

# The use of scripture in the beast machine controversy<sup>1</sup>

## I. INTRODUCTION

The impression we are often given by historians of philosophy is that the readiness of medieval philosophers to appeal to authorities, such as The Bible, the Church, and Aristotle, was not shared by many early modern philosophers, for whom there was a marked preference to look for illumination via experience, the exercise of reason, or a combination of the two.<sup>2</sup> Although this may be accurate, broadly speaking, it is notable that, in spite of the waning enthusiasm for deferring to traditional authorities, appeals to scripture remained commonplace in the work of early modern philosophers. Classic works such as Hobbes' *Leviathan* (1651), Malebranche's *Search after Truth* (1674-5) and Locke's *Two Treatises* (1689) are littered with biblical citations, while many others contain at least a liberal sprinkling of scriptural references. Some thinkers made a virtue out of including occasional references to the Bible in their work, such as George Berkeley, who uses them to good effect in his *A Treatise concerning the Principles of Human Knowledge* (1710) and *Three Dialogues between Hylas and Philonous* (1713).<sup>3</sup>

Such references (and deferences) to scripture have not escaped the attention of commentators: in the secondary literature we often find it said that early modern thinkers appeal to scripture 'in support of' a favoured doctrine or theory, e.g. in one recent work it is claimed that 'many of the great moderns cite scripture in support of their philosophical conclusions'.<sup>4</sup> While such statements are accurate as far as they go, they are rarely accompanied by a recognition that there are different kinds of 'support', and that a thinker can use scripture in different ways depending on the kind of support he (or she) wants it to provide. In the context of philosophical debates it is possible to discern three distinct uses of

scripture, namely the authenticatory, the corroboratory (or justificatory), and the reconciliatory:

The *authenticatory* use of scripture seeks to ground a theory in scripture, i.e. to treat a theory as true (or probably true) purely on the basis of what is said in scripture. Here scripture provides the sole evidence for a theory.

The *corroboratory/justificatory* use of scripture is an attempt to corroborate a theory that is supported on other grounds. Here scripture provides additional evidence for a theory.

The *reconciliatory* use of scripture involves showing that a theory is consistent with scripture. The aim here is much more defensive, as in this case scripture is not taken to provide positive evidence for a theory at all; it is merely a minimal requirement for the acceptability of a theory that it be shown not to conflict with scripture.

If we are to understand the philosophers of the early modern period, the philosophies they developed, and the debates they fought, it is not enough to acknowledge *that* they used scripture; we also need to understand *how* they did so. This paper is intended to contribute to this *desideratum* by examining how scripture was used by those who engaged in a particular debate within natural philosophy, the so-called beast-machine controversy of the 17<sup>th</sup> and 18<sup>th</sup> centuries. A few words on this are in order.

The beast-machine controversy was sparked by claims made by Descartes in his *Discourse on the Method* (1637).<sup>5</sup> Descartes there cleaved creation into two separate realms, one of corporeal substance (body, matter, extended thing), the other of spiritual substance (mind, soul, thinking thing), and argued that human beings straddled both, being composites of soul and body.<sup>6</sup> Descartes did not extend this privilege to animals on the grounds that their actions could be adequately explained on the supposition that they followed naturally from the arrangements of animals' bodily organs in the same way that a watch's actions followed naturally from the configuration of its component parts. In other words, animals were pure

machines, without a spiritual, incorporeal soul. And this was no lack of an unimportant metaphysical extra either, for as Descartes located all thinking, understanding, and reasoning in the incorporeal soul, the very thing animals lacked, it followed that animals were without any kind of mental activity. Subscribers to animal automatism typically endorsed Descartes's line on this, and so seriously did they take their commitment to rejecting all mental activity in animals that many automatists, in addition to offering direct proofs of the beast-machine hypothesis, often fought for it indirectly as well, by arguing that animals did not think, or reason. Opponents, likewise, often sought to overturn animal automatism by showing that animals can and do engage in such mental activities. The beast-machine controversy rumbled on until the end of the 18<sup>th</sup> century, though it was at its height in the latter half of the 17<sup>th</sup> century. After that, animal automatism declined in popularity quite steadily; even in 1737 Abbé Macy, himself an automatist, all but conceded that the battle over the beast-machine was lost when he noted that 'All philosophers, or at least the majority', endorsed animal souls.<sup>7</sup> Hence the fortunes of animal automatism followed the fortunes of Cartesianism, the philosophy from which it had sprung. Indeed, for many of Descartes's followers animal automatism was part and parcel of Cartesianism, and so close was the link perceived to be that one critic, Gabriel Daniel, even went so far as to consider animal automatism to be the very essence of Descartes's philosophy, describing it as 'pure Cartesianism'.<sup>8</sup> Although this overstates the matter somewhat, it remains the case that proponents of the beast-machine hypothesis were invariably Cartesians, or at least broadly sympathetic to key planks of Descartes's thought such as the mechanistic account of the natural world and the radical distinction between mind and body.<sup>9</sup> Consequently, as the number of Cartesians dwindled over the course of the 18<sup>th</sup> century, so did the number of animal automatists.

If we are to examine the use of scripture in early modern philosophy, the beast-machine debate makes a worthwhile case study for a number of reasons. As one observer

noted in 1693, there was no article of faith on the matter of animal souls.<sup>10</sup> As a result, thinkers were not compelled by their religion or creed to be for or against animal souls, allowing them to develop whatever position on animal automatism they considered most reasonable. In doing this, a good percentage of the debate's protagonists made appeals to scripture. Although accurate numbers are hard to ascertain, by my (rough) calculation, around a third of those engaged in the debate made such an appeal. Examining these appeals, and thus tracking the use of scripture across the course of the beast-machine debate, is what shall occupy us in the remainder of this paper. It should be noted that there has been no previous scholarly examination of the way scripture was used in the debate. Indeed, from the secondary literature it is difficult to get a sense even of the extent to which scriptural justifications were invoked by those who were involved in the debate, let alone the character of those justifications. Jean-Antoine Guer, who was the first to chronicle the beast-machine debate in 1749, said nothing at all about the use of scripture.<sup>11</sup> More recent commentators have at least noted that appeals to scripture were made during the debate, and they have even identified some of those who made them, but this is typically done only in passing.<sup>12</sup>

Given that the early modern period is typically portrayed as the age in which traditional authorities yielded either to reason or experience or both, we might reasonably expect to find that appeals to scripture made over the course of the beast-machine debate were predominantly defensive in nature. Specifically, that for the most part, thinkers were content to reconcile animal automatism with scripture, but did not seek in scripture any kind of corroboratory or authenticatory support for the doctrine. Although this would be consistent with what we are routinely told of the Age of Reason, it is precisely what we do not find. To anticipate the results of our survey, almost all of the uses of scripture in the course of the beast-machine debate were corroboratory in nature, though the bald statement of this fact

does not do justice to the various ways in which scripture was used, nor does it capture how the use of scripture shaped the debate. All of these things will become clear as we proceed.

## II. THE SANGUINE ANIMAL SOUL

The Cartesian doctrine of the beast-machine is sometimes depicted as denying that animals have a soul of any kind. While some early modern thinkers may have interpreted it that way, Descartes's considered position was that animals are endowed with souls, albeit corporeal ones, consisting of nothing more than the animals' blood. In endorsing this view, which I shall call the doctrine of the sanguine animal soul, Descartes claimed that he was in accord with scripture; as he wrote to Fromondus in 1637, 'like the Bible, I believe ... that the souls of animals are nothing but their blood'.<sup>13</sup> He goes on to cite the relevant chapters and verses:

I do not see how those who credit animals with some sort of substantial soul distinct from blood, heat and spirits can answer such Scripture texts as Leviticus 17:14 ('The soul of all flesh is in its blood, and you shall not eat the blood of any flesh, because the soul of flesh is in its blood') and Deuteronomy 12:23 ('Only take care not to eat their blood, for their blood is their soul, and you must not eat their soul with their flesh').<sup>14</sup>

On his own terms, the soul Descartes here grants to animals is scarcely worthy of the name; elsewhere he is insistent that it is the rational soul (i.e. the human mind) *alone* that is given the name of soul.<sup>15</sup> What he allows animals is not even a pale imitation – it is not rational, or incorporeal, or immortal; at best it is a principle of (animal) life, nothing more. Nevertheless

in the sanguine animal soul Descartes finds a concept of 'soul' which he is comfortable applying to animals, even if (or rather: *because*) it had been emptied of most of the content he thought the true concept of 'soul' should have.

How should we construe Descartes's use of scripture here? Thierry Gontier argues that it is entirely defensive (and so reconciliatory, according to the schema outlined in the introduction): 'These scriptural references have no other function [for Descartes] than to respond to other scriptural references; the initiative is therefore never that of Descartes who, generally speaking, does not think that scripture can be an authority in physics'.<sup>16</sup> Gontier does not identify the scriptural references he thinks Descartes is responding to, but this is not an oversight for as it happens Descartes is not responding to any.<sup>17</sup> Descartes's letter to Fromondus (actually to Plempius for Fromondus) is a response to one from Fromondus which contains a series of criticisms of the *Discourse on the Method*. The one relevant here is Fromondus's allegation that if Descartes's hypothesis of animal automatism is successful in explaining all of an animal's operations mechanically then it may further the cause of atheism by making redundant not just an incorporeal principle of life and action in animals, but in humans too.<sup>18</sup> Descartes is therefore not responding to any scriptural passages cited against him; the initiative in his appeal to scripture is entirely his own. This, however, does not in itself determine whether Descartes's aim in appealing to scripture was reconciliatory or corroboratory. Either looks possible, though I suspect Descartes's use of scripture in this case is corroboratory, albeit indirectly so:<sup>19</sup> by presenting the passages from Deuteronomy and Leviticus as problematic for his rivals, arguably he construes them as offering tacit support to his own view that animals consist of nothing more than their corporeal body. Either way, Descartes was happy to stick with the association of animal souls with blood, repeating it in 1643 to Buitendijk ('I would prefer to say with Holy Scripture (Deuteronomy 12:23) that blood is their [animals'] soul').<sup>20</sup>

In the years that followed, the scripturally-rooted doctrine of the sanguine animal soul became an integral part of the beast-machine hypothesis defended by Descartes's followers. Most early moderns probably encountered the doctrine through Descartes's own writings as his correspondence – the only place in his corpus in which the sanguine animal soul is discussed – was gathered together and published in 1657. The doctrine was also promulgated by one of the earliest converts to Cartesianism and animal automatism, Henrici Regius, Professor of Medicine at Utrecht. His *Fundamenta physices* (1646) includes a lengthy chapter on animals, largely consisting of a detailed account of animal physiology and bodily processes; in a summary of his findings Regius asserts that it can be (and in the case of dogs has been) demonstrated that 'the actions of beasts ... can be explained by the spirits alone and the disposition of the remaining parts'.<sup>21</sup> The conclusion he draws from this, that there is no need to attribute thought to animals, 'agrees with what the Holy Books say in Leviticus 17:14, that the soul of beasts is their blood; and elsewhere they are averse to saying that we are similar to horses and oxen, which have no understanding'.<sup>22</sup> Taken by itself, this could be interpreted as claiming merely that automatism is consistent with the Bible, but there is evidence that Regius wanted to make a stronger claim.<sup>23</sup> At the very start of his lengthy chapter on animals, Regius highlights the importance of blood to the functioning of the body, and having made his case he then alludes to the passage from Leviticus that he will later quote, telling the reader that 'it is read in the Holy Books that the blood of beasts is their soul'.<sup>24</sup> Although brief, this remark reveals that Regius takes scripture to verify (i.e. corroborate) the doctrine of the sanguine animal soul, which is otherwise justified on physiological grounds.

In the years that followed, others would follow Regius's lead. Indeed, there developed among the more scientifically-minded Cartesians a noticeable tendency to let empirical (and to a lesser extent rational) arguments carry the burden of justifying animal automatism; in

some cases this led to the sanguine animal soul, and its scriptural support, being relegated to a role so marginal it seemed almost tokenistic. Nowhere is this clearer than in two works published in 1700 – the *Institutiones physicae ad usum scholarum accomodatae* by François Bayle, Professor of Medicine at Toulouse (and no relation to the more famous Pierre Bayle),<sup>25</sup> and the *Discours philosophique sur la création et l'arrangement du monde* by François Vallade, a medical doctor by profession. Both devote a chapter of their respective works to the soul of beasts, and in both cases the chapters are dominated by an account of how animal behaviour can be explained mechanistically, that is, through the parts and constitution of animal bodies. In both cases also, there are appeals to scripture at the very end of the chapter. With Vallade, it is his patient demonstration of the sufficiency of a mechanical explanation in the case of animals that prompts him to assert

it seems to me that it is quite absurd to attribute to animals another soul beyond the subtle matter of their blood; that is even in accordance with Scripture: you will not eat the blood of the beast, for its blood is its soul.<sup>26</sup>

Unhelpfully Vallade prevails on his readers' knowledge of scripture by leaving it to them to guess whether he has in mind either Leviticus 17:14 or Deuteronomy 12:23 (either is possible). Bayle, on the other hand, supplements his lengthy mechanistic account of animal behaviour by rehearsing (quite brusquely) a handful of stock philosophical arguments for the beast-machine before appealing to the authorities of Augustine and Aquinas; only after that does he turn to scripture, insisting that 'Holy Scripture very much supports this opinion'.<sup>27</sup> To illustrate this he quotes Leviticus 17:14, and claims that the same teaching can also be found in Deuteronomy. On the basis of these passages, Bayle claims, 'it is clear that everything which is discovered in beasts is flesh, or material, and that the principle of their functions is

in the blood'.<sup>28</sup> In both cases, the notion of the sanguine animal soul does not feel a natural part of the beast-machine hypothesis; its inclusion is sudden, does not follow naturally from the discussion leading up to it, and is not obviously necessary. To focus on Vallade, it is unclear why he endorses the sanguine animal soul at all. In the lengthy (80+ page) chapter of his book devoted to animal composition and behaviour, Vallade mentions blood quite frequently and notes time and again the importance of the blood to the functioning of animal bodies, but does not identify it as the animal's soul until the very end of the chapter, following his appeal to scripture. Prior to that, however, there is no indication that Vallade considers animals to have a soul, or that he considers such a soul to consist in their blood. Vallade's endorsement of the sanguine animal soul is all the more puzzling since he openly states that not all animals have blood.<sup>29</sup> Does this mean that those animals without blood have no souls? Vallade does not say, apparently unaware of the potential tension in his commitments. One is ultimately left with the feeling that Vallade's use of scripture is out of place, ill thought-through and, while it is not exactly insincere (elsewhere in his book he seeks to justify his doctrines via scripture) it is difficult to shake the thought that it is motivated by expediency, in part at least. Nevertheless, despite the awkwardness of the appeal, there is a clear desire in both Vallade and Bayle to treat the Bible as a corroboratory source of their automatism.

Not all scientifically-minded Cartesians were as ill at ease with invoking scriptural justification for the beast-machine hypothesis. A more important (and less theory-deforming) role was accorded to scripture by the physicist and mathematician Jacques Rohault, who devoted around a quarter of his *Entretiens sur la philosophie* (1671) to the issue of animal automatism (approximately 50 pages in total). In the first half of his treatment Rohault considers philosophical arguments for and against the hypothesis that 'beasts ... are nothing but pure machines'; once the probability of the hypothesis is established, Rohault looks to

sharpen it up. Does a pure machine have a soul? If so, what kind of soul does it have?

Utilizing the language of the Aristotelians, Rohault outlines three kinds of soul – rational, sensitive, and vegetative – and on the basis of what has been said of animals in his discussion thus far he thinks it ‘indubitable’ that they have the second kind, which he takes to be a corporeal principle of sensation and movement. After granting animals this soul Rohault says a little more about it; ‘the sensitive soul of beasts’, he asserts, ‘consists precisely in the shape and disposition of all their parts, and especially of the blood and spirits’.<sup>30</sup> Without pause he notes that this is corroborated by Deuteronomy 12:23; other passages in scripture say the same thing, he asserts,<sup>31</sup> though these are left unidentified. Having sketched out his beast-machine hypothesis, Rohault proceeds to unpack it and defend it. Along the way he stresses the virtue of having one’s theory corroborated by scripture: while he can appeal to the authority of the Bible, his opponents – whom he takes to be Scholastics – can only appeal to the authority of Aristotle. Near the end of his discussion Rohault summarizes his position: he holds of animals ‘that they do not think, that their soul is material and divisible, and as Holy Scripture says, that it consists in the blood’.<sup>32</sup>

Antoine Le Grand found a smaller but no less vital place for scripture in his *Dissertatio de carentia sensus & cognitionis in brutis* (1675). The work begins with a survey of various ancient and modern opinions about the animal soul. His search for a theory worthy of his support terminates when he reaches Descartes: after outlining Descartes’s animal automatism, and his notion of the sanguine animal soul, Le Grand states that ‘many passages of the Holy Text favour this Opinion’.<sup>33</sup> Unfortunately no details are provided; Le Grand does not even identify the books in which the relevant passages are to be found. On the basis of Le Grand’s Cartesian sympathies it would not be unreasonable to suppose that he had in mind the passages cited by Descartes. In any case, so impressed is Le Grand with the ancestry of the sanguine animal soul, and by extension Descartes’s animal automatism, that he

immediately endorses both. Any impression that Le Grand uses scripture to authenticate Descartes's automatism is quickly dispelled, however, for Le Grand immediately continues to offer a further justification of the beast-machine hypothesis via a lengthy and detailed demonstration that a mechanical explanation is sufficient for various animal bodily functions and behaviours. If he held that the beast-machine hypothesis was authenticated by scripture then this would be unnecessary, indeed quite pointless, so the fact that Le Grand offers a non-scriptural justification indicates that, despite initial appearances, he did not wish to rest the case for the beast-machine on scripture alone. Ultimately, then, scripture provides one reason to accept automatism, but not the only one. Or even, in Le Grand's eyes, the best one: one need only compare his empirical justification, so rich in physiological detail and developed carefully over the course of more than 100 pages, with his single-sentence appeal to scripture, the relevant passages of which he does not even cite, to ascertain which of the two he wishes to privilege.

Le Grand did at least explicitly acknowledge the scriptural roots of the sanguine animal soul; others made no mention of them, making it difficult to ascertain whether their source was scripture, Descartes, or a particular follower of either or both. There is no better example of this than Pierre Silvain Regis's huge work of Cartesian apologetics, the *Cours entier de philosophie* (1691). In the one short chapter devoted to animal automatism, after informing his readers that 'in explaining all the functions of beasts we make no mention of their soul',<sup>34</sup> Regis goes on to offer a thoroughly mechanistic account of animal action. As the topic draws to a close, however, Regis claims that his 'aim is not ... to remove a soul from them [animals], provided ... that by the *Soul of Beasts* one means only a soul which consists in the blood, or rather which is only the blood itself, and principally its subtler parts which compose the animal spirits'.<sup>35</sup> The reason for this association is not explained, but given the

overtly Cartesian theme of the book it is likely to owe a debt to Descartes (or, possibly, one or more of his followers).

The influence of Descartes's association of animal souls and blood can be detected even in the work of those animal automatists who did not explicitly mention scripture in their treatment of animal automatism, such as Nicolas Malebranche. In his passionate defences of animal automatism found in works such as *De la recherche de la vérité* (1674-5) and *Defense ... contre l'accusation de Mr. de la Ville* (1684), Malebranche utilized only philosophical and theological arguments,<sup>36</sup> and there is no trace of the sanguine animal soul. However, in one of his later works, the *Entretiens de la mort* (1696), Malebranche writes of animals: 'their soul ... consists only in the movement of spirits and the blood, and in the disposition of their organs'.<sup>37</sup> The claims made here are not found in any of his other writings which deal with animal automatism. Given the close relationship that had been forged by other thinkers between animal automatism on the one hand, and key passages from Deuteronomy and Leviticus on the other, it is difficult to know whether Malebranche's association of an animal's soul with its blood (or rather, the movement of its blood) was the act of a good Cartesian, or a good Christian, or both. The fact that a thinker as careful as Malebranche felt no need to justify or even explain this identification of soul and blood reveals just how commonplace it had become in philosophical works by the second half of the 1670s.<sup>38</sup>

Indeed, it is noteworthy that even some *opponents* of animal automatism acknowledged the identification, and hence allowed that scripture seemed to favour the Cartesian position on animals. In 1672, the Jesuit Father Ignace Gaston Pardies published *Discours de la connoissance des bestes*, the first book-length attempt to refute the beast-machine doctrine. The book's 237 pages contain but a single reference to scripture, which occurs when Pardies enquires into the nature of the animal's soul:

In order to determine what this soul is, some people make use of expressions from Holy Scripture; and St. Basil didn't think that a Christian would be hard put to know the nature of the soul of beasts, after Holy Scripture has so often determined that it is only their blood.<sup>39</sup> Yet some people, notwithstanding all these passages, do not think themselves to be in error to have different views.<sup>40</sup>

Pardies was himself one of those with 'different views', holding the scholastic line that the animal's soul was in fact a substantial form. Having informed his readership that scripture appears to support the Cartesian position, it is surprising that Pardies made no further mention of it, and made no attempt to reconcile his own position with the biblical texts (though he did attempt to square his position with what he called 'The authority of Aristotle').<sup>41</sup> In the context of 17<sup>th</sup> century scholarly debates, such an oversight could easily be seen as suspicious.<sup>42</sup>

As far as one can tell, none of the authors surveyed thus far gave any thought to the issue of scriptural interpretation when invoking the sanguine animal soul. All supposed, indeed *assumed*, that the passages from Leviticus and/or Deuteronomy that they cited could and should be taken literally, rather than in some non-literal way. This is perhaps explained (at least in part) by the fact that, of those authors considered thus far who quoted scripture, all were first and foremost scientists *avant la lettre* (Descartes, Regius, Rohault, Bayle, Vallade and Regis).<sup>43</sup> As one might expect, those automatists from theological and philosophical backgrounds were much less inclined to assume the adequacy of literal interpretations when quoting scripture, instead finding it necessary to offer some justification for their literalism. The two best examples of this are Antoine Dilly, who was (accordingly to Pierre Bayle) a priest at Ambrun,<sup>44</sup> and Jean Darmanson, Professor of Philosophy at Frankfurt.

Dilly's *De l'âme des bêtes* (1676) was one of the earliest book-length works to be published in support of the beast-machine doctrine. Over the course of its 350+ pages Dilly advances a number of philosophical and scientific arguments for automatism (some of his own devising), and in the very last chapter he cements his case by appealing to those authorities which support his view, including the Bible. Proclaiming that 'Scripture is clear on this subject',<sup>45</sup> he quotes Deuteronomy 12:23, Leviticus 17:14, and Leviticus 17:11. He then continues:

These passages are as formal as can be found on the matter and, according to St. Augustine's rule, since they can be explained literally with no complication, I do not see that one should depart from the literal sense in order to accommodate the Holy Literature to Aristotle, for one should, on the contrary, accommodate Aristotle to scripture.<sup>46</sup>

Dilly's willingness to appeal to Augustine to ground a literal interpretation of scripture was never likely to be shared by Protestant automatists, such as Darmanson, whose own contribution to the beast-machine debate – *La beste transformée en machine* (1684) – achieved some fame on account of Pierre Bayle's review of it in the very first issue of the *Nouvelles de la republique des lettres*. The book itself comprises two discourses; the first contains various pro-automatism arguments drawn from philosophy and theology, while the second is a physiology essay designed to show that animal behaviour can be fully explained mechanistically. Scripture is not mentioned until the conclusion of the first discourse, where Darmanson addresses his opponents with these words:

You will therefore admit with Scripture, gentlemen, that the beast has no other soul than the various agitations of its blood, *Anima eorum in sanguine*, and you will not now refuse a literal sense to this passage since we should only ever do that when it leads one in good faith to some consequence contrary to the orthodox faith. So why have recourse to allegorical meanings to explain this one, since taking it literally makes it agree perfectly well with everything that religion teaches us of the infinite majesty of God's perfection.<sup>47</sup>

Despite sharing the Protestant proclivity for literal interpretations, Darmanson was, it seems, much more relaxed about literalness of quotations. He offers no reference for the short passage quoted, *Anima eorum in sanguine* [their soul [consists] in blood], which is not in fact to be found anywhere in the Vulgate bible. However Darmanson uses the same Latin phrase on the frontispiece of his book, where he indicates that it can be found in Leviticus 17. Strictly speaking it cannot, at least in the form in which he gives it, but presumably it is intended to refer to either Leviticus 17:11 or 17:14. In any case, Darmanson seeks to secure no further advantage to automatism other than its consistency with scripture; there is no suggestion that automatism is in any way a more plausible or more probable doctrine on account of what is written in Leviticus. Darmanson thus bucks the dominant trend of using the Bible as a corroborative authority for automatism.

### **III. SCRIPTURAL TENSIONS AND THEIR RESOLUTIONS**

It is notable that the different principles used by Dilly and Darmanson to justify their literal interpretations of scripture are very much in keeping with (and indeed can be construed as

variations of) the one encapsulated in Ludovico delle Colombe's famous remark to Galileo, that 'all theologians, without exception, say that when scripture can be understood literally, it should never be interpreted otherwise'.<sup>48</sup> Both Dilly and Darmanson suppose that a general policy of interpreting scripture literally favours animal automatism, but tellingly, neither mentions, let alone discusses, any of the numerous scriptural passages in which animals are said to know things, or have other kinds of mental qualities such as shrewdness. If passages of this nature were to be taken literally – and according to the principles endorsed by Dilly and Darmanson there is a general presumption that they should be – then they clearly undercut the beast-machine hypothesis; accordingly, some opponents of animal automatism mined scripture for just such passages, declaring them to be evidence that animals were not automata. For example, in his *Entelechia* (1716), Gian Girolamo Sbaraglia sought to disprove that animals are pure machines via a single scriptural passage, Matthew 10.16, in which Jesus tells his disciples 'be as shrewd as snakes and as innocent as doves'. If animals were automata, such descriptions would not be fitting, avers Sbaraglia, but since the descriptions were made by Jesus we can be assured that they are: consequently snakes really are shrewd and doves innocent. Therefore animal automatism is false.<sup>49</sup> Others reasoned similarly. Noël Regnault (1732) asserted that 'a thousand passages in scripture give, it seems, some knowledge, some passions to animals',<sup>50</sup> the sheer number to choose from perhaps being his reason for not identifying any in particular. Gilbert-Charles le Gendre (1733), on the other hand, identified six passages, a literal reading of any of which affirms (he claimed) qualities in animals that Descartes's hypothesis denies:

It is said in the book of Job [39:28], that the horse comes to life at the cry of warriors, and in the prophet Isaiah [1:3] that the ox and the ass know the manger of their masters. The daughter of my father, says Jeremiah [Lamentations 4:3], has

become cruel, like ostriches in the desert. According to the expression of Genesis [3:1], the serpent was the cleverest of all the animals. Job speaks in this way of the ostrich: she shows herself [39:19] to be cruel to her young, as if they were not hers, and her labour is in vain, without her being afraid for them, for God deprived her of wisdom and did not give her intelligence. The gospel [Matthew 10:16] exhorts us to be wise like the serpents.<sup>51</sup>

The incorrect scriptural references (the first should be Job 39:24, and the fifth Job 39:16-17) do little to harm le Gendre's cause. More damaging is his inclusion of the first of the six passages, which reveals a fundamental misunderstanding of the beast-machine hypothesis, which did not deny animals *life*, but rather a mind, or rational soul.<sup>52</sup> The remaining five passages, however, are more to the point, and would seem to be problematic for the automatist if construed as literally as some automatists were wont to interpret other verses from scripture. Given the potential threat posed by such passages it is remarkable how few automatists even indicated any awareness of them, let alone addressed them so as to neutralize the threat. To the best of my knowledge only three did so – Henrici Regius, Florentino Schuyl, and John Norris.

We have already examined, in section I, Regius's endorsement of the doctrine of the sanguine animal soul. In his *Fundamenta physices* (1646), after establishing the scriptural credentials of that doctrine, he immediately acknowledges two scriptural passages which, *prima facie*, seem to undermine it, inasmuch as they ascribe knowledge to animals. These are Isaiah 1:3 ('The ox knows its master, the donkey its owner's manger') and Jeremiah 8:7 ('Even the stork in the sky knows her appointed seasons'). In both cases Regius insists that the intended sense is metaphorical: when placed in their appropriate context, it is clear that the two passages are intended to highlight the gross stupidity of the Israelites, who live

without awareness of God or God's will, rather than make any concrete claims about animal mentality.<sup>53</sup> Hence the passages are not in tension with automatism at all. In later years Schuyt and Norris would argue in a similar way, though each identified a different set of passages which, superficially at least, seem to pull against the beast-machine hypothesis. As we shall see, in addition to the defensive task of dismissing the apparent threat posed by these passages, both looked to build a positive scriptural case for automatism; in fact, both primarily looked to scripture to corroborate automatism.

Schuyt, a Protestant Professor of Philosophy at 's Hertogenbosch and later Leiden, is best known for his Latin translation of Descartes' *L'homme* (1662), to which he appended a lengthy preface of his own composition. Much of this preface was given over to a defence of Descartes's beast-machine hypothesis, with appeals to authority, in particular scripture, playing a key role. The discussion of scripture starts on a defensive note, with Schuyt listing (but not quoting) five passages which would seem to contradict the beast-machine hypothesis, namely Isaiah 1:3, Jeremiah 8:7, Job 28:7-8, Proverbs 6:6, and Matthew 10:16. Taken literally, all suggest that animals enjoy the kind of mental life that animal automatism denies, by attributing to them knowledge, wisdom, and shrewdness. But the automatist should not be troubled by such passages, advises Schuyt, 'for they are to be understood no less metaphorically than Psalm 148, where heaven and all the stars, the earth and all manner of living things are inspired to praise God'.<sup>54</sup> To secure the point that scripture should often be taken metaphorically, Schuyt lists numerous other scriptural passages for which a literal interpretation is unsuitable. Without pause, he then lists those scriptural passages which he takes to vindicate animal automatism; clearly he thinks it is safe to take *these* ones literally, but unfortunately he does not say why a literal interpretation should be preferred to the metaphorical in these cases. He cites Genesis 9:4 ('you must not eat meat that has its lifeblood still in it'), along with the passages which formed the cornerstone of the sanguine

animal soul doctrine, namely Leviticus 17:11, 17:14, and Deuteronomy 12:23.<sup>55</sup> According to Schuyl, in each of these passages scripture affirms that the soul of animals consists only in their blood, and other passages should be understood as saying precisely the same thing, e.g. Genesis 1:20, and Genesis 1:24, which concern the creation of the creatures of the sea and the land. To get a better understanding of the second of these, Schuyl turns to another authority, the Church Father St. Basil and his 4<sup>th</sup> century work *Hexaemeron*, which consists of 9 homilies on the cosmogony of the first chapter of Genesis (in homily VIII, Basil explicates Genesis 1:24 using Leviticus 17:11, thus establishing that the soul of beasts is ‘an earthy substance’.)<sup>56</sup> Having built his case on the authority of scripture and St. Basil, Schuyl goes on to provide a series of empirical arguments for automatism. His decision to offer scriptural grounds first may indicate a desire to privilege authority (or at least scriptural authority) over reason and experience, though while suggestive it is obviously not conclusive.

The more common approach of justifying automatism empirically and rationally before adducing its scriptural grounds, which is found in Regius, Bayle, Vallade, and Dilly (*inter alia*), is also adopted by the parson/philosopher John Norris in his *Essay towards the Theory of the Ideal or Intelligible World* (1704). Despite a degree of carelessness in his handling of scripture (in addition to some inexact quotations, some of his references are incomplete, while in other cases no reference is provided at all) Norris put a lot of stock in his scriptural justification of the beast machine hypothesis.<sup>57</sup> After grounding the hypothesis on a suite of philosophical arguments, Norris concedes that it seems to conflict with assertions made by some biblical authors such as ‘The ox knows its master, the donkey its owner’s manger’ (Isaiah 1:3, though no reference is given by Norris). To remove the worry he invokes the well-established principle of accommodation, which states that biblical authors sometimes accommodated their writing to the vulgar ways of speaking and so did not always make claims that are to be taken as literally true. Norris insists that ‘The ox knows its master’

is one such passage where the author has sought to express himself in a popular way rather than in philosophical rigour, and so no conclusion about the abilities of animals should be drawn from it. This contrasts sharply, he contends, with other passages, such as ‘Do not be like the horse or the mule, which have no understanding’ (Psalm 32:9), which go against common ways of speaking and as such can be taken literally. In these cases, Norris urges, it is perfectly legitimate for us to draw philosophical conclusions about the lack of animal thought.<sup>58</sup> Other such passages include Deuteronomy 12:23 and Leviticus 17:14 which, according to Norris, insinuate that the souls of animals are both material and mortal.<sup>59</sup> That he didn’t make more of these passages was perhaps due to the translation he was using; whereas other automatists had followed the Latin Vulgate, which states in both passages that an animal’s blood is its *soul* [anima], Norris used the King James Bible, which instead has it that an animal’s blood is its *life*.<sup>60</sup>

#### IV. FROM GENESIS TO THE BEAST-MACHINE

Perhaps surprisingly, the question of what scripture actually *says* was not one that was frequently asked in the course of the beast-machine debate. It did, however, arise in connection with one of a number of attempts that were made in the latter half of the 17<sup>th</sup> century to ground animal automatism in the book of Genesis. These were part of wider efforts by Cartesians to respond to the theological tenor of opponents’ objections. It was thought that by showing the harmony between Descartes’s philosophy and Moses’s cosmogony as detailed in the first chapter of Genesis, Cartesianism would acquire the theological respectability it was perceived by its opponents to lack.<sup>61</sup> The first and most sophisticated of these harmonization attempts was a lengthy (60+ page) letter penned by Géraud de

Cordemoy on 5 November 1667 and published in 1668.<sup>62</sup> According to Cordemoy, ‘The majority of his [Descartes’s] sentiments are so much in keeping with those which Moses said that it seems he only became a philosopher by reading this prophet’.<sup>63</sup> To prove this (rather fanciful) claim, Cordemoy considers the six days of creation one by one, showing in each case that Moses’s account and Descartes’s key doctrines are but two sides of the same coin, any differences being due to the fact that Moses was more concerned with presenting historical truth, Descartes with laying out philosophical principles.<sup>64</sup> Cordemoy’s chief focus in his letter is the last two days of the creation account, which concern the creation of animals (days 5 and 6) and humans (day 6). His discussion of these two days is dominated by the issue of animal automatism. Cordemoy claims that a ‘proof’ of Descartes’s animal automatism can be found in the first two chapters of the book of Genesis,<sup>65</sup> which reveal that while animals were fashioned by God from mud alone (Genesis 1:24), humans were composed of something more, namely the breath of God (Genesis 2:7). While inclined to take this as a clear nod towards animal automatism, Cordemoy concedes that the interpretation is not straightforward inasmuch as in the Vulgate version of Genesis animals are described as having a living soul (*animae viventis*, 1:20; *animam viventum*, 1:21 and 1:24).<sup>66</sup> On the face of it, then, one part of scripture suggests that animals do not have souls, and another part suggests that they do. With scripture appearing to be in tension with itself, Cordemoy proposes putting aside the Vulgate translation, the source of the apparent contradictions, and looking instead at what is said in the original Hebrew.<sup>67</sup> Lacking the requisite knowledge of Hebrew himself, Cordemoy specially commissioned a translation of the first two chapters of Genesis from the renowned Hebraist Ludovicus de Compiegne, although he does not identify the language into which Compiegne translated the original Hebrew. Having shown that the Vulgate Latin version of Genesis appears to contain evidence for *and* against the existence of animal souls, Cordemoy now proceeds to argue that the Hebrew version comes down

unambiguously in favour of animal automatism. Under the guidance of his Hebraist friend, he notes that the Hebrew term נפש (nefesh/nepesh), translated in the Vulgate as *anima vivens* [‘living soul’] in fact means ‘individual’; so whereas the Vulgate version of Genesis speaks of the Earth bringing forth living souls, the Hebrew version instead speaks of it bringing forth living individuals. This leads Cordemoy to say that, in applying the term נפש to animals, Moses very likely meant no more than that an animal body is an organic whole, that is, a unified thing that cannot be divided without being destroyed. Humans, on the other hand, were endowed by God with נשמה (neshama), which Cordemoy glosses as either ‘spirit’ or ‘thought’.<sup>68</sup> He immediately goes on to give his interpretation of Genesis a Cartesian spin, claiming that Moses there clearly insinuates that animals live and move on account of their blood and the adjustment of their organs; Cordemoy seems not to take this to be a fresh point, but rather a straightforward corollary of the points he has already made, even though there is no mention of blood in the first chapter of Genesis at all. Cordemoy was not, as we shall see, the only Cartesian who subordinated his interpretation of scripture to fit his philosophical commitments.

Cordemoy’s scriptural ‘proof’ for animal automatism incorporates the further observation that in the original Hebrew text there is nothing at all to suggest that animals (or plants for that matter) are endowed with souls, ‘only ... that they have life and motion’.<sup>69</sup> Consequently, ‘Why attribute to them [animals] anything else except this individual body, which can explain their life and their movement?’<sup>70</sup> Cordemoy does not develop the claim that the animal’s body alone can explain its life and movement, though he does repeat it further on, and insists that he ‘could explain to you the most wonderful functions of brutes by the construction of their organs alone, just as all the operations of a watch are explained to you by the arrangement of its parts’,<sup>71</sup> but he is prevented from doing so by space limitations. Hence while the general tone of Cordemoy’s use of scripture is authenticatory, it is clear that

ultimately he does not see scripture as providing the sole evidence for animal automatism; like others, he also accepts the argument from the sufficiency of mechanical explanation, though does not develop it. In identifying Cordemoy's use of scripture as justificatory, we might also note that his initial promise of a Mosaic proof of animal automatism eventually yields to the less ambitious claim that there is no need to posit an animal soul.

Cordemoy's letter was by no means the last attempt by a Cartesian to justify animal automatism through the book of Genesis. Johan Amerpoel's *Cartesius Mosaizans* (1669) shares Cordemoy's ambition of demonstrating the concord between Descartes and the entire first chapter of Genesis. This is facilitated by the methodical structure of the work: Amerpoel first quotes a short passage from Genesis 1 (either a single verse or a small set), then subjects it to a lengthy exposition, before turning to examine Descartes's views on the same topic(s); by continually shuttling between Genesis and Descartes in this way, Amerpoel is able to show the harmony between the two. Like Cordemoy, Amerpoel was prepared to modify his theology to reconcile it with Cartesianism, and nowhere is this clearer than on the topic of animal souls. In his exposition of Genesis 1:20-25, which concerns the creation of the creatures of water, air, and land, Amerpoel writes: 'Reptile animals are those which have in themselves a soul or living spirit, that is, a sentient and self-moving soul, not just a vegetative one, like plants'.<sup>72</sup> On the face of it, Amerpoel here looks to have attributed to Moses a most un-Cartesian account of animal souls.<sup>73</sup> One might reasonably expect an attempt would be made to show the congruity between the Mosaic and Cartesian accounts of animal souls, but this is not forthcoming. Instead, when the discussion turns to Descartes's views on the topics raised by Genesis 1:20-25, Amerpoel quotes pages and pages of extracts from a number of Descartes's own writings, including various passages about animal automatism. Amerpoel then asserts that it is now clear – apparently on the basis of Descartes's words alone – that animals act not through a soul with the capacity for knowledge, but rather through 'a

corporeal principle'.<sup>74</sup> The sentient and self-moving soul that (Amerpoel's) Moses grants to animals is thus revealed to be corporeal in nature thanks to the insights of Descartes! In order to leave no room for doubt about the direction in which the light of illumination is travelling, Amerpoel then brazenly uses Descartes's views on animal automatism to elucidate scripture, asserting that 'From what has been said [sc. by Descartes] it is now easily concluded what is meant by "animals" or "living souls"'.<sup>75</sup> What Amerpoel has in mind here are two Latin terms used in the Vulgate version of Genesis, namely *animalia* [animals] and *animas viventes* [living souls]; in according these terms clear Cartesian overtones he treats Descartes as an authority for the elucidation of scripture, and in so doing rather loses sight of his stated aim of finding in scripture corroboration for Descartes's own doctrines. Amerpoel's advice to those readers not yet convinced that Moses shared Descartes' views on animal automatism is to consult St. Basil's elucidation of Genesis 1:24 in homily VIII of his *Hexaemeron*. To those in need of further convincing of the truth of animal automatism, Amerpoel recommends two further Cartesian works: Johann Clauberg's *Physica* (1664) and Schuyt's preface to the Latin translation of Descartes's *L'homme*.<sup>76</sup> Throughout his book, Amerpoel betrays no hint of acquaintance with Cordemoy's letter, and he certainly makes no attempt at the sort of lexical analysis found there. One can find in his book the occasional mention of the Hebrew version of Genesis, but only in passing. He never cites it, preferring to use the Vulgate instead.

Not all attempts to wrest animal automatism out of Genesis were made in books designed to reconcile Moses with Descartes. Another attempt was made by an anonymous author in a very different kind of work, a lengthy philosophical treatise on the human soul entitled *Essais nouveaux de morale de l'ame de l'homme* (1686):

[Moses says that] he who, at the beginning, created the Heaven and the Earth,  
formed from the common matter of the universe the animals which walk on the land,

which fly in the air, and which swim in the waters, by means of the construction of their members and of their corporeal organs alone ... [B]ut when it came to man ... the common matter which was sufficient to make the animals was not sufficient to make man: man could not be made, as beasts were, by means of the construction and organization of his body alone.<sup>77</sup>

The anonymous author continues, as one would expect, to argue that God thus endowed humans with a soul, the nature of which then becomes the subject of the rest of the *Essais nouveaux*. For the claim that animal automatism is grounded in Moses's writings no scriptural passages are offered, but it is not unreasonable to suppose that the author had in mind Genesis 1:20-27, which details days 5 and 6 of the six days of creation. A further allusion to scripture follows later in the book, when the author insists that in endorsing animal automatism he is not seeking to overturn the common ways of speaking, as 'the new philosophers' are wont to do, by denying that animals genuinely have knowledge. Yet

even if we conceive beasts as entirely corporeal, as Moses wants us to conceive them, [and] even if we conceive them as having material souls, as scripture leads us to conceive them, telling us so persistently that their soul is their blood, and that everything which is in them was formed from the common matter of the universe, let us be very careful in applying to their entirely corporeal movements the idea of this knowledge that we experience in ourselves, [since] we do not conceive that they know in any way like we do.<sup>78</sup>

Although not clear from this passage, the author's point is that even if we disallow animal souls, we can (and indeed should) say that animals have knowledge, but we have to concede

that they have it in a way very unlike us. No passages are quoted or cited in connection with the claim that scripture identifies an animal's soul with its blood, but the author probably had in mind those from Deuteronomy or Leviticus encountered already. Although the context of this claim is hypothetical ('even if we conceive them as having material souls, as scripture leads us to conceive them ...'), there is little reason to doubt that the author does endorse the identification of animal souls with their blood, especially since another thesis that is here treated hypothetically, that of grounding animal automatism in Moses, is one he has already indicated he accepts. In any case, what is significant about the anonymous author's whole approach is that his endorsement of animal automatism is grounded entirely in scripture; he provides no further arguments or justifications for the doctrine, philosophical or otherwise. As such, his use of scripture in the matter of animal automatism is authenticatory, the only such use of it in the debate that I have been able to find.

## V. CONCLUSION

Our survey has shown that in the course of the beast-machine debate the reconciliatory use of scripture was almost as rare as the authenticatory, and that by far the majority of the appeals to scripture were corroboratory in nature. This should not be taken to mean that these appeals were unvaried, for as we have seen the opposite is true. Among automatists there was variation in the passages cited, in the sophistication with which the appeals were made, and in the relative importance attached to them vis-a-vis other forms of justification. Where I suspect there was little variation in the appeals was in the sincerity with which they were made.

In the end, the many appeals to scripture proved no more capable of settling the beast-machine controversy than did any of the myriad of empirical and rational arguments that had been devised with the express purpose of doing so. When Maupertuis insisted on the eve of the enlightenment that the status of animals could and should be examined and decided independently of theology – and by extension scripture – he was merely reflecting what had by then become almost universally accepted.<sup>79</sup> Needless to say, this was not localized to the beast-machine debate. Over the course of the early modern period philosophers continued to lose the enthusiasm for appealing to scripture in all non-theological matters.

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## **Notes**

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<sup>2</sup> See, for example, M. Proudfoot and A. R. Lacey, *The Routledge Dictionary of Philosophy* (London: Routledge, 2010, 4ed), p. 25; D. J. Soccio, *Archetypes of Wisdom: An Introduction to Philosophy* (Belmont: Wadsworth, 2010, 7ed), p. 247 and p. 272.

<sup>3</sup> See G. Berkeley, *Philosophical Writings*, ed. D. M. Clarke (Cambridge: Cambridge University Press, 2008), pp. 146, 196, 217, and 230.

<sup>4</sup> A. Nye, *Feminism and Modern Philosophy* (London: Routledge, 2004), p. 69.

<sup>5</sup> R. Descartes, *The Philosophical Writings of Descartes*, 3 vols. (Cambridge: Cambridge University Press, 1991), I: pp. 111-51, especially pp. 139-41. [Hereafter: CSM]

<sup>6</sup> It is worth noting that Descartes preferred the term ‘mind’ over ‘soul’; see CSM II, p. 114. I have elected to disregard Descartes’s preference on the grounds that in the beast-machine debate that is the topic of this paper, ‘soul’ was the preferred term of most of those involved.

<sup>7</sup> Abbé M[acy], *Traité de l’ame des betes, avec des réflexions phisiques et morales* (Paris, 1737), p. 32.

<sup>8</sup> G. Daniel, *Suite du Voyage du Monde de Descartes, ou Nouvelles difficultez proposées à l’auteur du Voyage du Monde de Descartes* (Amsterdam, 1713), p. 4. He continues: ‘with it [animal automatism], it is impossible not to be a Cartesian, and without it, it is impossible to be one’.

<sup>9</sup> Opponents of the beast-machine were not similarly united behind a single philosophy. Instead they came from a variety of traditions such as Scholasticism, Platonism, freethinking, and even – in some cases – Cartesianism.

<sup>10</sup> See R[ichard] S[ault]’s answer in *The Athenian Oracle. Being an Entire Collection of All the Valuable Questions and Answers in the Old Athenian Mercuries*, ed. by a member of the Athenian Society (London, 1728, 3ed), p. 505. His answer was originally published in the *Athenian Gazette*, 11 February 1693.

<sup>11</sup> J.-A. Guer, *Histoire Critique de l’ame des bêtes, contenant Les Sentimens des Philosophes Anciens, & ceux des Modernes sur cette matière*, 2 vols. (Amsterdam, 1749).

<sup>12</sup> See for example L. C. Rosenfield, *From Beast-Machine to Man-Machine, Animal Soul in French Letters from Descartes to La Mettrie* (New York: Octagon Books, 1968); D. Radner and M. Radner, *Animal Consciousness* (New York: Prometheus Books, 1996), pp. 7-113; T. Gontier, *De l’homme à l’animal* (Paris: Vrin, 1998); A. Thomson, ‘Animals, humans, machines and thinking matter’, *Early Science and Medicine*, 15:1/2 (2010), pp. 3-37.

<sup>13</sup> The fact that he did so is often overlooked by those who write about Descartes’s view of animals, such as K. Morris, ‘*Bêtes-machines*’, in S. Gaukroger, J. Schuster, and J. Sutton (eds.), *Descartes’ Natural Philosophy* (London:

Routledge, 2000), pp. 401-19; M. D. Wilson, 'Animal ideas', *Proceedings and Addresses of the American Philosophical Association*, 69:2 (1995), pp. 7-25.

<sup>14</sup> CSM III, p. 62. Where possible I cite an English translation; where none is available, the translation is my own.

<sup>15</sup> CSM III, p. 182.

<sup>16</sup> Gontier, *De l'homme à l'animal*, p. 212.

<sup>17</sup> Descartes was made aware that one of his followers, Henrici Regius, had been publically criticized by Voetius for endorsing animal automatism, a doctrine which, in Voetius's opinion, conflicted with scripture. However this did not occur until 1641, four years *after* Descartes wrote his letter to Fromondus. See C. Adam and P. Tannery (eds), *Œuvres de Descartes*, 12 vols (Paris: Léopold Cerf, 1897-1910), III: p. 513 [hereafter: AT].

<sup>18</sup> AT I, p. 403.

<sup>19</sup> Gontier is correct that Descartes was generally wary of appealing to scripture in matters of philosophy and science. In a letter from 1638 Descartes writes: 'although we are obliged to take care that our arguments do not convince us of anything which is contrary to what God has wanted us to believe, I nevertheless think that to want to derive knowledge of truths which pertain only to the human sciences, and which do not assist in our salvation, is to apply Holy Scripture to an end which God did not give it, and consequently to abuse it'. AT II, pp. 347-8. This strikes me as a clear rejection of the authenticatory use of scripture, but not the corroboratory.

<sup>20</sup> CSM III, p. 230. What drew this remark from Descartes's pen was Buitendijk's mistaken belief that he (Descartes) took the *motion* of blood to be the soul of animals rather than the blood itself.

<sup>21</sup> H. Regius, *Fundamenta physices* (Amsterdam, 1646), pp. 241-2.

<sup>22</sup> Regius, *Fundamenta physices*, p. 242. Regius may well be thinking here of Psalm 32:9, which states 'Do not be like the horse or the mule, which have no understanding'.

<sup>23</sup> Elsewhere Regius does use scripture defensively; see Regius, *Fundamenta physices*, p. 68.

<sup>24</sup> Regius, *Fundamenta physices*, p. 154.

<sup>25</sup> See also an earlier work of Bayle's, the *Systema generale philosophiæ* (1669). Although the original Latin edition is now lost, the work survives through an English translation made contemporaneously: *A discourse written to a Learned Frier by M. des Fourneillis; shewing, that the systeme of M. Des Cartes, and particularly his opinion concerning brutes, does contain nothing dangerous; and that all he hath written of both, seems to have been taken out of the First Chapter of Genesis. To which is annexed the Systeme General of the Same Cartesian Philosophy. By Francis Bayle* (London, 1670).

<sup>26</sup> J.-F. Vallade, *Discours philosophique sur la création et l'arrangement du monde* (Amsterdam, 1700), p. 186.

<sup>27</sup> Vallade, *Discours philosophique*, p. 186.

<sup>28</sup> F. Bayle, *Institutiones physicae ad usum scholarum accomodatae*, 3 vols. (Toulouse, 1700), II: p. 653.

<sup>29</sup> Vallade, *Discours philosophique*, p. 114.

<sup>30</sup> J. Rohault, *Entretiens sur la philosophie* (Paris, 1671), pp. 170-1.

<sup>31</sup> Rohault, *Entretiens sur la philosophie*, p. 172.

<sup>32</sup> Rohault, *Entretiens sur la philosophie*, p. 191.

<sup>33</sup> A. Le Grand, *Dissertatio de carentia sensus & cognitionis in brutis* (London, 1675), p. 18.

<sup>34</sup> P. S. Regis, *Cours entier de philosophie, ou systeme general selon les principes de M. Descartes. Tome second* (Amsterdam, 1691), p. 506.

<sup>35</sup> Regis, *Cours entier de philosophie*, p. 631.

<sup>36</sup> For details of these, and the other theologically-inspired arguments used in the beast-machine debate, see L. Strickland, 'God's creatures? Divine nature and the status of animals in the early modern beast-machine controversy', *International Journal of Philosophy and Theology*, 74:4 (2013), pp. 291-309.

<sup>37</sup> N. Malebranche, *Entretiens sur la mort* (1696) in *Entretiens sur la metaphysique, sur la religion, et sur la mort* (Paris, 1711, new ed.), p. 304.

<sup>38</sup> For a similar approach, see J. B. Bossuet, *Introduction à la philosophie, ou, De la connoissance de Dieu et de soi-mesme* (Paris, 1722), p. 371. Note that this book was written in 1677, but only published long after Bossuet's death in 1704.

<sup>39</sup> Pardies is here referring to homily VIII of Basil's *Hexaemeron*, which cites Leviticus 17:11. See section III, p. 000, for further details.

<sup>40</sup> I. G. Pardies, *Discours de la connoissance des bestes* (Paris, 1672), p. 186.

<sup>41</sup> Pardies, *Discours de la connoissance des bestes*, p. 182.

<sup>42</sup> And indeed, Pardies was for many years suspected of being a Cartesian, largely because of the strength of his exposition of animal automatism, and the weakness of his objections to it. See, for example, the anonymous review of Macy's *Traite de l'ame des bêtes* in *Mémoires de Trévoux*, 37 (1737), pp. 1,827-56, on p. 1,845.

<sup>43</sup> The thinkers we have looked at who were theologians by profession (namely Le Grand, Malebranche and Bossuet) all alluded to scripture rather than quoted it.

<sup>44</sup> P. Bayle, 'Review of *La Bête transformée en Machine, divisée en deux Dissertations, prononcées à Amsterdam, par J. Darmanson*', *Nouvelles de la République des lettres*, 1 (March 1684), pp. 18-33, on p. 25.

<sup>45</sup> A. Dilly, *De l'âme des bêtes, où après avoir démontré la spiritualité de l'âme de l'homme, l'on explique par la seule mécanique les actions les plus surprenantes des animaux* (Lyon, 1676), p. 358.

<sup>46</sup> Dilly, *De l'âme des bêtes*, p. 359 [the number 356 is given at the top of the page, but this is a printing error]. Dilly may well be thinking of book III chapter 10 of Augustine's *De doctrina Christiana*. See *On Christian Teaching*, trans.

R. P. H. Green (Oxford: Oxford University Press, 1997), p. 75.

<sup>47</sup> J. Darmanson, *La Beste transformée en machine* (Amsterdam, 1684), pp. 39-40.

<sup>48</sup> L. delle Colombe, 'Contro il moto della terra' (1611), in *Le opere di Galileo Galilei Volume III, Edizione Nazionale* (Florence: G. Barbera, 1892), p. 290.

<sup>49</sup> G. G. Sbaraglia, *Entelechia* (Bologna, 1716), p. 128.

<sup>50</sup> N. Regnault, *Les entretiens physiques d'Ariste et d'Eudoxe, ou physique nouvelle en dialogues*, 4 vols. (Paris, 1732, new ed.), IV: p. 49.

<sup>51</sup> G.-C. le Gendre, *Traité de l'opinion, ou memoires pour servir a l'histoire de l'esprit humain. Tome second. Premiere partie* (Paris, 1733), pp. 276-7.

<sup>52</sup> See for example CSM III, p. 366.

<sup>53</sup> Regius, *Fundamenta physices*, p. 243.

<sup>54</sup> F. Schuyt, 'Ad lectorem', in *Renatus des Cartes de homine figuris* (Leiden, 1662), unnumbered page.

<sup>55</sup> Curiously, the French translation of Schuyt's preface, which was appended to the French edition of Descartes's *L'homme*, omits all of his scriptural references bar Leviticus 17:14 and Deuteronomy 12:23. See 'Version de la preface que Monsieur Schuyt a mise au devant de la Version Latine qu'il a faite du Traitté de l'Homme de René Descartes', in *L'homme de Rene Descartes* (Paris, 1664), p. 431.

<sup>56</sup> Basil, *Hexaemeron*, in P. Schaff and Rev. H. Wallace (eds), *Nicene and Post-Nicene Fathers, Second Series, Volume VIII* (New York: Cosimo, 2007), p. 95.

<sup>57</sup> In the preface to his book he noted with disdain that some philosophers treat Aristotle as an authority; his response to that – 'Tis enough to pay that Deference to Scripture' – is one that he practised as well as preached. J. Norris, *An Essay towards The Theory of The Ideal or Intelligible World. Part II* (London, 1704), preface (unnumbered page).

<sup>58</sup> Norris, *An Essay*, p. 77.

<sup>59</sup> Norris, *An Essay*, p. 77. Norris continues to identify two further passages in which 'Scripture seems to intimate the Souls of Beasts to be Material, so also ... to be Mortal', namely Ecclesiastes 3:21 and Psalm 49:2. See Norris, *An Essay*, p. 78.

<sup>60</sup> This follows more closely the original Hebrew term, nefesh/nephesh. For more information see section III.

<sup>61</sup> In addition to those discussed here, see also C. Wittich, *Consensus veritatis in Scriptura divina et infallibili revelatae cum veritate philosophica a Renato Cartesio detecta* (Nimeguen, 1659).

<sup>62</sup> Cordemoy's letter thus pursues a project that Descartes himself mooted several times, to reconcile his philosophy with the first chapter of Genesis; see AT IV, p. 698; CSM III, p. 172; CSM III, p. 349.

<sup>63</sup> G. de Cordemoy, *Copie d'une lettre écrite à un sçavant religieux de la Compagnie de Jésus, pour montrer : I, que le système de M. Descartes et son opinion touchant les bestes n'ont rien de dangereux ; II, et que tout ce qu'il en a écrit*

*semble estre tiré du premier chapitre de la Genèse* (Paris, 1668), p. 4.

<sup>64</sup> Cordemoy concedes at the outset that Moses's aim in writing Genesis was not to divulge 'the secrets of nature', but that nevertheless 'being inspired by God, as he was, it was not possible for him to say anything about the formation of this universe which is not true'. Cordemoy, *Copie d'une lettre*, p. 3.

<sup>65</sup> Cordemoy, *Copie d'une lettre*, p. 43.

<sup>66</sup> Cordemoy, *Copie d'une lettre*, pp. 41-2. In each case, animals appear to be described as *being* living souls rather than as *having* them, which is how Cordemoy reads it.

<sup>67</sup> This reflects the increasing interest among 17<sup>th</sup> century Christians for reading the books of scripture in the languages in which they were originally written, fuelled in part by concerns about the accuracy of translations

<sup>68</sup> Cordemoy, *Copie d'une lettre*, pp. 45ff. A not dissimilar point is made by Jacques Rohault, writing four years after Cordemoy: 'a fine observation was made recently by someone well-versed in Hebrew: he made me aware that Holy Scripture, when speaking of the soul of beasts in the Hebrew text, uses a particular word, different from the one it uses to signify the soul of man'. Rohault, *Entretiens sur la philosophie*, pp. 172-3. Unfortunately Rohault mentions this in passing and does not develop the point, nor even identify the words in question.

<sup>69</sup> Cordemoy, *Copie d'une lettre*, p. 45. Interestingly, on the other side of the debate, Richard Sault found in the same (Hebrew) passages of Genesis evidence *against* animal automatism, noting that Moses speaks of all creatures being given *a breath of life*, which Sault takes to mean an immaterial soul. Sault, *The Athenian Oracle*, p. 506.

<sup>70</sup> Cordemoy, *Copie d'une lettre*, p. 47.

<sup>71</sup> Cordemoy, *Copie d'une lettre*, p. 52.

<sup>72</sup> J. Amerpoel, *Cartesius Mosaizans* (Leuven, 1669), p. 189. Why Amerpoel singles out reptiles here is unclear.

<sup>73</sup> Similarly, in the course of asserting human superiority later in his book, Amerpoel blithely grants animals a sensitive soul, writing 'It [sc. the human soul] is not just vegetative, or sensitive, which even brutes have, but also rational, by means of which man surpasses all the brutes'. Amerpoel, *Cartesius Mosaizans*, p. 241. By that stage in the book, however, it has become clearer that Amerpoel takes a sensitive soul to be something corporeal.

<sup>74</sup> Amerpoel, *Cartesius Mosaizans*, p. 228.

<sup>75</sup> Amerpoel, *Cartesius Mosaizans*, p. 229.

<sup>76</sup> Amerpoel, *Cartesius Mosaizans*, p. 231.

<sup>77</sup> [Anon.], *Essais nouveaux de morale de l'ame de l'homme. Premier essai* (Paris, 1686), pp. 7-8.

<sup>78</sup> Anon, *Essais nouveaux*, p. 19.

<sup>79</sup> See P. L. Maupertuis, 'Lettre V. Sur l'ame des bêtes', in *Œuvres de Mr. De Maupertuis. Tome Second* (Lyon, 1756, new ed.), pp. 210-20.