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On: 10 March 2014, At: 01:45

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



International Journal of Philosophy and Theology

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rjpt20>

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Published online: 04 Dec 2013.

To cite this article: Lloyd Strickland (2013) 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, 291-309, DOI: [10.1080/21692327.2013.858230](https://doi.org/10.1080/21692327.2013.858230)

To link to this article: <http://dx.doi.org/10.1080/21692327.2013.858230>

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God's creatures? Divine nature and the status of animals in the early modern beast-machine controversy

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(Received 21 August 2013; final version received 17 October 2013)

In early modern times it was not uncommon for thinkers to tease out from the nature of God various doctrines of substantial physical and metaphysical import. This approach was particularly fruitful in the so-called beast-machine controversy, which erupted following Descartes' claim that animals are automata, that is, pure machines, without a spiritual, incorporeal soul. Over the course of this controversy, thinkers on both sides attempted to draw out important truths about the status of animals simply from the notion or attributes of God. Automatists – led by Nicolas Malebranche and Antoine Dilly – developed six such arguments, appealing to divine justice, providence, economy, glory (twice) and wisdom, while opponents to animal automatism developed two arguments, appealing to divine wisdom and goodness. In this article I shall examine the substance of all eight of these arguments, along with their origins, patronage, and variations, and the objections they elicited from opponents, with the aim of determining their suitability for use in contemporary debates about animal sentience and consciousness, and hence their relevance for contemporary philosophers.

Keywords: God; animals; beast-machine; soul; mechanism; Descartes; Malebranche; automata

I. Introduction

Could important insights about animal sentience and consciousness be gleaned from the Judaeo-Christian notion of God? The very thought is likely to strike modern readers as peculiar, so accustomed are we to thinking that only certain kinds of evidence (typically empirical and conceptual) is admissible in debates about whether animals are conscious or are capable of thought. Consequently, even those philosophers with deeply-held theological beliefs – and there are many – are unlikely to try to determine fundamental facts about the nature of animals through an examination of the notion of God. Yet in the early modern period, when similar questions about animal sentience and cognition were raised as part of the so-called beast-machine controversy, this is precisely what a number of philosophers sought to do; that is, they sought to establish facts about the nature of animals through arguments based on the notion of the Judaeo-Christian God. An account of these arguments would be interesting and worthwhile in its own right, not least because most of them have somehow escaped the notice of even the best chroniclers of the beast-machine controversy.¹ But such an account may serve an additional purpose, by presenting these arguments as potentially relevant contributions to the cognate debates of today. In many cases, of course, philosophical arguments do not age well: arguments seen as

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relevant and compelling in one period of history are often seen as neither when considered from the standpoint of another age, which may use different philosophical frameworks and different terminology, and may even have different concerns altogether. But while this may serve as a general rule, arguments drawn from the nature of the Judaeo-Christian God may be a clear exception to it, because among Western philosophers the nature of the Judaeo-Christian God has remained broadly stable. That is, the typical early modern characterisation of the Judaeo-Christian God, as an omnipotent, omniscient, perfectly good, eternal, omnipresent spirit, accords with that often professed today. It is therefore reasonable to suppose that early modern arguments based on the notion of God may have retained their force, and relevance, for contemporary philosophers who belong to the Judaeo-Christian tradition. This raises the question: can these arguments serve as a useful resource for such philosophers today? Further, if the arguments are good, are those who endorse the Judaeo-Christian notion of God thereby committed to a particular answer in the debates about animal minds? To answer these questions we need to examine the arguments in greater detail. This shall be the chief purpose of this article.

II. The beast-machine controversy

In order to put these arguments into context, a few words about the early modern beast-machine controversy are in order. At the heart of the controversy was the question of whether animals had souls, as had traditionally been believed by philosophers and laymen alike in medieval and renaissance times, or whether they were mere automata, as Descartes proposed in his *Discourse on Method* (1637).² In that work Descartes 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.³ 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.⁴ Nor was this a lack of an unimportant metaphysical extra, 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' 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 attempting to show that animals did not think, or reason, or even experience sensations (all of which required a soul). Opponents, likewise, often sought to overturn animal automatism by showing that animals can and do engage in such mental activities.

Unsurprisingly, perhaps, those on both sides of the beast-machine debate routinely appealed to empirical justifications in support of their respective positions. By 'empirical' I mean not just observation and experiment, of which there was surprisingly little performed by those on either side of the debate, but also those arguments and claims based on common sense, or which appealed to intuitions. Many of the skirmishes here concerned animal behaviour, and in particular so-called animal sagacity and cunning, that is, the apparently intelligent behaviour displayed by certain animals.⁵ Automatists urged that such behaviour could be explained mechanistically,⁶ while opponents insisted that it could not. By way of support, automatists drew detailed analogies between the actions of

animals and those of human-made automata, such as the water-driven mechanisms of Saint-Germain-en-Laye,⁷ while their opponents drew detailed analogies between the actions of animals and those of humans.⁸ Other skirmishes centred on physiology. Opponents of automatism pointed to the anatomical similarities between humans and animals, claiming that similar organs suggested similar ‘internal principles’ as well, i.e. souls,⁹ while automatists stressed the dissimilarities between human and animal organs, especially the brain.¹⁰

Aside from these empirical justifications, those involved in the beast-machine debate also developed a variety of a priori arguments to defend their respective positions. The majority of these arguments were theological in nature, and can be divided into arguments from: (a) Christian doctrine; and (b) the nature of God. In truth there was really only the one argument from Christian doctrine, and that concerned *immortality*. To grant animals a soul (went the argument) is to grant them immortality also, for all souls, being incorporeal, are indestructible, having no parts into which they can be broken up. But to grant animals immortality was theologically disastrous, destroying as it did the uniqueness of man.¹¹ Such an unwelcome consequence could be avoided (so the thinking went) only by endorsing animal automatism.¹² This argument was put forward by Descartes in 1646 and subsequently rehearsed by many of his followers.¹³ In addition to this argument from Christian doctrine, there were also numerous arguments from the nature of God: six in favour of animal automatism, and two against.¹⁴ So potent were these arguments taken to be that most of those who engaged in the beast-machine controversy sponsored at least one of them. In what follows we shall examine the substance of these arguments, along with their origins, patronage, and variations, and the objections they elicited from opponents. We start with the six arguments advanced in favour of the beast-machine, and shall consider them in chronological order of development.

III. The argument from divine justice

The first and by far the most popular argument for animal automatism drawn from God’s nature was the argument introduced by Nicolas Poisson in 1670 in the following syllogism:

Without violating the laws of His justice, God cannot produce a creature subject to pain and capable of suffering which had not deserved it
 Now, animals having a soul, are subject to pain and are capable of suffering without having deserved it
 Therefore, without violating the laws of His justice, God was not able to create an animal with a soul.¹⁵

I shall term this the argument from divine justice. The major premise of this argument, Poisson claims, is drawn from Augustine’s principle that ‘neque enim sub justo Deo, miser esse quisquam, nisi mereatur, potest’ [under a just God there cannot be anyone wretched unless he deserves it], from which the Saint had drawn the doctrine of original sin (on the basis that, if God is just, then any human suffering must be deserved, and since every human suffers, no human can be innocent of sin, even children).¹⁶ As for the minor premise, it was often noted that the principal explanation for God’s permission of human suffering, namely punishment for sin, could not be extended to account for animal suffering since, unlike humans, animals are incapable of sin, and of even knowing God, let alone hating Him or disobeying Him. In short, there was no animal fall (and it would

hardly be just for animals to be punished because of man's fall). From the combination of the two premises it followed not that animals with souls were impossible per se, but that it was not possible for God to create them on account of His perfect justice.

A central assumption in this argument (and which is only partly explicit in the minor premise) is that pain and suffering can be experienced only by creatures with souls. This was, as it happens, a view widely shared by automatists and anti-automatists alike. Near the end of his life Descartes famously asserted to Henry More that he had denied 'sensation to no animal, in so far as it depends on a bodily organ';¹⁷ in other words, he accepted that the *physiological* conditions for sensation were present in animals, inasmuch as they possessed sense organs which, when triggered, excited their nerves, agitated their animal spirits etc., but that the *phenomenological* experiences of sensation (e.g. the feeling of a pain) were absent on account of being mental events which thus required the existence of a soul.¹⁸ Automatists tended to adopt this position, or some close variation of it (as we shall see later), and so generally denied that animals were capable of sensation understood phenomenologically, while opponents of automatism routinely argued that animals were so capable. Therefore, in framing the argument from divine justice Poisson was entitled to assume that pain and suffering can be experienced only by creatures with souls, as it was a claim that his opponents would have granted him.

After Poisson, the argument from divine justice quickly became a staple of animal automatists, being rehearsed by thinkers such as André Martin (1671),¹⁹ Nicolas Malebranche (1674–5, 1682, 1696),²⁰ Antoine Dilly (1676),²¹ Jean Darmanson (1684),²² John Norris (1704),²³ Isaac Jaquelot (1705),²⁴ and others. It even appeared in verse form in the work of Louis Racine (1728).²⁵ The perceived strength of the argument can be gleaned not just from its prevalence in the work of animal automatists, but also in the amount of fire it drew from opponents. One of the more notable responses was made by Pierre Bayle (1702). His most serious charge was that the supporters of the argument from divine justice were in danger of overturning a key doctrine of Christianity. In making this claim he supposes as given: (a) that animals are innocent; (b) that animals suffer, and notes that together they undermine the *sub justo Deo* principle, which he expresses as 'that which has never sinned cannot suffer evil.'²⁶ The undermining of the *sub justo Deo* principle is unwelcome inasmuch as it underpins the doctrine of original sin, and in any case 'follows necessarily from the ideas we have of the justice and goodness of God,'²⁷ so it is not something that a right-thinking Christian could plausibly question, let alone discard. The power of Bayle's objections often lies in their rigour, but in the case of this objection rigour is not enough to make it compelling, for it could only feasibly sway those automatists prepared to grant him that animals suffer, which *ex hypothesi* none of them was likely to do.

In the decades that followed Bayle's attack, other opponents of automatism also felt moved to address the argument from divine justice. Typically, those who did so believed that the most effective response was to offer a clear, plausible explanation of how animal suffering could be reconciled with God's justice. Attempts at such an explanation were invariably brief and amounted to much less than a fully developed animal theodicy (*avant la lettre*). In his *Essai Philosophique sur l'ame des bêtes* (1728/1737), David Boullier insisted that God's creation of animals with souls, and which are therefore capable of suffering, does not tell against His justice, which would only be impugned if He had created *wretched* creatures, that is, creatures for whom it would be better, all things considered, not to have existed at all. But God ensures that no innocent creature (i.e. animal) is ever reduced to this state.²⁸ Five years later, in his defence of animal souls, Jean-Pierre de Crousaz (1733) insisted that animals 'do not suffer much'; this is partly

because they lack the ability to reflect on their lot, and partly because God has so constructed them as to ensure that whatever disagreeable sensations they do experience are as nothing in comparison to the pleasures they get from the agreeable ones, which are more enduring and experienced more frequently.²⁹ Displaying an even greater penchant for speculation, Guillaume-Hyacinthe Bougeant claimed in his notorious *Amusement philosophique sur le langage des bestes* (1739) that the suffering of animals is just because it is deserved.³⁰ He conjectured that the souls of devils which freely sinned against God were punished by being imprisoned in the bodies of animals, wherein they have no freedom and a much reduced capacity for rationality. Thus ‘every beast is a devil united to an organized body,’³¹ and on account of their guilt animals deserve whatever suffering befalls them. Although Bougeant’s work was well-known, and much discussed, few took it seriously. In 1749 Jean-Antoine Guer, the first chronicler of the beast-machine debate, openly stated in his survey that Bougeant’s position was so ludicrous it did not need to be refuted.³² The fact that the argument from divine justice elicited such poor quality responses from opponents perhaps goes some way towards explaining the widespread popularity it enjoyed amongst automatists, which exceeded that of any other argument from the divine nature to animal automatism.

IV. The argument from divine providence

The second such argument to be developed was initially put forward by Nicolas Malebranche in his *Search after Truth* (1674–5). This argument – henceforth referred to as the argument from divine providence – begins with the recognition that all animal actions display regularity, and that regularity signifies intelligence. There is thus a need to posit a principle of intelligence behind animal actions, and here two options are available: first, a principle of intelligence internal to the animal itself, as would be the operation of an animal’s understanding or reason; or second, a principle external to the animal, namely God.³³ Malebranche endorsed the second option on the grounds that the first leads to absurdity: if we were to admit a principle of intelligence in animals ‘then we should have to say that there is more intelligence in the smallest of animals, or even in a single seed, than in the most spiritual of men.’³⁴ This is so because animals are more orderly in their behaviour than are humans, inasmuch as they are less likely to deviate from a particular pattern of behaviour. But such a consequence of attributing intelligence to animals is absurd, which means that attributing intelligence to animals is itself absurd. And since there *is* a principle of intelligence, it must lie outside animals, in fact in the creator, the one who has constructed the bodies of animals.

This argument from divine providence proved very popular among subsequent automatists, though many favoured a reworked version based around the stock examples of so-called animal sagacity which were continually rehearsed in the literature of the time, e.g. the hound which, finding three possible paths in front of it and no scent of its quarry down two of them, opts for the third as if deducing it syllogistically; the hind which hides her fawn downwind to thwart pursuing hounds; the spider which spins an intricate web to trap flies, etc.³⁵ Once these or similar examples of animal sagacity had been laid out, the argument proceeded as per the version developed by Malebranche, i.e. by positing that there were two possible explanations for the behaviour described, namely that animals have understanding/reason, and therefore a soul, or that God had providentially fashioned an organic machine of such complexity and subtlety that it could behave in such ways without the need of a soul and its attendant psychological life. This is the version of the

argument from providence that we find in John Norris (1704),³⁶ François Fénelon (1712),³⁷ and others such as Abbé Macy (1737).³⁸

It is worthwhile noting that at the conclusion of the argument, when attempting to describe the mechanism by which God conducts and directs animal behaviour, Fénelon reaches for the notion of *instinct*, as indeed did many who endorsed the argument from providence. For Fénelon, *instinct* was simply a natural, spontaneous impulse to act in a way conducive to survival, which God instilled in animals via dispositions. Most who utilised the notion of instinct in this context likewise understood it naturalistically,³⁹ but others opted to interpret it as something almost supernatural. For example, in 1711 Joseph Addison remarked that the principle at work in animals ‘cannot be termed Reason’ and was instead instinct, which he took to be ‘the immediate direction of Providence, and such an operation of the supreme Being, as that which determines all the portions of matter to their proper centres.’⁴⁰ One person who would have balked at the suggestion that God’s providence was manifest through animals’ instincts was the originator of the argument from divine providence, Nicolas Malebranche, who held that instincts were nothing more than innate desires to obtain pleasant sensations and avoid unpleasant ones. For Malebranche, of course, animals have no mental life,⁴¹ and therefore no desires, or sensations (pleasurable or otherwise), and their want of these things thereby disqualifies them from having instincts also.

However it was couched, many thinkers were led to affirm in animals an exquisitely detailed mechanism that was able to produce complex behaviours not dissimilar to some of those witnessed in thinking beings. The fact that their soulless frames had been so arranged as to enable them to live and thrive despite the apparent handicap of being without thought was testimony to the craftsmanship of God. ‘Our system,’ wrote the Cartesian Abbé Macy, ‘affords a magnificent idea of the wisdom and the providence of the Creator.’⁴² As such, it was grist to the mill of the natural theology movement, which saw the hand (and thus the existence) of God in the order and purpose of natural phenomena such as the structure of animal bodies.

V. The argument from divine economy

Needless to say, not all pro-automatism arguments were able to benefit from an association with such a prominent movement, nor could all boast such an illustrious parentage as that enjoyed by the argument from divine justice (coming as it did from the hand of Malebranche). As if to underscore this fact, the next three pro-automatism arguments to be advanced had much humbler origins, being the product of a thinker whom history has, fairly or otherwise, consigned to relative obscurity, namely Antoine Dilly, a priest at Ambrun.⁴³ His *De l’âme des bêtes* (1676) was one of the first book-length works in favour of animal automatism. Although practically unknown now, it was widely read and cited by his contemporaries. In the book, Dilly presents a suite of arguments for the beast-machine hypothesis, many of his own devising. Among them is the following three-step argument, which I shall term the argument from divine economy:

God has the power to create anything which does not imply a contradiction

God is able to make an animal automaton, that is, He has the power to make a body similar in every way to that of a monkey, and which behaves exactly as a monkey does simply by virtue of its organs and nothing more (i.e. no soul).

God ‘always acts by means of the shortest way, and never employs 4 where 2 would suffice; so much so that the body alone with a certain arrangement of its parts having been sufficient

for the production of the most regular actions of animals, one has to conclude that they do not have any knowing soul.⁴⁴

Dilly entitles this ‘Another proof that beasts do not have knowledge, drawn from God’s power,’⁴⁵ but this is rather misleading, inasmuch as although the argument begins with claims about God’s power, the focus in the key third step shifts away from God’s power and onto His wisdom. To claim that God always acts via the shortest way is to make a claim about the means God uses to bring about His ends;⁴⁶ it is, in fact, to state that God acts wisely, inasmuch as He acts economically, not acting in vain by taking unnecessary steps. This is not to say that wisdom consists entirely in acting economically; indeed, in Francis Hutcheson’s felicitous formulation, ‘Wisdom denotes *the pursuing of the best Ends by the best Means.*’⁴⁷ The claim that God’s wisdom would manifest itself not just in His choice of ends, but also in His choice of means to those ends, was one found often in the work of many seventeenth and eighteenth century thinkers, and associated particularly with Malebranche, Leibniz, and Wolff,⁴⁸ though each applied it in the field of theodicy rather than animal automatism; consequently none of them developed the claim into the argument from divine economy, as Dilly did in 1676. The argument invites us to suppose that it would have been entirely unnecessary for God to create animal souls, as *ex hypothesi* animal bodies alone are capable of producing the range of behaviour God wanted. Consequently a wise God would have created animal automata.

The argument from divine economy was endorsed by a number of later automatists, such as Jean Darmanon (1684),⁴⁹ and the Benedictine Cartesian philosopher François Lamy (1698), who argued that we are assured that God did not give souls to beasts:

...if we have any idea of His wisdom, for since it belongs to this wisdom to do nothing unnecessarily, and to achieve His ends by the shortest ways, would it not have been contrary to this simplicity to give to beasts, in order for them to execute their movements, a soul which would not have had any connection or relationship with them, a soul without which it is acknowledged that they would have been able to execute everything just as regularly?⁵⁰

Similarly, in 1700 François Bayle (no relation to Pierre) urged that:

God does nothing in vain, He does not at any time use superfluous means for His ends, for that is incompatible with His wisdom, which works in the simplest manner and proceeds in the shortest way, and consequently there is in beasts no principle distinct from the structure of the body, for it would be superfluous, seeing that beasts can perform all their functions without it.⁵¹

In each case the thrust of the argument remains the same. That the argument was not changed or developed, merely iterated, is likely due to the fact that opponents to animal automatism did not challenge the argument’s form, or even its key claim that God always acts by the simplest/shortest ways.

VI. The argument from divine glory #1

The lack of a direct response to the argument from divine economy is noteworthy, not least because it was rehearsed in works that were widely read and cited, most notably Dilly’s *De l’âme des bêtes*. In that work Dilly sketched out two further arguments in favour of the beast-machine hypothesis, neither of which drew a response from opponents. Both of these overlooked arguments were based on the notion of divine glory. In

the first, which I shall prosaically term the argument from divine glory #1, Dilly begins with the assertion that when considering God's works we need to keep in mind that they were made for His glory. With regard to the creation of animals, Dilly then asserts: 'it is certain that we conceive that the construction of an automaton similar to a beast, in which there is no knowing soul, requires more artifice, more wisdom, and more power in the worker for the arrangement of so many different parts, for their mutual proportion, and lastly for the production of so many different movements which are so in keeping with the conservation of the automaton' than is involved in producing a beast endowed with a soul, which could attend to its own conservation.⁵² In the same way, we would form a grander idea of the craftsman who constructed a boat which was able to lower its own sails when necessary, steer itself away from reefs and sandbanks, and make whatever other adjustments are necessary, than we would of the craftsman who builds an ordinary ship which requires a pilot to do all of these things.⁵³ François Bayle concurred, insisting that the creation of animals able to attend to their own conservation and to carry out all their functions through the structure and interconnection of parts better attested to God's glory than the creation of animals with 'some knowing principle,'⁵⁴ i.e. a soul. There is some overlap between this argument and the argument from divine economy, in that both appeal to God's wisdom. However the argument from divine economy appeals only to that, whereas the argument from divine glory #1 appeals not just to God's wisdom, but also to His artifice and power.

VII. The argument from divine glory #2

The second argument from divine glory (#2), this time in the *reductio ad absurdum* vein, is to be found in inchoate form in Dilly's book, where he writes:

...it is inconceivable that God be able to create a substance capable of knowing and loving except in order to make it know and love Him; as a result, if animals are capable of knowledge and love, we should say that God unceasingly turns them towards Him in order to make them love Him and to make them know Him, which seems to have rather unfortunate consequences.⁵⁵

Dilly does not say what these consequences are, an oversight that robs the argument of both punch and clarity. Possibly he had in mind those later identified by fellow automatist Jean Darmanson (1684); according to Darmanson, to allow that animals are capable of knowledge and love, yet not capable of knowing and loving God, results in a chain of unacceptable theological consequences – it first undermines the doctrine of original sin, and then the doctrine of the trinity, the divinity of Christ, and even scripture itself! Much of Darmanson's extended (and often quite rambling) treatment of the argument is devoted to showing how all of these consequences are 'derived necessarily from the common opinion concerning the knowledge of beasts.'⁵⁶ To understand how the argument works, we need to suppose, along with opponents of animal automatism, that it would be correct to say (for example) that a dog knows its master, and loves to eat and drink, etc., yet it neither knows nor loves its God. If we also suppose, along with opponents of animal automatism, that the dog has a soul, then two possible explanations are open to us:

Either this soul is in order or else it is in disorder: it is not in disorder since it is such as it left God's hands, so it is in order; therefore God exempts it from the laws of His knowledge and His love, therefore God does not love Himself necessarily with an infinite love, and does not have an infinite zeal for His glory.⁵⁷

Unfortunately the compressed presentation of Darmanson's argument serves only to impede its intelligibility. At least the first part of it is clear enough: if animals have souls capable of knowledge and love, but not capable of knowing and loving God, then this is how these souls must have left God's hands (there has, after all, been no animal fall). God thus must have created animal souls *at the outset* to know and love only the physical; moreover, He must have done so deliberately. He thus *permits* them to know and love only the physical. Darmanson then suggests that from a theological standpoint this is problematic, because this is precisely what has been forbidden to humans: the common theological belief is that when our horizons do not extend beyond the physical, we are in disorder, i.e. at odds with God's plans. Indeed, this is enshrined in the traditional conception of sin as *aversio a Deo et conversio ad creaturam*: [sin is] a turning away from God and turning towards something created. This gives rise to something of a puzzle: on the one hand, the standard theological account holds that God did not create humans in the state in which they now find themselves, in which they routinely eschew the spiritual (God) in favour of the physical; indeed, He could not have created humans that way, as He acts only for the sake of His own glory. That humans are now in that state is a result of Adam's fall. On the other hand, opponents of animal automatism would have us believe that God created animals in such a state of innocent submission to the physical, the very state that theologians tell us God could not have created humans. This leads Darmanson to say of the hypothesis which grants souls to animals:

If that is true...one must say goodbye to all the reasons the church has always used to prove original sin; the corruption of nature by concupiscence and the necessity of a mediator, since it can happen that our nature is not in disorder, God having been able to create it in the state in which we see it: Therefore God can exempt us from the laws of His love and permit us sin; therefore He does not necessarily love Himself with an infinite love, which would not permit Him this exemption; therefore the mystery of the trinity based on this principle is only illusion and phantom; therefore Jesus Christ can pass as an imposter, and Holy Scripture as a paradox.⁵⁸

Darmanson's argument was sympathetically outlined by Pierre Bayle in his review of Darmanson's book for the inaugural issue of the journal *Nouvelles de la République des lettres* (1684).⁵⁹ Bayle's review of Darmanson was widely read, yet in spite of the extra publicity the second argument from divine glory was rarely endorsed afterwards. As far as I can tell, its last deployment occurred in 1700, in the work of François Bayle, who noted the difficulty we would have:

...to believe that God has ever produced any substance capable of knowledge and love which neither knows nor loves Him. And therefore if we concede that beasts know, we have to concede that they know and love God, which is absurd in every philosophy and impious to Christians.⁶⁰

This recalls Dilly's version of the argument; apparently François Bayle either did not read, or was not influenced by, either Darmanson or his more famous namesake, Pierre.

VIII. The argument from divine wisdom

The sixth and final argument for animal automatism drawn from the nature of God is to be found in one of Malebranche's lesser known works, the *Defense de l'auteur de la Recherche de la vérité, contre l'accusation de Mr. de la Ville* (1684). This argument

aims to show that granting souls to animals conflicts with God's wisdom, and as such cannot be justified. I shall accordingly term it the argument from divine wisdom. It begins with the uncontroversial observation that a swallow eats a huge number of flies. Now if these flies are supposed to have been endowed with souls, then we are led to suppose, claims Malebranche, that 'an innumerable number of souls [sc. those of flies] are annihilated in order to conserve the bodies of these birds.' The trouble with this is that 'the soul of a fly is better than the body of the most perfect of animals.' This is because soul is by its very nature a more noble substance than matter. 'Therefore, if one affirms that beasts have souls, that is, substances more noble than bodies, one deprives God of wisdom, and makes Him act without order.'⁶¹ A crucial assumption of this argument is that when an animal dies its soul is annihilated by God; Malebranche was well aware that few were likely to challenge this assumption (and indeed, most of those who did grant souls to animals explicitly affirmed that God annihilated those souls at the point of death). But the argument from divine wisdom does not draw its strength from the fact that God annihilates all animal souls, or at least an inordinate number of them, but rather from the puzzling disparity between the fate of animal souls and that of animal bodies. Animal souls, despite being the nobler of the two substances, are annihilated, while the inferior animal bodies are not, for although the bodies eventually break down into their component parts, these parts are not annihilated. This stress on the *nobility* of the substances, and the oddity involved in supposing that God might preserve the lesser while destroying the greater, is brought out more clearly in Pierre Bayle's brief treatment of the argument in his *Dictionnaire historique et critique* (1702):

According to common opinion, the souls of beasts are annihilated the instant the beasts cease to live. Where then is God's constancy? He creates souls and soon He destroys them. He does not do the same thing with regard to matter, for He never destroys it. He therefore conserves the less perfect substances and destroys the more perfect. Is this acting like a wise agent?⁶²

Bayle suggests that the difficulty is removed by Descartes' opinion that beasts are machines, though ultimately this was not enough to convert him to Descartes' view.

It is uncertain whether the authorship of the argument from divine wisdom should be credited to Malebranche; a case can be made in favour of Jean Darmanson, who included what could be considered an inchoate version of it in his *La bête transformée en machine*, published early in 1684:

It is in keeping with God's wisdom to make nothing useless in nature, and not to sacrifice in the service of the body the souls of an infinity of animals, which are much more excellent than the noblest of all bodies.⁶³

Interestingly, in the review of Darmanson's book, also from 1684, Bayle saw Darmanson as making two distinct arguments here; first, that if animals have souls, and God annihilates these souls, then 'God destroys His own work, which is a mark of inconstancy,' and second, that if God annihilates souls but not bodies then He 'preserves the less perfect substances while annihilating the more perfect, which is not in keeping with a wise agent.'⁶⁴ The second of these is a fair summary of the argument from wisdom as Darmanson outlines it; the first is a separate argument, and one that Darmanson does not make.

IX. The argument from superfluous organs

Our examination now turns to those arguments, again based on the nature of God, that were advanced *against* the beast-machine hypothesis. As noted earlier, there were two of these, and I shall call them the argument from superfluous organs, and the argument from deception. Both were developed by Ignace Pardies in his *Discours de la connoissance des bestes* (1672). The first of the two arguments has its roots in Pardies' remark that:

It would be a very strange thing, and scarcely in keeping with the infinite wisdom that we notice in the works of nature, if it had taken the trouble to form eyes and ears which served only for outward show, and not for seeing or for hearing.⁶⁵

The somewhat tentative argument made here was subsequently adopted, and indeed sharpened up, by various opponents to animal automatism, though Voltaire's delivery from 1733 is undoubtedly the clearest and punchiest:

It seems to me almost proven that animals are not simply machines. Here is my proof: God gave them precisely the same organs of sense as ours; thus, if they feel no sensations, God has made something useless. Now God, you claim, does nothing in vain; thus He cannot have made so many organs of sense if they were not capable of sensation; therefore animals cannot be purely machines.⁶⁶

In response, it was often noted by automatists that on their hypothesis organs such as eyes, ears and noses are integral parts of the bodily mechanism, and indeed the instruments through which external objects can produce certain effects on the body, and for that reason could not be written off as useless. This point formed the core of what became the stock response to the argument from superfluous organs, though the response itself was often nuanced by one's understanding of the mechanics of sensation, or at least by the way one opted to describe them. Antoine Le Grand, for example, identified three degrees of sensation: the first degree is the mere stimulation of corporeal sense organs by external things, and the consequent excitement of various nerves, while the second degree occurs when this stimulation is transferred to 'the pineal gland, or seat of the soul,'⁶⁷ which causes perceptions (in the incorporeal mind) such as pain, hunger and thirst. The third degree involves a judgement about the perceptions of the second degree, e.g. an affirmation that an object is such-and-such a colour.⁶⁸ This distinction draws credence, Le Grand avers, from Isaiah 6.9 ('Keep on listening, but do not perceive; Keep on looking, but do not understand'), though it can be proved adequately enough from our own experience, since there are times when our eyes are open yet we do not really see what is in front of us as our attention is elsewhere, which suggests a difference between the mere stimulation of sense organs and the richer experience of true sensation.⁶⁹ With this distinction in hand, Le Grand proceeds to argue that animals are capable of only the first (mechanical) degree of sensation, but that they have need of organs such as eyes, ears and noses for that. Thus these organs are not useless to animals even on the automatist's hypothesis.

Other animal automatists made a similar point while glossing the process of sensation in a slightly different way. Antoine Dilly (1676), for example, identified four stages in the process of seeing to which he thought the term 'sensation' could meaningfully be applied:

- (1) the image an object makes on the retina
 - (2) what is transmitted to the brain by the vibrations of the retinal threads caused by
- (1)

- (3) the movements of the animal spirits produced by (2)
- (4) an awareness and confused thought of the object⁷⁰

According to Dilly, the first three stages occur in animals, and all four only in humans. While Le Grand and Dilly differed in their understanding of the physical processes involved in sensation, or at least in the way they described them, they were united not only by their acceptance of the dualistic framework, the separation of nature into the two distinct substances of body and soul, but also by their conviction that the process of sensation is one that starts in the (corporeal) body and ends in the (incorporeal) soul, and so crosses from one realm or domain to the other. Both, moreover, were agreed that only the corporeal processes involved in sensation took place in animals, but that recognition of this was enough to take the sting out of the argument from superfluous organs. The responses of other animal automatists to this argument follow the same pattern as found in Le Grand and Dilly, with the only variation being in the way the corporeal component of sensation was understood, or described.⁷¹ Even Gabriel Daniel, one of the fiercest critics of Cartesianism and the beast-machine hypothesis, considered the response adequate, admitting in 1702 that animal sense organs could not be considered useless even on the hypothesis that animals are automata.⁷²

X. The argument from deception

The second argument from the nature of God against animal automatism was also developed by Ignace Pardies in 1672; I shall call it the argument from deception. The central principle behind this argument is that if someone makes us think something which turns out not to be true, then they deceive us. Pardies uses the example of a puppeteer, who can be said to deceive us inasmuch as he presents us with a puppet that looks, acts, and talks like us, and so naturally leads us to conclude that the puppet is human, when it is in fact not so. There would be a similar kind of deception involved if animals turn out to be machines, claims Pardies. For when we consider those actions which beasts and humans perform in a similar way:

...we judge from the outset that they happen in beasts just as in ourselves, with knowledge and with feeling. So if all these beasts were only pure machines, what could we say of the one who presents them to us and who makes them perform before us like puppets?⁷³

Pardies' rather rambling presentation obscures the form of his argument, which ultimately seems to be this: We know God is perfectly good, which means (among other things) that He does not deceive us; yet God would deceive us if animals were pure machines, therefore they cannot be so. Pardies does not seek to defend the major premise, though given that the very notion of a deceiving God was so emphatically ruled out by Descartes in his *Meditations*,⁷⁴ it is unlikely he would have come under any pressure from the Cartesians to do so. Instead, Pardies' main concern is to establish the reasonableness of the minor premise, which he does via the parallel examples of the puppet and animals. In both scenarios, Pardies holds that the mistaken belief (that puppets are human/that animals have souls) arises as a result of a clear intention to deceive (on the part of the puppeteer in the first case, of God in the second). The point is far from compelling in itself (do puppeteers really intend to *deceive* us?), and not surprisingly those who saw enough promise in the argument from deception to endorse it themselves did not present Pardies' formulation of it. John Ray (1693), for example, opted for rhetoric over rigour:

Wouldn't God seem to have duped the human race if, instead of living animals having their own internal principle of motion (as men have believed until now), He had filled the world only with as it were dolls or little images completely destitute of any life and sense?⁷⁵

Behind such thinking, Ray believed, was the human prejudice that the world was created for man alone:

If this is true, it is doubtless why man elevates himself and takes pride in himself, and rightly boasts that this world was founded for his cause alone, for it does not seem that there would be any further use for it if men were wiped out or moved elsewhere.⁷⁶

Ray's formulation of the argument from deception is much looser than Pardies', and arguably it does not benefit from the rhetorical flourishes he gives it, though he is surely right that one of the chief motivations for holding the beast-doctrine was that it raised man above animals.

Those animal automatists who sought to respond to the argument took issue with the assumption – found in all versions of the argument – that if we are mistaken in supposing animals to have souls then God would be a deceiver. Antoine Dilly, responding in 1676 to Pardies' version of the argument, insisted instead that if we are mistaken in this way then the fault would be one that should be laid at our feet rather than God's. Dilly argued that ideas represent to us things in a certain way, and if it were to turn out that these things are otherwise than as our ideas represent them to be, then God would be at fault (because all ideas come from Him).⁷⁷ But, Dilly continues, we are able to make judgements about things that we do not know all that well, or have not investigated fully, and if it turns out that we make erroneous judgements in such situations (e.g. judging that the earth stands still because it appears not to move) then the fault lies with us, for making judgements prematurely, before all the facts are in. In the case at hand, Dilly asserts that it cannot obviously be the case that animals think, feel, or have souls because these are matters disputed by philosophers, and are bound up with thorny metaphysical questions such as whether matter can think.

Abbé Macy (1737) also took the argument from deception very seriously. Like Dilly, Macy was keen to stress the point that the beast-machine hypothesis itself implies no deception on God's part: 'It is not God who makes you believe that they [beasts] have a soul capable of knowing; the fact is that your prejudice makes you regard as evident what is contrary to reason.'⁷⁸ More ambitious was Macy's attempt to turn the argument from deception on its head by arguing that God would be a deceiver not if animal automatism turned out to be true, as Pardies believed, but if it turned out to be *false*: 'if beasts had a soul capable of knowing,' Macy argues, 'God would be deceiving me, for I cannot convince myself that beasts know without at the same time thinking that some of them think much better than men.'⁷⁹ The bee, for example, makes honey without ever having been taught how, while humans require instruction to do what they do; further, the bee needs no mathematical instruments to create a hexagonal honeycomb, yet no humans are natural mathematicians. Ultimately Macy's response draws whatever strength it has not by linking the thesis of animal souls with a deceiving God (a link that is far from adequately forged), but by showing that the thesis of animal souls is apt to challenge our belief in human uniqueness; for if we grant a thinking soul to animals then we are forced to grant that (some) animals are better at (some kinds of) thinking than we are, which in turn puts strain on the idea that humans are special, an idea that even those opposed to the beast-

machine hypothesis had no wish to question since it had, after all, been vouchsafed by God.

XI. Conclusion

Macy's defence of the beast-machine hypothesis was not only spirited, as should be clear enough, but somewhat poignant also, inasmuch as near the beginning of his *Traité de l'ame des bêtes* (1737) he all but concedes that the battle over the beast-machine was already lost, since 'All philosophers, or at least the majority,' now endorsed animal souls.⁸⁰ This was in fact a fair assessment. By 1737, the beast-machine hypothesis attracted little support among the philosophical community, and its decline in popularity only continued in the years that followed.⁸¹ By the end of the eighteenth century the beast-machine controversy had faded out entirely, and consequently did not spill over into the centuries that followed. Nevertheless, many of its underlying issues and questions, about animal sentience and thought, did continue to be the subject of philosophical debates, and remain so even today. Which brings us back to the question raised at the start of the paper, namely: can the arguments of the beast-machine controversy serve as a useful resource for philosophers today?

At first glance it might seem that a negative answer should be given, since virtually all of the arguments we have examined seek to prove the existence or non-existence of the animal soul, whereas contemporary debates are typically about whether animals are capable of thinking, or feeling pain, or enjoying consciousness, and not about whether animals have a soul or some other metaphysical component that would grant them such capabilities.⁸² So it is tempting to suppose that the debate about the nature of animals has simply moved on, and that as a result the dialectical thrusts and parries of the beast-machine controversy are now of historical interest only.

It would be wise to resist such a hasty judgement, however. While it is true that some of the arguments we have considered would be of little relevance to contemporary debates, for the reason already identified, this is by no means true of all. In fact, some of the arguments clearly do have application today. For example, the argument from divine justice seems to pose a problem for the theist who would say that a just God granted animals sentience, such that they can feel pain and suffer, despite not having deserved it, nor having any prospect of future recompense. Indeed, it is for this reason that theistically-minded philosophers have started to take seriously the need for animal theodicies;⁸³ without one, a theist seems committed to saying either that God is not just, or that animals are not sentient.⁸⁴ The argument from divine justice thus needs to be taken seriously by contemporary theists. In addition to that, I see no reason why the argument from divine glory #2 and, on the other side, the argument from superfluous organs and the argument from deception, could not be modified so as to be serviceable in the contemporary debates about the nature of animals, as none of these needs to be framed in terms of animal souls at all. I shall leave it to others to determine whether these arguments should play a part in contemporary debates; for our purposes, it is enough to point out that those arguments could be so used.

Acknowledgements

I would like to thank David Cockburn, Daniel J. Cook, Vernon Pratt, and two anonymous *IJPT* referees for their helpful comments on an earlier draft of this article.

Notes

1. Namely Gontier, *De l'homme à l'animal*; Guer, *Histoire Critique*; Radner and Radner, *Animal Consciousness*, 7–113; Rosenfield, *From Beast-Machine*.
2. Descartes, *Philosophical Writings*, I, 111–51, especially 139–41. Descartes was not the first to argue for animal automatism: the Spanish physician, Gomesius Pereira, made the claim almost a century beforehand, in his *Antoniana Margarita* (Medina del Campo, 1544). Although Pereira's theory was known to many early moderns, largely due to Pierre Bayle's discussion of it in his *Dictionary*, it appears to have had little to no influence on the beast-machine debate that erupted following the publication of Descartes' *Discourse*. See Bayle, *Dictionnaire historique et critique*, III, 649–56 (art. 'Pereira').
3. Descartes himself preferred the term 'mind' over 'soul'; see Descartes, *Philosophical Writings*, II, 114. I have elected to disregard Descartes' preference on the grounds that in the beast-machine debate that is the topic of this article, 'soul' was the preferred term of most of those involved.
4. In some writings Descartes does grant a soul to beasts, but only in the sense that 'the souls of animals are nothing but their blood'; Descartes, *Philosophical Writings*, III, 62. Descartes' justification for this association was scriptural (Leviticus 17.14 and Deuteronomy 12.23), and for the most part he preferred to reserve the term 'soul' for humans, identifying it with reason. See for example Descartes, *Philosophical Writings*, III, 182.
5. It is notable that the very same examples of animal sagacity were recycled again and again by different thinkers. Moreover, many of the examples were drawn from literary tradition rather than personal observation (see note 35).
6. e.g. Digby, *Two Treatises*, 387–431.
7. e.g. Schuyt, *Renatus des Cartes*, preface; Dilly, *De l'âme des bêtes*, 178–87.
8. e.g. Daniel, *Voyage du monde*, 440ff.
9. e.g. du Hamel, *Libri quatuor*, 302ff; Wolff, *Psychologia Rationalis*, 377. Such an argument is still in use today to establish animal mentality. See, for example, Searle, 'Animal minds', 217.
10. e.g. Bossuet, *Introduction a la philosophie* (1722), 358f. Note that this book was written in 1677, but only published long after Bossuet's death in 1704.
11. It is for this reason that few were prepared even to entertain the idea of animals possessing immortal souls, let alone endorse it. But see Thomas, *Man and the Natural World*, 138–40.
12. One of the ways in which the beast-machine debate developed was through the attempts of certain philosophers to extend the range of choices beyond the two described here. For example, some of those prepared to attribute souls to animals sought to determine a basis for supposing that while human souls were immortal, animal souls were not. Leibniz and Wolff, for example, argued that while animal souls were naturally *imperishable*, because of their incorporeality, they were not truly *immortal* because they lacked memory and personality. See Leibniz, *Shorter Leibniz Texts*, 65; Wolff, *Psychologia Rationalis*, 385.
13. Descartes, *Philosophical Writings*, III, 304. This argument has been the subject of much scholarly attention. For contemporary treatments see Radner and Radner, *Animal Consciousness*, 81–5; Thomson, 'Animals, humans, machines', 3–37.
14. This is a high number, even by the standards of early modern debates, in which arguments based on the nature of God were not uncommon. No doubt part of the explanation for this is that all eight of the arguments were developed by professional churchmen: Nicolas Poisson and Nicolas Malebranche were Fathers of the Oratory, Antoine Dilly was a priest at Ambrun, and Ignace Pardies was a Jesuit father.
15. Poisson, *Commentaire ou remarques*, 157. Poisson's decision to present his argument syllogistically may have been informed by the *Port Royal Logic*, which illustrated argument forms such as Barbara, Camestres and Celarent with various examples involving animal souls and thinking (or lack thereof). See Arnauld and Nicole, *La Logique*, 276–8.
16. See Augustine, *Contra secundam Juliani responsionem*, 1065.
17. Descartes, *Philosophical Writings*, III, 366.
18. There has been a lively a debate about what precisely Descartes was prepared to attribute to animals. For some of the contributions, see Cottingham, *Cartesian Reflections*, 163–72; Harrison, 'Descartes on animals'; Morris, 'Bêtes-machines'; Wilson, 'Animal ideas.'
19. Victor, *Philosophia Christiana*, VI, preface.
20. Malebranche, *Dialogues on Metaphysics*, 323; Malebranche, *Defense de l'auteur*, 13; Malebranche, *Entretiens sur la métaphysique*, 304. In the *Defense* Malebranche presents the

argument from divine justice as a straightforward *reductio ad absurdum* of the belief in animal souls: if we accept that animals suffer, and that they have not sinned, and we hold fast to the *sub justo Deo* principle (which he gives as: under a just God, one cannot be miserable without having deserved it), then we are forced to conclude that God is not just. But as this is absurd, so must be the belief that led us to it.

21. Dilly, *De l'âme des bêtes*, 96–101.
22. Darmanson, *La Beste transformée*, 23ff.
23. Norris, *An Essay*, 75–6. Norris credits Malebranche's *Defense* as his source for the argument.
24. Jaquelot, *La conformité*, 210.
25. Racine, *Continuation des Memoires*, 88ff.
26. Bayle, *Dictionnaire historique et critique*, IV, 77.
27. *Ibid.*, 77.
28. Boullier, *Essai Philosophique*, 319.
29. de Crousaz, *Examen du Pyrrhonisme*, 477.
30. It is perhaps surprising that this argument was not made more often by early modern thinkers. For one thing, the thought that animals were capable of sin, while hardly mainstream, was not always considered outrageous either, as is shown by the occurrence of animal trials in continental Europe throughout medieval and early modern times. See Salisbury, *The Beast Within*, 108–15. The Bible also contains accounts of animals being punished by God, e.g. Genesis 9.5 and Leviticus 20.15–16.
31. Bougeant, *Amusement philosophique*, 50.
32. Guer, *Histoire Critique*, II, 346.
33. Or sometimes the world soul, usually thought to be acting under God's direction.
34. Malebranche, *Dialogues on Metaphysics*, 495.
35. All these examples are drawn from Fénélon, *Oeuvres Complètes*, 45. However none is unique to him; the hunting dog example, for instance, is usually attributed to the Stoic Chrysippus, and was often discussed by classical authors, such as Sextus Empiricus, *Outlines of Scepticism*, 20, and Plutarch, *Moralia*, 379.
36. Norris, *An Essay*, 92. See also Anon. 'Review of Macy's *Traite*', 1847–8.
37. Fénélon, *Oeuvres Complètes*, 47ff.
38. Macy, *Traité de l'ame*, 235.
39. See for example Vallade, *Discours philosophique*, 138–9.
40. Addison, *The Works*, 57.
41. Despite this, it is worth noting that Malebranche does occasionally slip into the common ways of ascribing certain mental features to animals, such as when he claims that camels 'like muddy water' and that there are 'animals that enjoy themselves in mud.' Malebranche, *Dialogues on Metaphysics*, 82.
42. Macy, *Traité de l'ame*, 235. Needless to say, those opposed to animal automatism also found plenty of reason to praise God's workmanship vis-à-vis animals. See for example Pardies, *Discours*, 232ff.
43. For details see Bayle, 'Review', 25.
44. Dilly, *De l'âme des bêtes*, 75.
45. *Ibid.*, 74.
46. This is clear in Wolff, who writes '*God chooses means which lead to an end by the shortest way.*' Wolff, *Theologia naturalis*, 590.
47. Hutcheson, *Inquiry*, 60.
48. Malebranche, *The Search after Truth*, IX.X; Leibniz, *Theodicy*, 254ff; Wolff, *Theologia naturalis*, 614.
49. Darmanson, *La Beste transformée*, 19ff.
50. Lamy, *De la conoissance*, 539.
51. Bayle, *Institutiones physicae*, II, 645.
52. Dilly, *De l'âme des bêtes*, 75–6.
53. *Ibid.*, 77.
54. Bayle, *Institutiones physicae*: II, 645.
55. Dilly, *De l'âme des bêtes*, 99–100.
56. Darmanson, *La Beste transformée*, 12.
57. *Ibid.*, 9.
58. *Ibid.*, 11–12.

59. Bayle, 'Review', 28f.
60. Bayle, *Institutiones physicae*: 646.
61. Malebranche, *Defense de l'auteur*, 16.
62. Bayle, *Dictionnaire historique et critique*, IV, 77.
63. Darmanson, *La Beste transformée*, 18.
64. Bayle, 'Review', 30.
65. Pardies, *Discours*, 148.
66. Voltaire, *Philosophical Letters*, 44.
67. Le Grand, *Dissertatio de carentia sensus*, 115.
68. Le Grand here replicates Descartes' views of sensation. See Descartes, *Philosophical Writings*, II, 294–5.
69. Le Grand, *Dissertatio de carentia sensus*, 118–19.
70. Dilly, *De l'âme des bêtes*, 108–9.
71. See for example Macy, *Traité de l'ame*, 218.
72. Daniel, *Voyage du monde*, 458.
73. Pardies, *Discours*, 227–8.
74. Descartes, *Philosophical Writings*, II, 62.
75. Ray, *Synopsis methodica animalium quadrupedum*, 12.
76. *Ibid.*, 12.
77. Dilly, *De l'âme des bêtes*, 90.
78. Macy, *Traité de l'ame*, 236–7.
79. *Ibid.*, 238.
80. *Ibid.*, 32.
81. In this, the fortunes of the beast-machine hypothesis followed the fortunes of Cartesianism, the philosophy from which it had sprung, as Cartesianism found itself in terminal decline throughout the second half of the eighteenth century.
82. But see, for example, Moreland and Rae, *Body & Soul*, 213ff, who attribute souls to animals (albeit ones less richly structured than human souls), which enable them to have sensations, desires, thoughts, etc. Much of the recent literature on the issue of animal souls is polemical rather than philosophical, and often when a writer does claim that animals have souls they mean something other than an incorporeal spirit or something of that order. Hence we find the claim that animals have souls in the sense of being individual living beings: Parker, *Animal Minds, Animal Souls*, 87–90; and also that animals have souls in the sense that they are 'sentient, sensitive beings': Kowalski, *The Souls of Animals*, 23.
83. The project of animal theodicy only really began to be taken seriously in the final decades of the twentieth century. See Murray, *Nature Red*.
84. In recent years, Radner and Radner have suggested that the argument from divine justice (which they call the argument from divine recompense) shows either that animals do not suffer or that animals do suffer and are granted a place in heaven as recompense. See Radner and Radner, *Animal Consciousness*, 91.

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