Automata in the Political Thought of Thomas Hobbes

Ziyaad Bhorat

Abstract

Thomas Hobbes is often considered a mechanistic thinker. But Hobbes did not actually use this term to describe his own thinking. He did, however, engage automata as a concept for his political thought. Commentators who emphasize mechanics have tended to overlook this engagement. For Hobbes, automata had come to refer to causality by chance or spontaneity, as well as things that move themselves. Hobbes understood this through *automaton* appearing in ancient sources, as well as automata in the artistic milieu that surrounded him. These sources led Hobbes to consider the matter, motion, and shape of his commonwealth. I argue that his paradigmatic re-ordering of the state is designed to move man from a fear of the future, to a love of knowledge of causes and consequences. The modern Hobbesian state is therefore an automated artifice acting on man's will. It acts to facilitate man's development of causal knowledge.

I. Introduction

In Thomas Hobbes' political thought, automata have been largely neglected. This is understandable. Hobbes' *Leviathan*, published in 1651, only mentions automata once. In his Introduction, Hobbes claims that Leviathan is a type of automata. This would appear to accord with Hobbes' reputation as a mechanistic thinker, employing a machine metaphor for the state. This paper, however, will show that there are good reasons to challenge this view. Hobbes, in fact, engaged deeply with both ancient and modern sources on the concept of automata. I argue that examining this engagement is important for understanding his political thought and automation of the modern state.

We will proceed in three steps. After commenting on previous scholarship in this section, in the second section we will turn to Hobbes'

engagement with ancient sources. Hobbes' translations of Thucydides and Homer provide us with how he thought to render various Greek declensions of *automaton* into English at the time. More conclusively, we will examine the publication of Hobbes' polemic with the bishop John Bramhall. In 1656, Hobbes replied to Bramhall in *The Questions concerning Liberty, Necessity, and Chance*. This reply dealt directly with how he understood *automata* in Aristotle's *Physics*. We will explore this in further detail.

In the third section, we will examine the artistic milieu in which automata were developing during Hobbes' own time. We will see how the hydraulic automata in Renaissance gardens form part of a web of aesthetic fascination. We will explore how this web not only connects Hobbes to the man who engraved *Leviathan's* frontispiece, but also one of Hobbes' most well-known contemporaries and interlocutors, René Descartes. Examining the works of both Hobbes and Descartes, we will see how the fascination with automata, particularly waterworks, watches, and clocks, served as a paradigm for Hobbes' thinking.

Finally, and before concluding, we will apply Hobbes' ancient and paradigmatic understanding of automata to his political thought in *Leviathan*. Hobbes' Leviathan appears as an automaton in his Introduction. But Hobbes's denial of self-movement in *De Corpore* requires us to examine his automaton again in light of an external, contiguous body.[1] By re-examining Hobbes' understanding of Plato and Aristotle, as well as his own comments on philosophy, we will see how Hobbes' conceives of the political thinker as a demiurgic 'Architect' initially contiguous to the commonwealth.

As a demiurgic 'Architect', Hobbes eliminates chance and spontaneity from the commonwealth. We will see how chance first appears in *Elements of Law* and is slowly removed in *De Cive*, and *Leviathan*. But man's tendency to misperceive causes remains as a threat to the commonwealth. Ignorance of causes and the accompanying fear is a threat to the ordered commonwealth. Hobbes solves this by including love or

desire for the knowledge of causes: Hobbes' automaton is required to developmentally transform a "Will to contend by Battell"[2] into a will to knowledge. It is in this sense that the modern state can be said to be an automated artifice.

This paper thus aims to recover an important piece in Hobbes' scattered "philosophy of artifice", as Michael Oakeshott has described it.[3] In doing so, I hope to make at least three contributions to scholarship on Hobbes. The first is to challenge the mechanistic view of his thought that has crept into scholarly literature, particularly as it relates to political theory. As Cees Leijenhorst has pointed out, "mechanistic philosophy" or "mechanism" were not terms Hobbes employed to describe his own thinking.[4] In fact, it is Robert Boyle, one of Hobbes' fiercest critics,[5] who embraces "mechanical philosophy" in his *Grounds for and Excellence of the Corpuscular or Mechanical Philosophy*, published in 1674. Applying these terms to Hobbes thus runs the risk of flattening the variation in thought across his contemporaries, and considering his thought in terms he himself did not use.

This is not to suggest it should never be done. Indeed we should not wish to negate the use of these terms entirely. Quentin Skinner, for example, writes of Hobbes' "long-standing ambition to outline a purely mechanistic conception of nature".[6] But Leo Strauss notes that Hobbes in fact presents his material as "borrowed from the mechanistic."[7] In considering Hobbes' political thought we must be especially careful to distinguish mechanics from automata. Hobbes referred to automata. But as we will see, his reconfiguration of the concept blurs the lines with our contemporary understanding of mechanics by stripping out spontaneity, chance, and self-movement. It is therefore understandable but inadequate to suggest, as David Gauthier has done, that Hobbes simply applies "the principles of mechanical explanation to political bodies".[8] Others like Carl Schmitt have similarly referred to Hobbes' "mechanization of the concept of the state".[9] Taking this idea into visual imagery, Horst Bredekamp states that Hobbes "provokes the reader with the confusing notion of the

state as a living machine".[10] This confusion, I suggest, stems from the drift in meaning associated with privileging mechanics, and overlooking automata as Hobbes himself understood it.

This paper's second contribution therefore is to a growing body of scholarship examining the role automata have played in Hobbes political thought. David Bates has suggested that Hobbes' "human automaton making up the machine precludes its full integration into the unity that the will of the sovereign represents".[11] Samantha Frost has recently critiqued approaches like Bates' as a Cartesian tendency to view Hobbes' as "describing people as machinelike automata", offering instead a thoroughly materialistic account of the subject.[12] Minsoo Kang has suggested that Hobbes' automaton is "like a great automaton made up of many small automata", missing however the indivisibility Hobbes ascribes to the sovereign.[13]

Thomas Spragens, and Emanuela Bianchi offer another promising direction. Spragens' briefly examines Aristotelian *automaton* and Hobbes' reconfiguration of motion for his politics.[14] Bianchi offers a gendered analysis of aleatory matter in Aristotle's corpus, examining how *automaton* comes to mean both "aleatory phenomena *and* machines possessed of illusory self-motion".[15] Drawing on Bianchi's insight I deepen Spragen's assessment of automata in Hobbes by showing how Hobbes reconfigures its meaning. This allows Hobbes to artifice a commonwealth that moves man from a fear of the future to a love of knowledge about causality.

Finally, my attempt to recover this artifice in Hobbes's political thought contributes to the aesthetic appreciation of automata as another influential form of art. Scholars have already recognized the role drama or theatre has played in Hobbes political thought. Sheldon Wolin argues that in Hobbes' theatrical commonwealth the "dominant figure is the playright".[16] Noel Malcolm has echoed this "psychological theatre", drawing on Hobbes' references to theatre within his corpus.[17] Davide Panagia has suggested that, as a work of art, the "sovereign is an object

that appears and circulates in public".[18] To this, therefore, I add an aesthetic account of automata. Hobbes' engagement with the automata surrounding him can enrich our understanding of the paradigm used to develop his political thinking.

In sum, examining how Hobbes understood and reconfigured automata is fruitful to understanding his political thought. His theorization of the state as an automaton marks a moment where, as we shall see, one of Aristotle's most enigmatic concepts is thrust into politics. And automata do not terminate with Hobbes' political thought. Marx will later theorize capital itself as an automaton in *Das Kapital*.[19] In *On Liberty*, Mill will aim to recover human nature from the possibility that "automatons in human form" might perform political and even religious functions.[20] And in *Der Antichrist* Nietzsche will decry the decadence of his age, characterized by the emergence of man as a "mere automaton of duty".[21] The automaton in Hobbes' political thought, then, lays an indelible imprint on the political thinking for those who will succeed him.

II. Ancient *Automaton*

In his 1629 translation of Thucydides' *History of the Pelpponesian War*, Hobbes found both automata and mechanics. That Hobbes admired Thucydides is well-known. In his autobiographical *Vita* he declares that "it was Thucydides who pleased [him] above all the rest".[22] In Thucydides, Hobbes found occasion to translate declensions of *automaton* and *mēkhanē*. For *mēkhanē*, Hobbes' preference is to translate it as an engine.[23] For example, Hobbes translates *mēkhanas* as the "engines of battery", used in the battle between the Peloponnesians and the Plataens.[24] And when Brasidas led the assault against Lecythus using a *mēkhanēs*, out of which the Spartans intended to cast fire onto the Athenians' fences, Hobbes again translates this as a "great engine".[25] He refers to it again in the same place as simply an engine. In Thucydides, then, Hobbes finds in *mēkhanē* the lifeless contrivances that were built

and intended for battle.

The appearance of *automaton* is much rarer in Thucydides. Where it does occur however, Hobbes' translations are illuminating. In the conflict between the Peloponnesians and the Plataens, the Peloponnesian "engines of battery" do not manage to create an advantage. So they attempt to set fire to the city. Thucydides describes the fire as one greater than had ever been produced before "by the hand of man" (*kheiropoiēton*). [26] Fires likes these however *do* occur without man's helping hand. They occur *apo tautomatou* or "out of their own accord". The articular form is given again when Athenagoras addresses the Syracusan assembly against Hermocrates' warnings of Athenian invasion. Athenagoras dismisses the warning as emanating from those who would "shadow their own with the common fear". Such reports do not arise *apo tautomatou*, or "raised by chance", but are instead "framed on purpose by such as always trouble the state".[27] Another translation is given when Alcibiades is addressing the Spartan assembly. Here Alcibiades suggests that in fortifying Deceleia the Spartans will reap whatever is in the territory. Part of this will be taken, the other will be acquired from the territory *automata*, or "of its own accord".[28]

Hobbes' early translations of the declensions of *automaton* thus point to chance, and the ability of a thing to do something of its own accord. We notice that these translations take place within highly political contexts: warfare and the deliberation of the assembly. *Automaton* is also distinguished from man's own direct action. Fires not made by man can occur of their own accord, territory can produce wealth of its own accord, and fearmongering in the state occurs not by chance but by bad actors. *Automaton*, therefore, is quite different to *mēkhanē*, with political implications that Hobbes appears to have understood.

But we have another ancient source to further examine Hobbes' understanding of *automaton*. Hobbes' translated Homer's epic poetry in 1675, four years before his death. It took him just over a year, and he was eighty-seven years old at the time. His rendering of the *Iliad* and *Odyssey*

was undertaken, as he claims, "Because [he] had nothing else to do".[29] Unlike his translation of Thucydides, Hobbes' Homeric translations are terse and truncated. But it succeeds the presentations of his political philosophy, including *Leviathan*. Moreover Hobbes himself suggests that its publication was aimed at those against his "more serious writings" in order to "set them on [his] verses to show their wisdom".[30] In light of this, examining *automaton* takes on a new importance.

The first thing we notice in Hobbes' Homeric renderings is that there is no translation of *mēkhanē* as an engine. However, *automaton* still appears. In the *Iliad*, the gates of Olympus open *automatai*, or "of itself" when Juno (Hera) approaches the heavens in wrath.[31] But Hobbes adds additional information to the original Greek here. Bracketed after the gates' opening of itself, Hobbes adds that it is through Jove (Jupiter or Zeus) that this power is ultimately granted. Hobbes translates one other declension of *automaton* in the text. When Agamemnon calls his leaders together prior to the battle with the Trojans, Menelaus joins *automatos*, or "unbid".[32] But there is also a noticeable omission in Hobbes' translation. Vulcan's (Hephaestus) golden tripods are an ancient example of automata. Vulcan creates them himself so that they could enter and leave the gathering of the gods *hoi automatoi*, or of themselves. Aristotle references their movement as *automatous* in his *Politics*, a text we know Hobbes had read.[33] Hobbes' *Iliad* omits this characteristic. Instead, all that is preserved is that they "go and come again at his [Vulcan's] command".[34]

Hobbes' *Iliad* now emphasizes that *automaton* can be explained by divine or human action. It is not distinct from this action. We may be tempted to think that this is simply a function of the contextual differences between *automaton* as it appears in *Iliad*, and the *Peloponnesian Warre*. But Hobbes' rendering of Homer is also far looser than his fidelity to the original Greek displayed in his rendering of Thucydides. Is Hobbes expressing more of his own thought on *automaton*, then, in the *Iliad*? To answer this, we need to look at one more intervening source of *automaton* for which Hobbes provides not simply a translation,

but also an extended philosophical explanation. This source was published between the time of Hobbes' renderings of Homer and Thucydides.

In 1656, Hobbes had discussed *automaton* in *The Questions concerning Liberty, Necessity, and Chance.* This text was a response to the bishop John Bramhall, drawing on the prior publication of a point-for-point polemic between the two men that had actually first occurred orally in 1645.[35] The polemic dealt with the nature of human freedom, focusing particularly on (free) will, necessity, and liberty. It would only conclude in 1658 with the publication of Bramhall's *Castigations of Mr Hobbes.* Hobbes chose not to respond at this point. But Hobbes' determinism and compatibilism suggests how he had come to view the *automaton* he had read in ancient texts.

Hobbes would at first seem to distinguish, but still associate, spontaneity with *automaton*. Bramhall had first given the example that "children, fools, madmen, brute beasts" behave spontaneously.[36] This meant acting merely with "a conformity of the appetite, either intellectual or sensitive, to the object".[37] Hobbes implores his readers to see that spontaneous action is really one and the same as what is necessary and voluntary. The "Latins and the Greeks", he says, "did call all actions and motions whereof they did perceive no cause, spontaneous and *automata.*" But for Hobbes this is an incorrect common perception, or rather a failure to understand the cause involved. Hobbes then gives examples of perceived spontaneity. In one example, he suggests that the ancients had thought that heavy things falling downwards did so "of their own accord", if they were not otherwise hindered from doing so.

Any Hobbesian distinction between spontaneity and *automata* shrinks when we consider that both Hobbes and Bramhall are ultimately referring to *automaton* as it is conceptually formulated in Aristotle's *Physics.* In Book II Aristotle dealt with causality occurring *apo tukhēs* and *apo tautomatou.* Whereas *automaton* there is imperfectly rendered as chance or spontaneity, *tukhē* is imperfectly rendered as fortune or luck. Aristotle describes *automaton* as the more general case, and *tukhē* as a

special case.[38] The causal action of *tukhē* does not concern inanimate things, beasts, and children since these are incapable of exercising deliberate choice (*proairesin*). *Automaton*, on the other hand, can concern these things. Like *tukhē*, it is always a cause of what is by either by nature or a result of man's thought (*nous*).[39] Aristotle gives various examples of *automaton* at work. One is that of a horse bolting and subsequently being saved.[40] For Aristotle the horse cannot deliberate and so its subsequent saving is *automaton* or by chance. In discussing spontaneity, Hobbes challenges Bramhall's Aristotelian view by referencing the deliberation of a "horse retiring from some strange figure".[41] Spontaneity and *automaton* were thus functionally equivalent for Hobbes if not identical.

From the above discussion we can conclude that Hobbes indeed developed an understanding of automata from the ancient sources he engaged. For Hobbes these automata had come to mean chance, spontaneity, and things that do something of their own accord. Hobbes' rendering of Homer's *Iliad* indicates a shift in this understanding. Where *automaton* appears or is omitted, it can be explained by human or divine action. Denying spontaneity years before, Hobbes had also declared in the same place that "chance produces nothing".[42] Strictly speaking then, Hobbes denies spontaneity and chance from the meaning of automata. It would be tempting to suggest that this reduces automata to a mechanistic determinism. But we still have the automatic aspect of doing something of one's own accord, or self-movement. To examine this further, we must turn to the automata around Hobbes.

III. Automata as an Artistic Paradigm

In the previous section we examined how Hobbes came to understand automata through his engagement with ancient sources. In this section we move from ancient texts to touch on the modern milieu in which automata were developing as art. Hobbes certainly appreciated the arts. In *De Homine*, published in 1658, Hobbes affirms this as he says both "the

sciences and the arts are good". For by science, men may "know the causes of everything". But every art applied to matter is "also of the greatest public utility, since it is to them that we owe nearly all the useful tools and trappings of mankind".[43] In *Leviathan*, he tells the tale of the ancient city of Abdera. In Abdera the people had come to see tragedy of Perseus and Andromeda. The tragic imprint was so powerful that a few spectators fell into fevers of madness.[44] Hobbes borrows from the stage to warn against the madness of melancholy. But what, then, does Hobbes borrow from artistic automata? As we shall see, Perseus and Andromeda also played out their spectacle for Hobbes somewhere else. This time, they did so as apparently self-moving automata.

Let us begin in 1598, when Hobbes was ten years old. Henri IV had sought the craftsmanship of Tommaso and Alessandro Francini for the adornment of his palaces. Tommaso Francini was an artisan and engineer renowned for his exquisite garden waterworks. This had earned him the patronage of Ferdinando de' Medici, uncle to Henri IV's wife, Maria. The Francini brothers would design hydraulic systems to create figures and pieces that appeared to move by themselves in the grottoes and fountains of their noble benefactors. In 1587, Renaissance Platonist Franceso De Vieri described their work. For Vieri, the automata at the Medici palace in Pratolino induced "ecstasy" (*estasi*) in those who looked upon them.[45]

At Henri IV's French palace at Saint-Germain-en-Laye, the Francini brothers set to work on new automata to delight their patrons. This included the young Louis XIII.[46] In his diary entry on the 27th February 1644, English gardener John Evelyn describes seeing the brothers' work at Saint-Germain-en-Laye. He notes artificial gods, men, and animals in various states of self-movement. Amongst others, he documents Orpheus, Neptune, and the poetic re-enactment of Perseus rescuing Andromeda from a fearsome beast. These hydraulic pleasure gardens, with their apparently self-moving automata, had become increasingly desirable fixtures at the palaces of rich and titled. In his *Voyage*, Montaigne had written both favourably and unfavourably about

the waterworks he had encountered on his travels. [47] He describes apparently self-moving beasts, divinities, and human figures at the Fugger's palace, the Medici palace at Pratolino, and Villa d'Este in Tivoli.

But these waterworks and hydraulic automata were expensive to maintain. When Louis XIII's court moved to the palace at Fontainebleau, they were abandoned. As Silvio Bedini wrote, "No trace of it remains other than some engravings made by Abraham Bosse in 1625 from Francini's original drawings".[48] As it turns out, this Abraham Bosse is the same artist who is now credited with the frontispiece for Hobbes' *Leviathan*.[49]

Hobbes' frontispiece was not new work for Bosse. Bosse was a prolific engraver who developed a large acumen of frontispieces. Both men shared a love for geometry,[50] so it is little surprise that Hobbes chose Bosse for the task while Hobbes was exiled in Paris from 1640 to 1652. For a time Hobbes lived a short walk away from Bosse's workshop in the rue Harlay.[51] We do not know whether he saw the engravings Bosse had done for the Francini brothers. This collection of engravings appeared under the authorship of Alessandro Francini.[52] They were detailed schematics of the hydraulic systems, automata, and grottoes at Saint-Germain-en-Laye.

But in fact we do know that Hobbes saw Saint-Germain-en-Laye for himself. Between 1646 and 1648 Charles II had fled to live with his mother at the palace. As Hobbes' letters to Samuel Sorbière show, Hobbes wrote from Saint-Germain-en-Laye in 1646. There he complained that he was only "teaching mathematics, not politics" to Charles II.[53] This was probably not the first time he saw automata in the gardens of the rich and titled. Hobbes also undertook grand tours of the European continent. He accompanied his noble English patrons on at least three occasions, where it is likely he would have seen similar spectacles for himself.[54] Unlike Montaigne however, Hobbes did not keep such a detailed record of his travels.

Hobbes' other contemporaries also knew Saint-Germain-en-Laye. Perhaps the most well known amongst these was René Descartes. Descartes almost certainly visited, if not lived in Saint-German-en-Laye

for a while. [55] Although Descartes' *L'Homme* was only published posthumously, he had worked on it much earlier – around 1632-1633. There he described clocks, artificial fountains, mills, and other machines that had the power to move themselves.[56] These self-moving things would also inspire his *Discours de la Méthode*, a copy of which Hobbes received in 1637.[57] In this text, Hobbes would have read about self-moving machines or "*automates*", as Descartes described them.[58] In the same text Descartes compares animals to another form of automata, the "*horologe*" or timepiece.[59] Marin Mersenne would later ask Hobbes to respond to another Cartesian text, *Meditationes*. In that text too Hobbes would most certainly have read Descartes' famous rumination on whether the men Descartes saw outside his own window were in fact really men or "*automata*".[60]

Like Descartes, Hobbes found himself inspired by the art of automata. In the Preface to *De Cive*, first published in 1642, Hobbes outlines that in "investigating the right of a commonwealth and the duties of its citizens" one must "examine separately the material, shape, and motion of the parts". His paradigm for this method is mentioned as an automatic clock, "*horologio automato*", or another engine that is similarly complex or involved, "*machina paulo implicatiore*".[61]

In *De Cive* Hobbes also refers to "the mechanical arts" as the arts of the "superior crafts".[62] In *Leviathan* Hobbes classifies the science of engineers, architects, and navigation under "Mechaniques", or the "Consequences from the motion of special kinds, and Figures of Body". This grouping is categorically distinct from "Politiques, and Civill Philosophy", although both are considered to flow ultimately from "Knowledge of Consequences".[63] Hobbes therefore borrows from the mechanical art of creating automata for his political thought. But, he only does so insofar as both share in knowledge of causes and consequences. Put another way, the artistic automata around Hobbes were a mechanical expression of a more originary concept of automata. As we have already seen, this concept is drawn from ancient sources on causality and (self-

)movement. Hobbes is not simply applying mechanistic automata to politics, rather he is finding this originary concept of automata in both mechanic arts and politics. It remains for us to see the latter.

IV. Leviathan as Automaton

We now turn to automata in Hobbes' political thought. The previous sections have shown how Hobbes understood automata by examining his engagement with ancient texts, and the modern artistic milieu in which automata were developing. This provided Hobbes with an understanding of a concept of automata. Ancient *automaton* referred to chance, spontaneity, and things that do things of their own accord. The automata that actually surrounded him provided him with a mechanical expression of this thinking about causes and consequences. It is with this in mind that we turn to automata as it appears in *Leviathan*.

Hobbes appears to retain self-movement in automata in the Introduction to *Leviathan*. He brackets a definition of automata as "Engines that move themselves by springs and wheeles as doth a watch". In the case of the commonwealth, Hobbes continues that it is sovereignty that gives "life and motion to the whole body". The sovereign would appear to be the engine that moves the commonwealth. But we need only have recourse again to *Leviathan's* frontispiece to see that the sovereign is still very much part of Leviathan and its body. Can an initial source of movement of a body originate within that body? Can the springs and wheeles of a watch initiate movement in the whole watch? At first glance, Hobbes would appear to answer affirmatively. But this is actually at odds with his causal thinking.

In *De Corpore*, or *On the Body*, Hobbes is clear that bodies cannot move themselves. Motion in one body occurs because of a contiguous, moved body. Since *De Corpore* deals with Hobbes' knowledge of consequences and causal thinking, we must take this as a superior

statement to what he has laid out in his 'politiques'. The Latin *Leviathan*, published in 1668, leaves the formulation of self-movement intact.[64] Hobbes' Leviathan, as described in the Introduction, would then appear to be a rhetorical flourish, a metaphor for the commonwealth. But it is well known that, despite his own uses, Hobbes protests against metaphor as an abuse of speech.[65] Moreover, recall Hobbes' had already claimed automata as his inspiration for examining the material, motion, and shape of the parts of the commonwealth. Leaving this question of motion to mere metaphor, then, is inadequate.

We must examine Hobbes' political presentations in light of his first philosophy. Hobbes uses a Cartesian formulation of automata in the Introduction. This is a borrowed presentation that would have most likely pleased those acquainted with the apparently self-moving automata at the time. Charles II, recall, spent time around the automata at Saint-Germain-en-Laye. Hobbes presented the future king with his own copy of *Leviathan* in 1651. It is therefore unsurprising that the sovereign is presented as the engine that gives motion to the commonwealth by itself.

With this same presentation, however, Hobbes has alluded to something else. In the Introduction, Hobbes describes "the Artificer" as the one whose design shows intent for an automaton's engine to give motion to its body. This artificer stands external to, and contiguous with the body. Who or what is this "Artificer" as regards the commonwealth? Put another way, what first moves the sovereign? Hobbes suggests that sovereignty is attained either by natural force, or by artificial agreement. The "Artificer" therefore appears refer to the latter. We may therefore be tempted to assume that the artificers of Leviathan are simply man, as the Multitude, who agree and covenant for its creation. But to assess whether the Multitude indeed sets the sovereign engine in motion, it is instructive to look at the commonwealth's dissolution.

In discussing the institutional dissolution of a commonwealth, Hobbes' distinguishes man in two ways. He states that when commonwealths are dissolved by "intestine disorder, the fault is not in

men, as they are the *Matter*, but as they are the *Makers*, and orderers of them".[66] This strict formulation is not found to correspond in *Elements of Law*. In *De Cive*, Hobbes refers to "the externall Agent, whereby a certain and determined motion may in act be produced" as part of the causes of dissolution.[67] But in *Leviathan*, Hobbes goes on to stress that in fact "without the help of a very able Architect", men will create a "crasie building, such as hardly lasting out their own time".[68] Clearly this external agent or contiguous body threatens the commonwealth, being able to attain sovereignty by natural force. But Hobbes also identifies his preference for a contiguous "Architect" figure to better order the making of the commonwealth. Amongst the Multitude then, there are knowledgeable orderers who do not resort to natural violence. But who are these "Architect" figures?

We can understand Hobbes' "Architect" by turning again to his engagement with ancient texts. Hobbes was familiar with both Aristotle's *Politics* and Plato's *Timaeus*.[69] In Book I of the *Politics*, Aristotle references the creations of Vulcan (Hephaestus) and Daedalus. Aristotle says that if productive instruments could similarly perform their functions *automatous*, or of their own accord, there would have beeen no need for slaves or subordinates to master craftsmen.[70] Both Vulcan (Hephaestus) and Daedalus are demiurgic figures, and mythological artificers. By artificing the commonwealth, Hobbes' contiguous "Architect" follows the demiurgic footsteps of Vulcan and Daedalus into politics itself. Still, this is not as grand as the world-creating *dēmiourgos* in Plato's *Timaeus*. In the *Timaeus*, a dialogue in which the Syracusan Hermocrates reappears, the *dēmiourgos* creates the ordered universe (*kosmos*) according to a paradigm (*paradeigmatōn*).[71] The *Timaeus* is rich with the geometric references to the demiurgic creation of the world. In this sense it precedes Hobbes' own inquiry into geometry, and the shape of the parts of the commonwealth.

Is Hobbes suggesting himself as a political demiurge? He certainly believes that there is more than one "Architect" figure for a commonwealth. For example, he compares Leviathan to the "Common-

wealth of *Plato*".[72] Moreover Hobbes suggests that those "who govern a whole Nation, must read in himself, not this, or that particular man; but Man-kind".[73] He is clear that his *Leviathan* offers a claim to reading all of mankind, which should be considered by those who will govern. Should Hobbes' reading be accepted, he would indeed have provided the impulse to set the sovereign engine in motion. We see then that Hobbes' self-moving automata are really things that continue to move only after they are initially set in motion by a contiguous body. It is Hobbes, as an artificer amongst others, who can provide this initial motion. However, unlike external bodies using natural force, Hobbes not only prefers artificial agreement but also submits himself to his own artifice. The contiguous body initiating movement thereafter becomes part of a larger moving body.

But Hobbes' paradigmatic ordering of the commonwealth would leave little room for chance or spontaneity within it. The contiguous body setting the sovereign in motion explains Leviathan's efficient causality. Within Leviathan, then, chance gives way to complex, necessitated motion. Hobbes indeed removes mention of chance as a concept from *Leviathan.* In *Elements of Law*, Hobbes had discussed the law of nature regarding the distribution of things that cannot be divided nor enjoyed in common. This was to be solved by lot. The two sorts of lot, arbitrary and natural, were both attributed largely to chance.[74] In the corresponding presentation in *De Cive*, Hobbes removes chance from natural lot. Arbitrary lot now consists in "meer chance (as they say) or fortune".[75] *Leviathan* removes this reference to chance and fortune completely. Arbitrary lot is simply agreement, whereas natural lot is primogeniture or first seizure.

Hobbes does still refer to fortune and luck in *Leviathan.* However, "Good luck" is defined as the "Secret working of God".[76] Similarly, in discussing the "true causes of things", Hobbes says that the causes of good and evil fortune for the most part are invisible".[77] Those who are ignorant of natural causes incorrectly think "fortune is the cause of things

contingent; that is, of things whereof they know no cause".[78] This is consistent with the development of his thinking on causality. Hobbes is clearly aware that people will continue to be ignorant of, and misperceive causes.

This ignorance presents a problem. As Hobbes says, those who are ignorant of remote causes will attribute all events to "causes immediate, and Instrumental", finding fault with the "publike Government" and eventually the "Supreme Authority". Those who are ignorant of natural causes are disposed to believing, telling, and inventing lies.[79] This is a threat to the ordered commonwealth – one that could lead to sedition and intestine disorder. Ironically like Athenagoras on Hermocrates, Hobbes is wary of those who might "shadow their own with the common fear" in their ignorance.

Hobbes' design for a solution to this is surprising. His sovereign must ensure Leviathan continues to move unimpeded. The sovereign must over-awe subjects, and keep the covenants holding Leviathan together through the "feare of some coerceive Power".[80] As is well known, the state of nature is characterized by the "continual feare, and danger of violent death". Man in this state has sufficient knowledge of the "Will to contend by Battell", a disposition in this state of natural liberty. [81] Once the artifice of the commonwealth comes into existence, man submits his will to that of the sovereign, and must be content with a more regulated scope for liberty. Fear then, is quite rightly the motion that creates Leviathan. But neither fear nor awe is sufficient to ensure it moves unimpeded.

It is love or desire that guard against the ignorance of causes. More specifically, it is the "love of the knowledge of causes" or "desire men have to know the causes of naturall bodies".[82] Hobbes admits that perpetual fear always accompanies man in the ignorance of causes. This is particularly acute in the state of nature, but persists in a *crasie,* disordered commonwealth in which subjects are still ignorant of causes. For Hobbes it is "fortune; the solicitude whereof" that would lead man into "the feare of what was to befall them in time to come", and ultimately the

creation of false gods, or "as many Gods, as there be men that feigne them".[83] But love or desire for knowledge of causality leads man more easily to knowledge of a single, causal First Mover than fear of the future does.

With multiple false gods, superstitions, and the pursuit of fortune, a commonwealth is doomed to fail. Hobbes compares living in this fear of the future to Prometheus' punishment. Prometheus was bound and continually subject to torment during the day, and recovery at night.[84] An ordered commonwealth simply cannot keep its subjects in ignorance, for that accompanying fear will threaten its continued existence. Fear must therefore be transformed into love or desire. This is a developmental transformation that a commonwealth must undertake. In particular, a "Will to contend by Battell" must be transformed into a will to knowledge. The sovereign, as the engine, must therefore over-awe men and initially keep them in fear of breaking their covenants. But it must also simultaneously undertake to move them to desire the knowledge of causes.

In Oakeshottian terms therefore we see more clearly how the relation between will and artifice plays out through the commonwealth. It is man's fear that wills the artifice of the commonwealth. As an automaton, the artifice of the ordered commonwealth thereafter moves man, as its matter, to a will borne from love or desire for a knowledge of consequences. In eliminating chance and spontaneity from his first philosophy, Hobbes has precisely created a lack that must be filled by a love or desire to know necessary causes. The commonwealth, as an automaton, seems to move man to fill this lack of its own accord. The ordered modern state thus ticks on like a watch that is ever-perfecting its own movement. In this sense it becomes an automated artifice. But it is Hobbes who first identified its material, gave it shape, and set it in motion.

V. Conclusion and Implications

As we have seen, automata are not marginal to Hobbes' political thought. Neither Leviathan nor the subject is simply a mechanistic automaton. Moreover, the automaton is not just a metaphor for the commonwealth. It is a complete re-ordering of political thinking. Hobbes engaged with the ancient concept of *automata*, and was surrounded by artistic automata in his own time. As his thinking developed, he reconfigured automata to remove chance and spontaneity. He also refused to accept the idea of self-movement. In doing so, he brought automata thoroughly within the control of man. This allowed him to present a politics ordered by matter, motion, and shape. More specifically, he designs an automated artifice to move man from perpetual fear to a desire for knowledge about the world. In doing so, it acts on man's will itself. As Hobbes understood, art is wielded over man, so that man may properly wield art.

Hobbes did not consider this a mechanistic approach himself. He distinguished his politics from mechanics, only borrowing his paradigm from mechanical arts. Ultimately, he was concerned with causality and consequences, and therefore the politics required for its pursuit. We must therefore take great care in applying mechanics to his thought, particularly his political thought. Our contemporary understanding of mechanics easily obscures Hobbes' engagement with ancient sources, and the art contemporaneous with him. As a result, we can forget the debts Hobbes' political thought owes to the ancients, and the arts.

These debts are clear in the case of automata. In particular, Hobbes' engagement with ancient *automaton* presents a rich opportunity to re-examine one of Aristotle's most enigmatic concepts. Emanuela Bianchi's work has deconstructed its relation to the feminine. She recovers from Aristotle a slippage in his organized thought – in the association of chance and errancy to the feminine. Hobbes would appear to bury even that slippage, emphasizing Jove's power over the gates that open *automatai* for Juno. But chance and spontaneity are by no means banished so completely. Ironically, they drive our contemporary attempts automate

what we want to control. Recovering these meanings from automata therefore allows us to reconsider the role they played in the formation of the modern state. It asks us to consider what might be left in politics the closer we come to a more complete knowledge of causes and consequences, and why we are moved to this completion.

Hobbes' engagement with the arts also adds diversity to aesthetic thinking about his politics. His visual strategies, and the theatre, have rightly proven to be an important locus into understanding his political thought. But even before the drama can be played, the stage must be built. Like a demiurgic master craftsman, Hobbes creates the automaton to order the matter, motion, and shape of the commonwealth. In doing so he anticipates later political thinkers. Through his own Architect, Hobbes anticipates Rousseau's Pygmalion-esque legislator in the *Contrat Social*. This legislator also stands external and prior to the state. But Hobbes' paradigmatic thinking also provides an ordered politics in which movements will begin, ideologies will take shape, and man will continue to wrestle with one of our greatest works of art – the modern state.

Notes

1. Thomas Hobbes, *De Corpore* [On the Body], in *The English Works of Thomas Hobbes of Malmesbury*, ed. Sir William Molesworth (London: J Bohn, 1839), 2.9.7. I cite all Hobbes' works by chapter and section number.

2. *Leviathan*, 13.62.

3. Michael Oakeshott, *Introduction to Leviathan*, in *Rationalism in Politics and Other Essays* (Indianapolis: Liberty Fund, 1991), 221–94, at 246.

4. Cees Leijenhorst, *The Mechanisation of Aristotelianism* (Leiden: Leiden, 2002), 7. Leijenhorst is specific about his use of the term 'mechanisation' to "reflect the attempt to reduce all natural phenomena to material particles that work on each other by contact and local motion".

5. For more on Hobbes' scientific polemic with Boyle, see Steven Shapin, and Simon Schafer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton: Princeton University Press, 1985). See also Quentin Skinner, *Visions of Politics Volume III*, (Cambridge: Cambridge University Press, 2001), 325 on Hobbes' exclusion from the Royal Society and Boyle's enmity.

6. Skinner, *Visions of Politics Volume III*, 6.

7. Leo Strauss, *The Political Philosophy of Hobbes: its Basis and its Genesis*, (Chicago: University of Chicago Press, 1963), 6.

8. David Gauthier, *The Logic of Leviathan: The Moral and Political Theory of Thomas Hobbes* (Oxford: Clarendon Press, 1969), 2.

9. Carl Schmitt, *The Leviathan in the State Theory of Thomas Hobbes*, trans. George Schwab and Erna Hilfstein, (Westport: Greenwood Press, 1996), 37.

10. Horst Bredekamp, *Thomas Hobbes' Visual Strategies*, in *The Cambridge Companion to Hobbes's Leviathan*, ed. Patricia Springborg (Cambridge: Cambridge University Press, 2007), 33.

11. See in particular David Bates, *States of War: Enlightenment Origins of the Political* (New York: Columbia University Press, 2012), 79.

12. Samantha Frost, *Lessons of a Materialist Thinker: Hobbesian Reflections on Ethics and Politics* (Stanford: Stanford University Press, 2008), 21.

13. Minsoo Kang, *Sublime Dreams of Living Machines: The Automaton in the European Imagination* (Cambridge: Harvard University Press), 133.

14. Thomas Spragens, *The Politics of Motion: The World of Thomas Hobbes* (Lexington: The University Press of Kentucky, 1973), 67.

15. Emanuela Bianchi, *The Feminine Symptom: Aleatory Matter in the Aristotelian Cosmos* (Oxford, Oxford University Press), 69. Bianchi does not examine Hobbes but her she provides an excellent analysis of Aristotelian *automaton.*

16. Sheldon Wolin, *Hobbes and the Epic Tradition of Political Theory*, in *Fugitive Democracy and Other Essays*, ed. Sheldon Wolin and Nicholas Xenos (Princeton: Princeton University Press, 2016), 27.

17. Noel Malcolm, *Aspects of Hobbes* (Oxford: Clarendon Press, 2002), 42.

18. Davide Panagia, *The Poetics of Political Thinking* (Durham: Duke University Press, 2006), 39.

19. *"Als Kapital, und als solches besitzt der Automat im Kapitalisten Bewußtsein und Willen..."* in Karl Marx, *Capital: A Critique of Political Economy Volume I,* ed. Friedrich Engels, trans. Samuel Moore and Edward Aveling (New York: Dover Publications, 2011), 440.

20. John Stuart Mill, *On Liberty*, in *On Liberty and Other Writings*, ed. Stefan Collini (Cambridge: Cambridge University Press, 2017), 59.

21. *"Was zerstört schneller, als ohne innere Notwendigkeit, ohne eine tief persönliche Wahl, ohne Lust arbeiten, denken, fühlen? als Automat der »Pflicht«? Es ist geradezu das Rezept zur décadence, selbst zum Idiotismus"* in Friedrich Nietzsche, *The Anti-Christ*, in *The Anti-Christ, Ecce Homo, Twilight of the Idols and Other Writings*, ed. Aaron Ridley and Judith Norman (Cambridge: Cambridge University Press, 2005), 10.

22. Thomas Hobbes, *Thomae Hobbes Malmesburiensis Vita Carmine Expressa*, in *Thomae Hobbes Malmesburiensis Opera Philosophica Quae Latine Scripsit Ominia*, ed. Sir William Molesworth (London: J Bohn, 1839), I follow the translation given in Skinner, *Visions of Politics Volume III*, 43.

23. I work from David Grene's corrected edition here, citing the Greek pagination directly in Hobbes' translation. See David Grene, *The Peloponnesian War: The Complete Hobbes Translation* (Chicago, University of Chicago, 1989). Other examples include the engines brought to besiege Potidaea at 2.58.1; Spartans sending galleys to Asine to make engines at 4.13.1; Thrasyllus' plans to use engines and take Eressos by assault at 8.100.5.

24. *The Peloponnesian War,* 2.76.4.

25. *The Peloponnesian War,* 4.115.2.

26. *The Peloponnesian War,* 2.77.4.

27. *The Peloponnesian War*, 6.36.2. Hobbes translations *ek andrōn* as 'framed on purpose', though strictly speaking this directly references actions caused by man (*andrōn*).

28. *The Peloponnesian War*, 6.91.7.

29. Thomas Hobbes, *Considering the Virtues of an Heroic Poem*, in *The English Works of Thomas Hobbes* of Malmesbury, ed. Sir William Molesworth (London: J Bohn, 1839). Also, Thomas Hobbes, Thomas Hobbes, *The Iliads and Odysses of Homer*, in *The English Works of Thomas Hobbes* of Malmesbury, ed. Sir William Molesworth (London: J Bohn, 1839). Again I cite the Greek pagination directly in Hobbes' translations.

30. Hobbes, *Considering the Virtues of an Heroic Poem*. Eric Nelson has persuasively argued that Hobbes' Homeric translations are in fact a continuation of his thinking in *Leviathan*. My reading would support this view. See Eric Nelson, *Thomas Hobbes: Translations of Homer,* (Oxford: Clarendon Press, 2008).

31. *Iliad,* 5.749; 8.381

32. *Iliad,* 2.369.

33. *Politics*, 1.1253b.

34. *Iliad*, 18.376.

35. Thomas Hobbes and John Bramhall, *Hobbes and Bramhall on Liberty and Necessity*, ed. Vere Chappell (Cambridge: Cambridge University Press, 1999).

36. *Discourse of Liberty and Necessity*, ibid, 2.

37. *A Defence of True Liberty*, ibid, 43.

38. *Physics* II.6.197b1-10.

39. *Physics* II.6.198a1-5. See also Giulia Sissa, *La Génération Automatique*, in *L'Animal Dans L'Antiquité*, eds. Barbara Cassin and Jean-Louis Labarrière (Paris: LP J. Vrin, 1997). With reference to the Aristotle's *Metaphysics* and Aquinas' subsequent commentary, Sissa clarifies the idea of spontaneous generation as a possible attribute *within* natural or artificial generation and not external to it.

40. *Physics* II.6.197b15-30.

41. *Liberty and Necessity*, supra note 41, 19.

42. *The Questions Concerning Liberty, Necessity, and Chance*, supra note 41, 69.

43. Hobbes, Thomas. *De Homine and De Cive* [*Man and Citizen*], ed. Bernard Gert, (Indianapolis: Hackett Pub. Co.). 11.9.

44. *Leviathan*, 8.36.

45. *"Et in Pratolino perché quelle statue si voltino, suonino, gettino acqua, sono tanti e tanti artifizi stupendi in luoghi occulti, che chi gli vedesse tutti insieme, ne n'andrebbe in estasi."* See in Francesco De Vieri, *Discorsi di M. Francesco de'Vieri, Detto Il Verino Secondo* (Firenze: Marescotti, 1587), 64.

46. Accounts by the young royal's *medecin*, Jean Hérouard, suggest Louis XIII was highly enamored by the hydraulic automata as well as Tommaso Francini himself. See Albert Mousset, *Les Francine, Créateurs des Eaux de Versailles, Intendents des Eaux et Fontaines de France de 1623 a 1784* (Paris: A. Picard, 1930), 34.

47. Michel De Montaigne, *Journal de Voyage en Italie par la Suisse et L'Allemagne en 1580 et 1581*, ed. M. Rat (Paris: Garnier, n.d.). See also Jessica Riskin, *The Restless Clock: A History of the Centuries-Long Argument over What Makes Living Things Tick* (Chicago: Chicago University Press, 2016).

48. Silvio Bedini, "The Role of Automata in the History of Technology," *Technology and Culture 5*, no. 1 (1964): 24–42, at 28.

49. See Horst Bredekamp, *Stratégies Visuelles de Thomas Hobbes : Le Léviathan, Archétype de l'Etat Moderne, Illustration des Oeuvres et Portraits* (Paris, Maison des Sciences de l'Homme, 2003). See also Quentin Skinner, *From Humanism to Hobbes: Studies in Rhetoric and Politics* (Cambridge: Cambridge University Press, 2018), at 271, for a discussion about the artist behind the frontispiece. Previous suggestions include Wenceslaus Hollar, see Malcolm, *Aspects of Hobbes*, 200.

50. See for example Abraham Bosse, *Traité de Pratiques Geometrales et Perspectives: Enseignées dans L'Academie Royale de la Peinture et Sculpture* (Genève: Minkoff Reprint, 1973).

51. Skinner, supra note 56.

52. Alessandro Francini, *Recueil, Modèles de grottes et de fontaines. Dessins lavés,* in BNF Estampes et photograpgie, Réserve Hd-100(A)-Pet Fol; also in ANF, O¹ 1598.

53. Thomas Hobbes, *Letter 45, [24 September] 4 October 1646, Hobbes to Samuel Sorbière*, in *The Correspondence of Thomas Hobbes: Vol I: 1622-1659*, ed. Noel Malcolm (Clarendon Press: Oxford, 1994), 138–141.

54. AP Martinich and Roy Allison Vaughan, *Hobbes a Biography* (Cambridge: Cambridge University, 1999), at 29. These patrons included William Cavendish, his son, and the son of Gervase Clifton (who was also named Gervase).

55. See Stephen Gaukroger, *Descartes: an Intellectual Biography* (Oxford: Clarendon Press, 1995), at 63–64 where he discusses Adrien Baillet's claim that Descartes did indeed live there.

56. AT XI 120. I cite the Adam-Tannery texts for Descartes' works.

57. Supra note 60. *Letter 27, 4[/14] October 1637. Sir Kenelm Digby to Hobbes*, 51.

58. AT VI 55.

59. AT VI 59. See also Dennis Des Chene, *Spirits and Clocks: Machine & Organism in Descartes* (Ithaca: Cornell University Press), 13.

60. AT VII 32.

61. Thomas Hobbes, *On The Citizen*, ed. Richard Tuck and Michael Silverthone (Cambridge: Cambridge University Press, 1997). Also the Latin version: Thomas Hobbes, *Elementa Philosophica De Cive*, (Amsterodami: Elzevir, 1647).

62. *De Cive,* 13.14.

63. *Leviathan*, 9.

64. *Automata omnia, sive machinas omnes quae ab Elastris Rotulisque intus dispositus motum habent...*See Noel Malcolm, *Thomas Hobbes: Leviathan Volume II – The English and Latin Texts* (Oxford, Oxford University Press: 2012), 17.

65. Of course, as critics have also pointed out, Hobbes employs his own metaphors. Noel Malcolm, *Aspects of Hobbes*, 227, argues that Hobbes only protests metaphors attempting to "conceal that they are metaphors, or conceal deficiencies in logic in circumstances where dispassionate argument is called for". However a strong case could be made that both of these circumstances apply to *Leviathan's* Introduction.

66. *Leviathan*, 29.167.

67. *De Cive*, 12.1

68. *Leviathan*, 29.167.

69. Karl Schumann, *Hobbes and the Political Thought of Plato and Aristotle*, in *Selected Papers on Renaissance Philosophy and on Thomas Hobbes*, eds. Piet Steenbakkers and Cees Leijenhorst (Dordrecht: Kluwer Academic Publishers, 2004), 191–218, at 193. Schumann has examined Hobbes' corpus and persuasively

argued that of all Platonic texts we can say Hobbes was "fairly well aware of the content of Timaeus".

70. *Politics* 1.1253b –1254a.

71. *Timaeus* 28c-29a.

72. *Leviathan,* 31.193.

73. *Leviathan,* Introduction.

74. *Elements of Law,* 17.5.

75. *De Cive,* 3.17–18.

76. *Leviathan,* 10.41.

77. *Leviathan,* 11.50–51.

78. *Leviathan,* 46.375.

79. *Leviathan,* 11.51.

80. *Leviathan,* 14.68.

81. *Leviathan,* 13.62.

82. *Leviathan,* 11.51; 12.52.

83. *Leviathan,* 12.53.

84. *Leviathan,* 12.52.