of syllogistic definitions: "Philosophy", Hobbes writes, "is the knowledge of the properties of bodies, acquired by correct reasoning from the notions of their generations; and conversely the knowledge of possible generations, acquired by correct reasoning from known properties."33 The distinction between natural science and other sorts of philosophy is maintained only in so far as the former is hypothetical; both are concerned with 'generation'. Now, the use of the word, instead of the word 'cause', gives a clue as to how this transition was effected in Hobbes's mind. For it is a word which, in his subsequent works, is characteristically used for geometrical figures when they are conceived of as products of the motion of a point. This way of conceiving of lines was being developed by geometers such as Roberval, who used it to solve problems involving complex curves such as spirals and trochoids. And it was precisely in this period (1643-5) that Hobbes became a friend of Roberval and developed an interest in this method; a discussion between the two of them on the comparison between a spiral and a parabola bore fruit in a demonstration which Mercante published in his Hydrostatica in 1644.34

32 Ibid., p. 467. "Philosophia est corporium proprietate, ex notis generatim, et notis generatim, ex notis proprietate, ex notis causis universals, sive generalibus".