

# Metaphysics and the Good

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Leibniz on Final Causation

## Abstract and Keywords

On a number of occasions Leibniz claims that the physical world is the realm of efficient causation, and that monads are the realm of final causation. Recent scholars have asked what Leibniz has in mind when endorsing final causation, especially in light of the general rejection of final causation by other early moderns. This chapter illuminates his notion of final causation in the context of his use of the notion of substantial form, and what that notion means in his thought.

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On a number of occasions Leibniz claims that the physical world is the realm of efficient causation, and that monads are the realm of final causation. Recent scholars have asked what Leibniz has in mind when endorsing final causation, especially in light of the general rejection of final causation by other early moderns. This chapter illuminates his notion of final causation in the context of his use of the notion of substantial form, and what that notion means in his thought.

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One of the fundamental planks of early modern philosophy was its rejection of Aristotelianism. Prominent in this rejection was an abandonment of final causation in favor of efficient causation. But Leibniz thought differently. On a number of occasions he presented final causes as having a role equal in prominence to the role of efficient causes. For instance, in the *Monadology* he wrote:

Souls act according to the laws of final causes, through appetitions, ends and means. Bodies act according to the laws of efficient causes or of motions. And these two realms, that of efficient causes and that of final causes are in harmony with each other.<sup>1</sup>

And in the *Principles of Nature and Grace*:

And the perceptions in the monad arise from one another by the laws of appetites, or by the laws of final causes of good and bad that consist in notable perceptions, ordered or disordered. Similarly the changes in bodies and external phenomena arise from one another by the laws of efficient causes, that is, of motions. Thus there is a perfect harmony between the perceptions of the monad and the motions of bodies, which is first pre-established between the system of efficient causes and the system of final causes. And in this consists the accord and union between soul and body without one being able to change the laws of the other.<sup>2</sup>

(p. 273) These remarks are striking for more than one reason. First, Leibniz clearly departs from his early modern context in embracing final causes. Moreover, given that for him monads are more fundamental than bodies, these passages suggest that for him final causes are more fundamental than efficient causes. Finally, these remarks are puzzling also from an Aristotelian point of view: Aristotle did not see final and efficient causes as types of explanation that apply to different explananda; rather they are different but connected aspects of a single full explanation. To separate the two and allow for one to operate without the other is very puzzling from this perspective. So how should we understand Leibniz's use of the notion of final causation?

The impression that Leibniz separated final and efficient causes and confined each to a separate realm is just that, an impression. We will see that on other occasions Leibniz assigned both types of causality to each realm. But we will also see that Leibniz did really depart from other early moderns in the importance he attached to final causes. Leibniz's respect for final causation is in line with his repeated claim that certain aspects of scholasticism are in fact more useful than many of his contemporaries had acknowledged. But the connections with the Aristotelian scholastic background are more complex than one might think. First, early modern criticisms of final causation are central to our conception of the period, but what is less well known (among early modern scholars) is that final causation had already troubled the Aristotelian scholastics for centuries, and the worries can be traced back as far as Avicenna. Various scholastics had argued that final causation requires knowledge that only an intelligent agent could have. At the same time Descartes went beyond the scholastics in arguing that 'immanent teleology', the internal directedness at an end the Aristotelians admitted even for

non-intelligent, natural agents, requires cognition on the part of an agent.<sup>3</sup> Second, I will relate Leibniz's use of the notion of final causation to his revival of the notion of substantial form, which he said should be understood on the model of the self, that is, a mind. Oversimplifying a bit, the notion of substantial form turns into the (p. 274) notion of a monad, the mind-like entities he regarded as the fundamental constituents of reality.<sup>4</sup> I will argue that for Leibniz genuine causal power requires final causality and cognition in the agent. Part of my argument is that Leibniz adopts Aristotelian ideas, final causation and substantial form, through a Cartesian lens.

I will begin with a discussion of final causation in the scholastics and Descartes's criticism of immanent teleology (section 1). Next I will relate Leibniz's revival of final causation to his resurrection of the notion of substantial form and argue that he saw final causation as connected to cognition (section 2). Then I will turn to the question of the apparent exclusion of efficient causation from the realm of monads (section 3).

## 1. Final Causation before Leibniz

For Aristotle, an explanation of a change involves appeal to four types of causes: final, efficient, formal, and material. In Aristotelianism, final causation was quite prominent, indeed, efficient causation was regarded as subordinate to it. In Aristotelianism, the orderliness and regularity of nature was due to the ends of nature, not to laws of efficient causality. An efficient cause acts in view of an end or goal, which is the final cause. This is easy to see in the case of an artisan producing an artifact: in view of the goal of making a statue, the artisan exercises efficient causality in such a way that she realizes her goal. For an Aristotelian this happens in nature as well: natural (non-intelligent) agents have specific powers to exercise efficient (p. 275) causality in view of their ends. In Aristotelian scholasticism, this idea took the form of saying that God had certain ends in view of which he gave creatures powers of efficient causality so that they can serve these ends.

But the scholastics struggled with final causality, and the worries go back at least as far as Avicenna. The late scholastic Francisco Suárez (1548–1617) wrote that 'although the final cause is in some sense the most important one, and is also prior to the other [types of causes] its causality [*ratio causandi*] is also more obscure [than the causality of the other types of causes]'. (dm xxiii.1).<sup>5</sup> The following discussion is heavily indebted to Dennis Des Chene's *Physiologia* and Anneliese Maier's 'Das Problem der Finalkausalität um 1320'.<sup>6</sup> I will pay special attention to Francisco Suárez. Suárez is particularly useful for understanding the scholastic background to the early moderns, since he systematically summarizes earlier discussions, he was very influential in the early modern period, and was sometimes cited by Leibniz.

An important question about final causation was how an end can exercise causality since it often does not (yet) exist. From early on philosophers espoused the idea that final causation requires knowledge of the end by an intelligent agent. This gave rise to the idea that it is the end as known by an intelligent agent, that is, the representation of the end by the agent, that exercises final causality, a view adopted by Avicenna. Averroes objected, however, that the end as known is not what one aims for, rather the form in reality is what one aims to achieve.<sup>7</sup> I aim for a really existing paper on Leibniz, not merely a paper that exists in my thought.

As Suárez's discussion illustrates, the central case of final causation was the case of created intelligent agents, and, he writes, the best-known case is ours, so he focuses on that case.<sup>8</sup> Suárez raises the question whether final causation applies beyond the case of created intelligent agents to God, on one hand, and to non-intelligent agents, which have no knowledge of ends, (p. 276) on the other hand. For our concerns the case of natural, i.e. non-intelligent, agents is the one that matters.<sup>9</sup>

As was common among the scholastics, Suárez included final causes in the explanation of natural phenomena (as opposed to the actions of created intelligent agents) in virtue of God's plans. Suárez relies on a widely used analogy with the role of an archer in making an arrow go for its target: 'natural agents are not so much said to act for an end, as being directed to an end by a superior agent',<sup>10</sup> and

There is no proper final causation in actions insofar as they come from natural agents, but only a tendency [*habitus*] to a certain endpoint [*terminus*], but insofar as they come from God there is final causality in them, insofar as there is in other external and *transeunt* actions of God. For the adequate principle of these actions is not only the proximate natural agent, except insofar as *secundum quid* namely in such an order; but the absolute principle is the first cause; therefore the adequate principle of such actions includes the intellectual cause intending their end.<sup>11</sup>

So, since for Suárez final causality requires an intelligent agent, in the case of natural, non-intelligent agents the final cause of the effects they produce does not lie simply in these agents but includes God's intentions in virtue of which ends exercise final causality.<sup>12</sup>

(p. 277) Suárez also makes clear the intimate connection between final and efficient causes in this interesting passage. Final causation accounts for the orderliness of nature, its regular natural behavior, Suárez explains: 'in virtue of its natural motion a stone is carried down, fire always heats, from different kinds of seeds different living beings are produced'.<sup>13</sup> Various natural properties flow from (*dimanatio*) the substantial form of a natural being, from its substantial form, as a result of 'an efficient cause which

is subordinate to a final cause'.<sup>14</sup> For Suárez, creatures produce these characteristic operations through efficient causality, and they have been given the powers to produce these operations in view of certain ends intended by God.

The requirement of intelligence rather than mere cognition within scholasticism is striking. As we shall see in a moment, Descartes sometimes charged that end-directedness in an agent implies that the agent have cognition, but he did not make the stronger charge that it implies that the agent has intelligence. Why did the scholastics require intelligence? What about animals, can't they act in view of ends simply by knowing these ends even if they are not intelligent? One reason seems to lie in the following consideration: animals may have cognition of something that is an end of their action, but they cannot see an end as an end, and they cannot judge that something is good: full-blown final causality requires both.<sup>15</sup> Suárez noted that animals always use the same means towards an end, and this means they cannot exercise full-blown final causality.<sup>16</sup> No doubt he thought it means they did not deliberate, but act by natural necessity.

So the teleological nature of this picture consists in two stages for natural agents: (1) full-blown teleology requires cognition of ends by an intelligent agent, and God fulfils this role; (2) God places powers to achieve his ends in the natural agents. That means that these agents are endowed with immanent teleology: they are internally directed at ends. Indeed, for Aquinas and others efficient causation essentially involves such internal (p. 278) directedness: it is crucial that a causal power is a power to do something in particular, and thus the final cause is essential to the efficient cause:

The efficient cause is the cause of the final cause inasmuch as it makes the final cause be, because by causing motion the efficient cause brings about the final cause. But the final cause is the cause of the efficient cause, not in the sense that it makes it be, but inasmuch as it is the reason for the causality of the efficient cause. For an efficient cause is a cause inasmuch as it acts, and acts only because of the final cause. Hence the efficient cause derives its causality from the final cause.<sup>17</sup>

Now the movement of every agent tends to something determinate: since it is not from any power that any action proceeds, but heating proceeds from heat, and cooling from cold; wherefore actions are differentiated by their active principles. Action sometimes terminates in something made, for instance building terminates in a house, healing ends in health: while sometimes it does not so terminate, for instance, understanding and sensation. And if action terminates in something made, the movement of the agent tends by that action towards that thing made: while if it does not terminate in something made, the

movement of the agent tends to the action itself. It follows therefore that every agent intends an end while acting, which end is sometimes the action itself, sometimes a thing made by the action.<sup>18</sup>

So an efficient causal power is inherently directed at something, an idea that is fundamental to the understanding of natural change as transitions from potency to act.

Descartes, however, thought that natural agents having such directed powers requires that they have cognition. In the Sixth Replies he explained this point in particular for the notion of heaviness, the tendency a body has to go down. This notion, he contends, is taken from the idea of the mind in several respects. The relevant part for our purposes is this:

But what makes it especially clear that my idea of heaviness was taken partly from the idea I had of the mind is the fact that I thought it carried bodies towards the center of the earth, as if it had some cognition of it within itself. For this surely could not happen without knowledge, and there can be no knowledge except in a mind.<sup>19</sup>

(p. 279) So Descartes claims that attributing heaviness to bodies means ascribing knowledge to them, knowledge of where they are supposed to go. The heaviness in virtue of which bodies have a tendency to go down according to the Aristotelians is thus an anthropomorphic quality, in Descartes's view.<sup>20</sup> He does not talk about final causation explicitly here, but he is taking on an understanding of heaviness as a quality that operates by directing a body at an end, a place where it is supposed to go.<sup>21</sup>

In sum, the scholastic and Cartesian background strongly suggest that final causation requires mentality: full-blown teleology requires intelligence according to the scholastics. Furthermore, the immanent teleology they attribute to natural, non-intelligent agents requires cognition according to Descartes. Finally, this immanent teleology is required for efficient causality on a scholastic understanding of such causality. On this understanding an agent has efficient causality in virtue of powers to achieve specific ends. Putting these points together: an agent exercising efficient causality implies cognition.

## 2. Final Causes and Cognition in Leibniz

In the realm of bodies Leibniz's views relate to this historical background in the first place in a fairly straightforward manner. Descartes had argued that we should not discuss final causation in natural philosophy because doing so involves investigating God's purposes and these are unknown to us (*Principles of Philosophy* I.28).<sup>22</sup> Leibniz agreed with Descartes that (p. 280) bodily phenomena can, and indeed, should, be explained in terms of the laws of efficient mechanical causation. But the origin of these



laws, he claims repeatedly, lies in final causes: they were chosen by God in view of his purposes, and so they are subordinate to God's ends.<sup>23</sup> And Leibniz rejected Descartes's claim of the epistemic inaccessibility of divine purposes, and agreed with, for instance, Boyle on this issue. Indeed, he argued that considering purposes can actually be helpful in determining what the mechanical laws of nature are. For instance, he claimed that Snell had discovered his law of refraction by considering final causes.<sup>24</sup>

So Leibniz does relate final causes to the realm of bodies, although their role is indirect; God's purposes explain what mechanical laws obtain, but explanations in the bodily realm run in mechanistic terms. And Leibniz's view bears a clear similarity to the scholastic picture, on which natural agents get their powers to produce and tendencies to certain ends from God in view of his purposes. For Leibniz, mechanical laws are chosen by God in view of his purposes. This similarity between the two views is a bit superficial, however, because it does not yet address the Cartesian criticism of immanent teleology. The scholastic picture included immanent teleology in natural agents, for Descartes immanent teleology implies knowledge on the part of the agent and so he denied immanent teleology in bodily agents. What is Leibniz's stance on this issue?

This question is answered, I believe, in the course of Leibniz's criticism of Descartes's conception of material substance as essentially extended and utterly passive. Leibniz argued that this conception of material substance is unsatisfactory, and needs to be supplemented with a notion of force. I will argue that the way Leibniz develops this criticism means that he accepted the Aristotelian idea that a genuine efficiently causal power is directed at ends, and that he accepted Descartes's claim that internal directedness at ends implies knowledge on the part of the agent. But, unlike Descartes, Leibniz thought that we need to accept such powers, forces, both to explain bodily occurrences and in view of the requirements for substancehood. He thinks this means we have to go beyond the strictly material and appeal to substantial forms or monads, which are cognizing entities.

(p. 281) This interpretation requires that perceptions are cognitions, and monads genuine mental beings. Some interpreters have questioned this view. For instance, according to Robert McRae, in the absence of consciousness, perception does not count as cognition. John Carriero argues for an interpretation of Leibniz's notion of substance that emphasizes the importance of *activity* for this notion as opposed to mentality. He contends that teleology is crucial, but not cognition, and thinks that for Leibniz the final causality of monads does not involve cognition.<sup>25</sup> But, in my view, for Leibniz activity and mentality are connected. In this section I will first defend the view that Leibniz did see perceptions and consequently monads as mental, then I will return to the question of force and its connection with cognition. One way to recognize that

Leibniz saw perceptions as mental is by focusing on the fact that monads are modeled on the human soul or mind. An additional reason derives from Leibniz's connecting perception to simplicity.

(p. 282 ) Leibniz's notion of the monad evolved from his resurrection of the notion of substantial form, his most prominent and most central scholastic import. He argued that this notion was necessary to supplement the Cartesian notion of matter, which by itself he deemed unsatisfactory on both metaphysical and scientific grounds.<sup>26</sup> He explains some of the central metaphysical ideas of his critique in the following passage from the *New System*:

I perceived that it is impossible to find the principles of a true unity in matter alone, or in what is only passive, since everything in it is only a collection or aggregation of parts to infinity. Therefore in order to find these real entities I was forced to have recourse to a formal atom, since a material thing cannot be both material and, at the same time, perfectly indivisible, that is, endowed with a true unity. Hence it was necessary to restore, and is it were, to rehabilitate the substantial forms which are in such disrepute today, but in a way that would render them intelligible, and separate the use one should make of them from the abuse that has been made of them. I found then that their nature consists in force, and that from this there follows something analogous to sensation and appetite, so that we must conceive of them on the model of the notions we have of souls.<sup>27</sup>

Leibniz emphasizes here his view that we need recourse to something other than Cartesian matter because we need genuine unities, but he also mentions his other main reason for going beyond such matter: the need for something active. Indeed, he presents unity and activity as connected: he writes that something that is passive cannot have real unity. Both needs can be fulfilled by the notion of substantial form, he claims; a cleaned#up version of this notion provides us with an entity that can generate genuine unity by being indivisible and that is active.

From a historical perspective, Leibniz's use of the notion of substantial form does not immediately suggest he is talking about mental substances: on the contrary. In the Aristotelian tradition, at most some substantial forms are subjects of mental states: humans have substantial forms but so do animals, plants, and mixed bodies like gold and the elements. Leibniz is in line with this tradition when he argues that we need the notion of substantial form to generate corporeal substances as opposed to material (p. 283 ) beings that are mere aggregates. But he departs from the Aristotelians when he explicitly models substantial forms on the human soul, as when he writes to Arnauld that we need 'a soul or substantial form on the model of what we call "me" [une âme



ou forme substantielle à l'exemple de ce qu'on appelle moi]'.<sup>28</sup> And in the draft of the *New System*: 'what makes a corporeal substance must be something that corresponds to what is called "me" in us, what is indivisible and yet active'.<sup>29</sup> Furthermore, he focuses on features of the human soul that distinguish it from other substantial forms when he writes that the cleaned#up version of the notion of substantial form he wishes to use 'consists in force, and that from this there follows something analogous to sensation and appetite'.

What is more, it is worth noting that this approach means that from an Aristotelian scholastic perspective he uses a rather peculiar version of the notion of substantial form. From that perspective the human soul was an atypical, marginal type of substantial form. In the Aristotelian scholastic tradition, regular substantial forms are intrinsic constituents of substances—they can't exist separately—that is to say, they cannot exist without existing as a constituent of substances. The human soul is the only substantial form that has the capacity to exist apart, and this was important for the religious commitment to the survival of the soul after the death of the body. Aquinas and others defended its special status on the ground that the human intellectual soul has an activity that it performs without that action being an action of a bodily, ensouled organ.<sup>30</sup> Averroes had used the special nature of the human intellect to argue that the human intellectual soul cannot be the form of the body. Aquinas and others clearly felt a need to defend the possibility of such a substantial form.<sup>31</sup> These features of Aquinas's view of the human soul were often shared by seventeenth#century scholastics, including Suárez.<sup>32</sup>

The dispute with Averroes gave rise to the verdict by the Lateran Council of 1513 that philosophers should argue that the rational soul is the (p. 284 ) form of the body, a decree Leibniz cites.<sup>33</sup> The Council was concerned not with the preservation of the traditional Aristotelian notion of substantial form but with the human soul's individuality and immortality. The verdict was issued in response to the Averroist view that the human intellect is not part of the human soul, of the form of the body. Averroes had inferred that there is only one intellect for all human beings and this posed a threat to individual immortality.<sup>34</sup> Descartes too cited this verdict by the Council, focusing explicitly on its demand that philosophers show the immortality of the human soul.

Leibniz's use of the human soul as the model for the substantial soul is surprising from an Aristotelian perspective, but it is not surprising in relation to Descartes, who sometimes labeled the human soul the only substantial form.<sup>35</sup> Leibniz sees himself as following Descartes in various ways on this issue, although he criticizes Descartes's restriction of substantial form to humans alone.<sup>36</sup> As Robert Adams argues, other early moderns also used the notion of substantial form in Descartes's way, and so Leibniz's use of a notion of substantial form where the human soul is its model amounts to an

early modern interpretation of this notion.<sup>37</sup> In sum, by the time we get to Leibniz, the human soul has gone from marginal substantial form to the model of substantial form.

So now the question is this: *in what sense exactly* is the human soul the model for substantial form for Leibniz? He did not think that all substantial forms, and, later, all monads, are *exactly* like human souls: human souls, or minds, are special, because they have intelligence and free will, and not all monads have consciousness. When he explains in what sense the (p. 285) human soul serves as a model, he sometimes argues that substantial forms in his system will have something *analogous to* sensation and appetite (*New System*, IV 479/AG 139, *On nature Itself*, G IV . . . AG 163).<sup>38</sup> In later texts he writes that all monads—the notion that evolves out of substantial forms—are characterized by perceptions and appetites *tout court*—without the qualification ‘analogous’.<sup>39</sup> So the human soul’s mental states are crucial to it being the model of the substantial form—in a relatively broad sense of mental that does not imply intelligence or consciousness.<sup>40</sup>

One might still hesitate to regard Leibnizian perceptions as mental, given that he denies that perception and appetite are always characterized by consciousness. On the other hand, the mere denial of consciousness does not obviously disqualify perception as cognition; Descartes has often been criticized for a failure to leave room for unconscious mental states. Indeed, Leibniz’s own criticisms of Descartes on the ground that he failed to acknowledge unconscious perceptions would fall flat if (unconscious) perceptions were not in the end for him mental states. And it seems puzzling for him to speak of *perceptions* if he did not regard them as mental. My view is that perceptions are mental by being representational rather than conscious, but I will not defend this view here.<sup>41</sup> A full discussion of Leibniz’s conception of the mental goes beyond the scope of this paper. I will now turn to the role of the notion of simplicity.

As we saw, one of the main reasons Leibniz adopted substantial forms was the need for entities that have genuine unity, which for him results (p. 286) in a requirement of simple entities, which are the monads.<sup>42</sup> He describes perception as a type of expression, a prominent notion in his work. Body and soul express each other, for instance, and this example shows that expression is a term that does not connote the mental. But, as various commentators have noted, what makes perception a special type of expression is a connection with simplicity.<sup>43</sup> I will argue that given the historical context this connection with simplicity is a strong indication that he conceives of the perceiving monad as mental.

Leibniz explicitly connects simplicity and perception in a number of passages, quite prominently and repeatedly in the *Monadology*. There he defined perception in terms of its belonging to a simple substance: ‘The passing state that contains [*envelope*] and represents a multitude in a unity or in a simple substance is nothing other than what

one calls perception, which one must distinguish from apperception or consciousness as will become clear in what follows'.<sup>44</sup> We find the connection again in the well-known mill passage at *Monadology* 17, where Leibniz argues that perceptions cannot be explained mechanistically. He illustrates the point by asking us to imagine a thinking machine large enough so that you can walk into it, as into a mill. He claims that you would not find anything that explains perception, only mechanical states. Perceptions, he claims, requires a *simple* substance.<sup>45</sup>

In the historical context, this connection with simplicity strongly suggests that he thinks of substantial forms, monads, and perception as mental. In the Aristotelian tradition substantial forms were not generally simple, but the atypical human soul was. In late scholasticism the substantial forms of inanimate substances, and the souls of plants and lower animals, were supposed to be divisible. Human souls were regarded as indivisible, and there was controversy about the souls of the higher animals.<sup>46</sup> So indivisibility (p. 287) was not a feature of substantial forms generally, but only of certain types of souls, most uncontroversially of the human soul.<sup>47</sup> So we see now a further sense in which for Leibniz the human soul was the model for the substantial form and the monad: its simplicity.

Furthermore, the connection between simplicity and the mental is even stronger outside the Aristotelian scholastic context. The idea that the human mind or soul is simple was widespread among non-Aristotelian early modern thinkers. Indeed, there is a rich history of arguments from the nature of the mental to the simplicity of the human soul and to its immateriality and immortality. Such arguments go back to Plotinus, and its central ideas have their roots in Plato, in particular his *Phaedo*, a work Leibniz cherished. The best-known discussion of a version of the argument occurs when Kant criticizes it in the Second Paralogism, while labeling it the 'Achilles of all dialectical inferences in the pure doctrine of the soul'.<sup>48</sup> According to this 'Achilles Argument', the unification and connection of mental contents requires a simple subject. In Kant's version the subject of thought must be simple, otherwise the parts of a thought would be scattered over the parts of the subject and nothing would think the entire thought. A version of the Achilles Argument occurs in a correspondence between Samuel Clarke and Anthony Collins, and provoked approval from Leibniz, who, indeed, himself had offered a version of the argument in an early work.<sup>49</sup>

(p. 288) Relating Leibniz to this tradition is not an entirely simple matter, and this aspect of his thought involves both terminological and substantive differences with other early moderns. As we saw, unlike Descartes, Leibniz held that souls or substantial forms can be found not just in humans but everywhere in nature. He reserved the term 'mind' for human souls and while Descartes used the term 'thought' for the entire spectrum of mental states Leibniz tended to use the term 'thought' for an intellectual

type of perception peculiar to minds. Another important difference lies in Leibniz's rejection of Descartes's view that all perceptions are conscious,<sup>50</sup> and he thought only some are intellectual.

It is tempting to think of the Achilles Argument as turning on the notion of consciousness, or on intellectual types of thought, so that it would be problematic to relate Leibniz's requirement of a simple subject for perception generally to the Achilles Argument. This would be a mistake. First, the argument predates the early modern period and its notion of consciousness. Furthermore, statements of the argument in the period did not confine themselves to consciousness or intellectual thought. Clarke stated the argument in terms of consciousness and thought, but he made clear that he had a very broad notion of the mental in mind.<sup>51</sup> Pierre Bayle discusses a version of the Achilles Argument that focuses not on intellectual but on sensory states: 'For if a thinking substance was unified only in the way a sphere is, it would never see a whole tree at once; it would never feel the pain produced by the blow of a stick.'<sup>52</sup>

(p. 289) So Leibniz's view that perception is representation of a multiplicity in a unity, and that, indeed, it requires a simple being for its subject is part of a rich history of such views about the nature of the mental. This constitutes a very strong indication that he saw perception in general, and not just thought, as mental. In sum, there are strong reasons for interpreting Leibniz as conceiving of perception as mental.

We are now ready to turn to the relationship between efficient causality and mentality. In arguing against occasionalism Leibniz writes that we must admit that 'a certain efficacy has been placed in things, a form or force'.<sup>53</sup> So Leibniz links causal efficacy to force, and he explicitly connects force and perception. As we saw, he writes in the *New System* that the nature of substantial forms 'consists in force, and that from this follows something analogous to sensation and appetite; and hence we must conceive of them on the model of the notion that we have of souls'.<sup>54</sup> And we saw that in later related texts he leaves out the qualification 'analogous'. So Leibniz thinks force involves sensation and appetite, types of mental states.

Leibniz's recourse to substantial forms understood mentalistically makes sense in light of the Cartesian claim that immanent finality implies cognition. For Leibniz, genuine causal activity requires force, which he characterizes as a striving, *nisus*, *conatus*, *effort*, for an effect. So force implies immanent finality, and for this reason it implies perception and appetite.<sup>55</sup> This is why an appeal to force requires going beyond the physical to substantial forms modeled on the human soul.

Another aspect of the Cartesian background that helps explain this line of thought is the Cartesian conception of matter as utterly passive, which was grounded in the conception of the essence of matter as extension. Descartes himself is often thought not to ascribe

any causal power to matter as a result. I do not agree with this interpretation, but it is clear that this view was often adopted by his successors. For Malebranche, creatures in general have no genuine causal power. The idea that matter is passive played a significant role in his arguments; matter is disqualified from causal efficacy by virtue of its very nature, which is passive, whereas mind is disqualified (p. 290) for other reasons.<sup>56</sup> Leibniz agrees that matter as extension is purely passive. He argues that we need to add the notion of force and, as a result of assuming that matter is purely passive, he conceives of force mentalistically. Thus the following picture emerges: for Leibniz genuine causal activity, force, is teleological and mental.

### 3. The Separation of Final and Efficient Causality

This leaves us with the question why Leibniz repeatedly suggests that the realm of monads is the realm of final causation only. If this were really Leibniz's view, then for him final causation would in fact be more fundamental than efficient causality, since monads are more fundamental than bodies, which are merely (well#founded) phenomena. Indeed, perhaps the only real causality is final causality: bodies are mere phenomena grounded in monads, and Leibniz holds that the laws of motion refer to forces, which ultimately are features of monads. Perhaps efficient causality is a notion one can use when speaking of the laws of nature, the regularities of the bodily world, but it does not refer to any type of *real causal power*, at least not a real causal power within the created world. That would be a very striking result. A version of this view has been defended by Sukjae Lee, who argues that there is no room for genuine efficient causality in creatures for Leibniz on the ground that all efficient causality resides in God.<sup>57</sup> But there is good reason to think that Leibniz did not exclude efficient causation from the realm of monads.

On two occasions, to my knowledge, Leibniz addresses the relationship between final and efficient causality, both are lesser#known texts. In *Specimen demonstrationum Catholicarum seu Apologia Fidei ex Ratione, Specimen of Catholic demonstrations of an Apology of the Faith from Reason* (dated c. 1685) he writes: 'I maintain that even final causes can be referred to efficient causes [*causas finales referri posse ad efficientes*], namely when the agent is intelligent, for then it is moved by the thought, and even moral causes are (p. 291) natural causes for they are of the nature of the mind'.<sup>58</sup> This is not a context in which Leibniz is focusing on monads, and, indeed, it is a text from the middle years where Leibniz's monadological views were not yet in full view. So we should not take Leibniz to claim that only intelligent monads as opposed to non#intelligent ones are subject to efficient causality. Rather, the context is one where he is addressing the view that final causes must not be attributed to nature and that they are not natural but made up by us. Since this text is not focused on the monadic level

it is not as clearly useful for our purposes as the following passage, from the *Notes on Stahl*, dated 1704:

[T]he present state of body is born from the preceding state through the laws of efficient causes, the present state of the soul is born from its preceding state through the laws of final causes. The one is the place of the series of motion, the other of the series of appetites; the one is passed from cause to effect, the other from end to means. And in fact, it may be said that the representation of the end in the soul is the efficient cause of the representation in the same soul of the means [*et revera dici potest, repraesentationem finis in anima causam efficientem esse repraesentationis mediorum in eadem*]<sup>59</sup>

This text addresses our question head on: Leibniz starts by stating the separation of the two realms of causes, then adds that in fact efficient causes do apply in the realm of souls: he presents the representation of an end as an efficient cause.<sup>60</sup>

(p. 292 ) Furthermore, Leibniz's arguments for substantial forms suggest that his going beyond body to the level of substantial forms and monads involves attributing efficient causality to that level. When Leibniz introduces substantial forms as force in the draft of the *New System*, he indicates that he is speaking of efficient causality: 'thus I find that the efficient cause of physical actions derives from metaphysics'.<sup>61</sup> And Leibniz's criticism of occasionalism in *De ipse natura* also makes it clear that the notion of force involves efficient causality. He objects as follows to the occasionalist view that the motions that now occur are the result of an eternal law decreed by God, a divine volition or command, and not at all of creaturely powers:

Since that past command does not now exist, it cannot now bring anything about unless it left behind some subsistent effect at the time, an effect that even now endures and is at work . . . And indeed, it contradicts the notion of the pure and absolute divine power and will to suppose that God wills and yet produces or changes nothing through willing, to suppose that he always acts but never accomplishes anything and leaves behind no work or accomplishment at all.<sup>62</sup>

In Leibniz's own view, God's volition 'left some trace of itself impressed on things' and that means that 'we must admit that a certain efficacy has been placed in things, a form or force, something like what we usually call by the name of "nature", something from which the series of phenomena follow in accordance with the prescript of the first command'. But this force is what Leibniz thinks is the cleaned#up version of a substantial form. Now, if Leibniz thinks that this force only acts through final causality, the argument would be subject to an odd twist, where, without warning, he moves from the occasionalist denial of efficient causality to an affirmation of final causality.



The most natural way to interpret this argument is that it is about efficient causality throughout, and so the conclusion is that forces or forms produce their effects through efficient causality.

But now the following question arises: if Leibniz allows for efficient causes at the level of monads and gives a role to final causes in the realm of (p. 293) bodies by way of God's purposes, why does he so often separate the two realms? The exclusion of final causes from the bodily realm makes sense in that actual explanations must be formulated in terms of mechanical, efficient causes; the role of final causes is indirect. But what about the repeated exclusion of efficient causes from the realm of bodies? Robert Adams has suggested that Leibniz meant to deny *mechanical* causation at the level of monads, but not efficient causality more generally.<sup>63</sup> And, indeed, this seems implicit in one of Leibniz's restatements of the pre-established harmony: 'I have shown that everything in body takes place through shape and motion, everything in souls through perception and appetite; that in the latter there is a kingdom of final causes, in the former a kingdom of efficient causes . . .'.<sup>64</sup> But perhaps this is not all there is to the story, unless we take Leibniz to overstate his point. Donald Rutherford writes that *explanations* at the level of bodies run in terms of efficient causes, at the level of monads in terms of final causes. Sometimes Leibniz states the point in terms of laws, and this gives us another clue: the regularities that apply in the realm of bodies fall by their nature in the realm of efficient causes. Mechanistic laws describe how mechanical events produce other mechanical events. But in the realm of monads the laws run in terms of final causes: a monad proceeds from perception to perception by way of laws about 'appetitions, ends and means', as he puts it in the *Monadology*.

Leibniz's model is voluntary action, where an intelligent agent acts on a desire for a certain result and perceives her ends as good. Leibnizian monads do not generally engage in full-blown voluntary action. Much of what happens even in an intelligent monad does not reach that level; for Leibniz only some of my perceptions are conscious and intelligent. Nevertheless he wants to apply the model of final causation across the board. How should we understand this?<sup>65</sup> I would suggest the following. For voluntary action, full-blown final causality applies to the monads themselves in virtue of *their* knowledge of ends. But elsewhere only 'nature teleology' applies where God's knowledge of ends is part of the account.<sup>66</sup> 'Natural teleology' is like the activity of Aristotelian natural agents. The monad strives for (p. 294) ends and has immanent teleology. In line with Descartes's analysis of immanent teleology, according to Leibniz, it has perception, cognition of the ends—but not *as* ends or good.

## Conclusion

Leibniz is remarkable among early moderns for the important place he gave to final causation in his system. He stands in contrast with Descartes when he agreed with the Aristotelian scholastics and other early moderns who regarded God's purposes as relevant for understanding nature. But Leibniz went further than other early moderns: like the Aristotelians, he saw immanent teleology as fundamental to understanding the true nature of genuine causal activity, and he accepted Descartes's claim that immanent teleology requires cognition.<sup>67</sup>

### Notes:

(1) M 79. References to Leibniz should be understood as follows. (Dut.) stands for L. Dutens (ed.), Leibniz, *Opera Omnia* (6 vols.; Geneva, 1768); (M) for *Monadology*; (PNG) for *Principles of Nature and Grace*; (NE) for *New Essays*. References to Leibniz's work in the original languages can mostly be found in *Die Philosophischen Schriften von Gottfried Wilhelm Leibniz*, ed. C. I. Gerhardt, 7 vols. (Berlin: Wiedmann, 1875–90; repr. Hildesheim: Georg Olms, 1978) (G). Translations can be found in *Philosophical Essays*, ed. Roger Ariew and Daniel Garber (Indianapolis, Ind: Hackett, 1989) (AG); *Philosophical Papers and Letters*, ed. Leroy E. Loemker (Dordrecht: Reidel, 1969) (L); and *Leibniz's 'New System' and Associated Contemporary Texts*, ed. and trans. R. S. Woolhouse and Richard Francks (Oxford: Clarendon Press, 1997) (WF).

(2) PNG 3; see also Fifth Letter to Clarke, G, viii. 419/L, 716–17.

(3) I take the term 'immanent teleology' from Margaret Osler. She argues against the understanding of early modern mechanists as systematically rejecting final causation. See her 'From Immanent Natures to Nature as Artifice: The Reinterpretation of Final Causes in Seventeenth-Century Natural Philosophy', *Monist*, 79 (1996), 388–408, and 'Whose Ends? Teleology in Early Modern Natural Philosophy', *Osiris*, 16 (2001), 151–68.

(4) In the literature on Leibniz there has been intense controversy over the last two decades concerning the question whether during his middle years, roughly 1684–1704, Leibniz accepted the reality of corporeal substances of an Aristotelian type: composites of matter and substantial form. If so, for this period the familiar idealist interpretation according to which only monads are fundamentally real would not be accurate. The discussion was ignited by Daniel Garber, who favors the Aristotelian interpretation. See his 'Leibniz and the Foundations of Physics: The Middle Years', in Kathleen Okruhlik and J. R. Brown, *The Natural Philosophy of Leibniz* (Dordrecht: Reidel, 1985), 27–130. For defenses of the idealist interpretation, see, for instance, Robert M. Adams,

*Leibniz: Determinist, Theist, Idealist* (New York: Oxford University Press, 1994); and R. C. Sleigh, Jr., *Leibniz and Arnauld: A Commentary on Their Correspondence* (New Haven, Conn.: Yale University Press, 1990). More recently, some interpreters have argued that Leibniz was a realist about corporeal substances even in his later years (Glenn A. Hartz, *Leibniz's Final System* (London and New York: Routledge, 2007); Pauline Phemister, *Leibniz and the Natural Word: Activity, Passivity and Corporeal Substances in Leibniz's Philosophy* (Dordrecht: Springer, 2005.) My own sympathies lie with the idealist interpretation, but I take my overall argument in this paper to be compatible with (versions of) either.

(5) For the references to Suárez, see his *Disputationes metaphysicae* (DM) in *Opera Omnia*, ed. Charles Berton xxv–xxvi (Paris: Vivès, 1866; repr. Hildesheim: Georg Olms Verlag, 1998), referred to by disputation, section, and article, and his *De anima*, referred to by book, chapter, and section, to be found in *Opera Omnia*, vol. iii.

(6) Des Chene, *Physiologia: Natural Philosophy in Late Aristotelian and Cartesian Thought* (Ithaca, NY: Cornell University Press, 1996), 168–211; Anneliese Maier, 'Das Problem der Finalkausalität um 1320', in *Metaphysische Hintergründe der spätscholastischen Naturphilosophie* (Rome: Storia e letteratura, 1955), 273–335.

(7) Maier, 'Das Problem der Finalkausalität um 1320', 282.

(8) DM, xxiii. 1.8.

(9) Buridan's discussion of final causation deserves special mention. Endorsing the claim that final causation requires knowledge by an intelligent agent he argued that this means that it is the mental state of the agent that really acts as a cause. For Aristotle, when we ask why someone performs a certain action, the answer lies in the effect the agent aims to achieve, and that end is the final cause. According to Buridan, the answer to this question is 'the intention or volition or causes that are prior in being'. 'When it is asked: "On account of what cause [*propter quod causam*] do you go to church?', it must be said that it is because I intend or I want to hear the mass, and "why does the doctor give medicine?" the answer is: "because he wants to heal." ' So it is a mental state in the agent that is the explanation, the cause, and Buridan argues that this mental state is the *efficient*, not the final cause (Maier, 'Das Problem der Finalkausalität um 1320', 310 ff.). In agents other than created intelligent agents, there is no genuine final causality and the orderliness of nature is not due to final causes, according to Buridan. Thus, Maier argues, Buridan eliminated final causality in favor of efficient causality in natural philosophy (*ibid.*, 334–5; see also Des Chene, *Physiologia*, 186–7). Buridan's views resonate in Suárez's discussion of final causation. Suárez argues that final causation is a genuine type of causation, but the list of objection to this view that he offers overlaps

substantially with Buridan's (DM, xxiii. 1.1–6; Maier, 'Das Problem der Finalkausalität um 1320', 301).

(10) DM, xxiii. 10.5.

(11) [Ibid.](#), 10.6.

(12) Des Chene writes that while there was a trend, starting with Ockham, to limit the application of final causation to intelligent agents, in the very late scholastics Des Chene discusses (sixteenth–seventeenth centuries) there was a return to a broader application of final causation that he also attributes to Aquinas (Des Chene, *Physiologia*, 169). He does not explain exactly how Aquinas's application was broader. For Aquinas, too, teleology requires intelligence, in natural agents divine intelligence does the job, as is clear from his argument from the occurrence of final causation in nature to God's existence. See *Summa Theologiae* (ST), I, qu. 2, art. 3: 'Beings that lack knowledge cannot tend towards [*tendunt in*] an end, unless directed by some knowing and intelligent being, as the arrow is directed by the archer. Therefore some intelligent being exists by whom all natural things are directed to their end and this being we call God' (New York: Blackfriars and McGraw#Hill, 1969).

(13) DM, xxiii. 10.3.

(14) [Ibid.](#), 11.7.

(15) Des Chene, *Physiologia*, 194–202.

(16) DM, xxiii. 10.12.

(17) Aquinas, *Commentary on Aristotle's Metaphysics*, n. 775.

(18) [Ibid.](#), *Summa contra gentiles*, 3, Q2.

(19) I use the standard references to Descartes's work by volume and page number. For the texts in the original languages, see *Œuvres de Descartes*, ed. Charles Adam and Paul Tannery, 12 vols. (Paris: Vrin, 1964–74) (AT), vii. 441–2. For translations see *The Philosophical Writings of Descartes*, trans. John Cottingham, Robert Stoothoff, and Dugald Murdoch, 3 vols. (Cambridge: Cambridge University Press, 1985–91) (CSM), ii. 297–8. CSM provides the AT page numbers in the margins.

(20) For discussion of the relation between Descartes's criticism of teleological explanations and Aristotelian scholastic practice, see Des Chene, *Physiologia*, esp., 168–71 and 391–8.

(21) Similar ideas can be found in Boyle. See *The Works of Robert Boyle*, ed. Michael Hunter and Edward B. Davis, 14 vols. (London: Pickering and Chatto, 1999–2000), xi. 110. I owe this reference to Lawrence Carlin; for discussion, see his two unpublished papers on Boyle: 'Final Causes in Robert Boyle: The Question of Immanent Finality' and 'Teleology and Systematization in Boyle's Natural Philosophy'.

(22) *Principles of Philosophy*, i. 28. Descartes does rely on knowledge of God's nature, but not God's purposes in deriving the laws of nature, because he derives the fundamental laws of motion from God's immutability (see *ibid.*, ii. 37–42). So the disagreement between Descartes and Leibniz does not merely lie in a disagreement about epistemic access to God's purposes, since for Descartes God's purposes are not relevant to the laws of motion. For discussion of Descartes and Leibniz on the laws of nature, see in particular Garber, 'Mind, Body, and the Laws of Nature', *Midwest Studies in Philosophy* 8 (1983), 105–33 Leibniz was certainly not the only early modern who disagrees with Descartes about the question whether we should investigate God's purposes in nature. Boyle, for instance, contends that we must do so (*Works*, xi. 81). A failure to do so could lead to a 'loss of benefits relating to Philosophy as well as Piety'.

(23) *Discourse on Metaphysics*, 19–22 (NE, 179); *Specimen dynamicum* (AG, 126); Draft of *New System* (9, iv. 472/WF, 22).

(24) *Discourse on Metaphysics*, 22.

(25) Robert McRae, *Leibniz: Perception, Apperception and Thought* (Toronto: University of Toronto Press, 1976), 24; John Carrier, 'Substance and Ends in Leibniz', in Paul Hoffman, David Owen, and Gideon Yaffe, *Contemporary Perspectives on Early Modern Philosophy: Essays in Honor of Vere Chappell* (Guelph: Broadview Press, 2008). Margaret Wilson raises the question what it means for the states of monads to be perceptions given that they are not conscious ('Confused vs. Distinct Perception in Leibniz: Consciousness, Representation and God's Mind', in her *Ideas and Mechanism: Essays on Early Modern Philosophy* (Princeton, NJ: Princeton University Press, 1999).

In his repeated separation of the two realms of causation Leibniz usually speaks in terms of souls or minds. Minds have intelligence, and sometimes Leibniz offers a restricted use of the term 'soul', according to which a soul has sensation and memory, but not all monads do (M, 19) So one might think that the scope of final causation in these contexts is limited to only a part of the monadic realm. I do not agree, and at PNG, 3 Leibniz states the division of realms in terms of monads rather than souls. The statements in terms of souls should perhaps be read in view of Leibniz using the term 'soul' both in the strict sense noted above, but also in a broader sense where the term refers to all monads, a usage also noted at M, 19.

Robert McRae and Mark Kulstad suggest that Leibniz sometimes limited final causation to voluntary perceptions (McRae, 'Appetition in the Philosophy of Leibniz', 67; Kulstad, 'Appetition in the Philosophy of Leibniz' in Albert Heinekamp, Wolfgang Lenzen, and Martin Schneider (eds.), *Mathesis rationis: Festschrift für Heinrich Schepers* (Münster: Nodis Publikationen, 1990), 146). They refer to Leibniz's comments on Lamy's *De la connaissance de soi-même* where he writes: 'Without relying on the fact that the laws of motion are established in virtue of divine wisdom and are not at all geometrically necessary, it is sufficient to say that perceptions that express the laws of motion are just as connected as those laws, which they express according to the laws of efficient causes. But the order of voluntary perceptions is that of final causes, which conform to the nature of the will' (G, IV 580/WF, 155). McRae and Kulstad take the passage to say that the laws of final causes only apply to voluntary perceptions, and they take the passage to mean that the laws of efficient, mechanical causation apply (in some sense) to all others. I think the passage should not be taken in this way. Leibniz is responding to Lamy's concern about freedom, and so it is not surprising that he should limit himself to noting that voluntary perceptions fall under the order of final causes. Consequently the passage does not clearly have the implications McRae and Kulstad attribute to it.

(26) I will leave the scientific issues aside. Leibniz argued that the Cartesian conception of matter with its focus on motion as opposed to force gets the laws of mechanics wrong. See, for instance, *Discourse on Metaphysics*, 17.

(27) G, iv. 478/AG, 139.

(28) G, ii. 76/AG, 79.

(29) G, iv. 473/WF, 23.

(30) ST, I. 75.2.

(31) Aquinas addresses this anomalous feature of the human soul as substantial form, and argues that while the human soul can exist separately its *natural* place is in union with the body, just like a light body's natural place is up, even if it may happen to be down (ST I.76.1, ad 6).

(32) I discuss these issues also in my *Descartes's Dualism* (Cambridge, Mass.: Harvard University Press, 1998), chs. 2 and 5, and in relation to Leibniz in 'Leibniz on the Union of Body and Soul', *Archiv für Geschichte der Philosophie*, 79 (1997), 150–78.

(33) G, ii. 75/AG, 78.

(34) For the pronouncement by the Lateran Council, see Henrich Denzinger, *Enchiridion symbolorum, definitionum et declarationum de rebus fidei et morum*



(Freiburg: Herder, 2005), 482–3, arts. 1440–1, and 390, art. 901. The issues that provoked these statements from the Lateran Council are discussed in detail in Étienne Gilson, 'Autour de Pomponazzi: problématique de l'immortalité de l'âme en Italie au début du xvi<sup>e</sup> siècle'; and id., 'L'affaire de l'immortalité de l'âme à Venise au début du xvi<sup>e</sup> siècle', in his *Humanisme et Renaissance* (Paris: Vrin, 1983). See also Eckhard Kessler, 'The Intellectual Soul', in Charles B. Schmitt, Quentin Skinner, Eckhard Kessler, and Jill Kraye (eds.), *The Cambridge History of Renaissance Philosophy* (Cambridge: Cambridge University Press, 1988), 500–7.

(35) AT, vii. 356/CSM, ii. 246; AT, iii. 503, 505/CSM, iii 207–8; AT iv. 346/CSM, iii. 279. For discussion of Descartes's use of the notion of substantial form, see Paul Hoffman, 'The Unity of Descartes's Man', *Philosophical Review*, 95 (1986), 339–70; Rozemond, *Descartes's Dualism*, chs. 4–5.

(36) LA, 113; NE, 317–18; G, vi. 547.

(37) Robert Adams discusses in particular Boyle and Cudworth (Adams, *Leibniz: Determinist, Theist, Idealist*, 319–24).

(38) In a letter to De Volder, Leibniz's statement suggests a possible bridge between the two types of phrasing. First, he writes: 'It is worthwhile to consider, however, that there is a maximum intelligibility in this principle of Action, because there is something in it analogous to what is in us, namely perception and appetite, since the nature of things is uniform and our nature cannot differ infinitely from the other simple substances of which the whole Universe consists' (G, ii. 270/L, 537). Now Leibniz does not qualify the application of the labels 'perception' and 'appetite' to monads other than human souls; he calls them perception and 'appetite' *tout court*, but labels them analogous to what is in us. Later in the passage he writes: 'Considering the matter accurately, moreover, it must be said that there is nothing in things except simple substances and in them perception and appetite.' So maybe Leibniz came to think one could call what exists in all monads perceptions and appetites without qualification, and so monads are analogous to our souls in this sense, but of course in his view not all are conscious or intellectual.

(39) M, 14; PNG, 3.

(40) This use of the term 'mental' deviates from Leibniz's own in so far as he reserved the term 'minds' for human souls.

(41) For a defense of the view that perceptions are representational for Leibniz, see Alison Simmons, 'Changing the Cartesian Mind: Leibniz on Sensation, Representation and Consciousness', *Philosophical Review*, 110 (2001), 31–75. Simmons spends little

time explaining what representationality means. I think for Leibniz perceptions are intrinsically representational, that is, not merely in virtue of relations to the objects represented.

(42) Some recent interpreters have suggested that not just monads (in the sense in which this notion is usually understood) but also corporeal substances, which include monads as their constituents, are simple and indivisible for Leibniz (see Hartz, *Leibniz's Final System*, 190–1; Phemister, *Leibniz and the Natural Word*, 74–5). I believe the response to this position requires a proper analysis of relevant types of simplicity. I cannot undertake to offer such an analysis here, however.

(43) See McRae, 'Appetition in the Philosophy of Leibniz', 24; Simmons 'Changing the Cartesian Mind', 42. Simmons offers some analysis of what the connection with simplicity means.

(44) *Monadology*, 14; see also *ibid.*, 16.

(45) For discussion of this passage, and simplicity and perception more generally in Leibniz, see Marc Bobro and Paul Lodge, 'Stepping Back Inside Leibniz's Mill', *Monist*, 81 (1998), 554–73.

(46) For a useful discussion, see Des Chene, *Life's Form: Late Aristotelian Conceptions of the Soul* (Ithaca, NY: Cornell University Press, 2000), 171–89. The divisibility of the souls of plants and lower animals was illustrated by various phenomena: in the case of plants the fact that a cutting from a tree can live and produce foliage, in the case of lower animals the example of a worm that continues to manifest life after being cut (Suárez, *De anima*, I.XIII, 2, 3).

(47) In the *New System* Leibniz writes that he remembers Aquinas saying that the souls of animals are indivisible. 'I saw that these forms and souls must be indivisible just like our mind, as in fact I remember was S. Thomas' opinion concerning the souls of beasts' (G, iv. 479/AG, 139). Earlier, in a letter to Arnauld, Leibniz had written that Aquinas said that substantial forms in general are indivisible; as Garber and Ariew note in their translation, this was probably not accurate. And now in the *New System* the focus is on a subset of substantial forms. But, on the other hand, Leibniz does not say that Aquinas held that the *human* soul is indivisible, it is the souls of animals. In a sense this fits the picture as I see it: Leibniz wants to be more generous than Descartes about substantial forms: humans are not the only ones who have them, and consciousness is not required.

(48) *Critique of Pure Reason*, A351.

(49) *Correspondance Leibniz–Clarke présentée d'après les manuscrits originaux des bibliothèques de Hanovre et de Londres*, ed. A. Robinet (Paris: Presses universitaires de France, 1957), 32. For Leibniz's early Achilles Argument, see his 'The Immortality of the Human Mind, Demonstrated in a Continuous Sorites', which is part of *The Confession of Nature against Atheists*, of 1669 (G, iv. 109–10/L, 113). For discussion of the history of the Achilles Argument, see Ben Lazare Mijuscovic, *The Achilles of Rational Arguments* (The Hague: Martinus Nijhoff, 1974); and T. Lennon and R. Stainton (eds.), *The Achilles of Rational Psychology* (Dordrecht: Springer, forthcoming). For Clarke's use of the argument, see my 'The Achilles Argument and the Nature of Matter in the Clarke–Collins Correspondence', *ibid.*; and 'Can Matter Think? The Mind–Body Problem in the Clarke–Collins Correspondence', in Jon Miller (ed.), *Topics in Early Modern Philosophy of Mind* (Dordrecht: Springer, forthcoming). On a different version of this argument, the simplicity of the subject is not inferred from the connections between mental contents but from self-consciousness: the awareness of the subject of its own mental states. See Devin Henry, 'The Neoplatonic Achilles', in Lennon and Stainton, *The Achilles of Rational Psychology*.

(50) PNG, 4; M, 4.

(51) Clarke distinguishes his argument which focuses on 'bare Sense or Consciousness it self' from arguments that appeal to the higher capacities of the human mind: 'its noble Faculties, Capacities and Improvements, its large Comprehension and Memory; its Judgment, Power of Reasoning, and Moral Faculties' (see Samuel Clarke, *The Works* (London, 1738; repr. New York: Garland Publishing) (W), iii. 730). He offers a very specific definition of consciousness: '*Consciousness*, in the most strict and exact Sense of the Word, signifies neither a *Capacity of Thinking*, nor yet *Actual Thinking*, but the *Reflex Act by which I know that I think, and that my Thoughts and Actions are my own and not Another's*.' But at the same time he writes that in the context of the Achilles Argument this definition is not relevant 'because the Argument proves universally, that Matter is neither capable of this *Reflex Act*, nor of the first *Direct Act*, nor of the *Capacity of Thinking* at all' (W, iii. 784).

(52) Pierre Bayle, *Historical and Critical Dictionary: Selections*, trans. Richard H. Popkin (Indianapolis, Ind.: Hackett, 1991), q.v. 'Leucippus' (p. 130).

(53) 'De ipse natura', G, 507/AG, 158.

(54) G, iv. 479/AG, 139.

(55) Paul Lodge has suggested to me that this is not exactly right for the conatus of bodies. Their directedness, however, is parasitic on the final causality of the forces that constitute the nature of substances.

(56) For discussion, see, for instance, Steven Nadler, 'Doctrines of Explanation', in M. R. Ayers and Daniel Garber (eds.), *The History of Seventeenth Century Philosophy* (Cambridge: Cambridge University Press, 1998), 536–42.

(57) Sukjae Lee, 'Leibniz on Divine Concurrence', *Philosophical Review*, 113 (2004), 203–48.

(58) Grua, 28.

(59) Dut. ii. 2.134. I owe this reference to Lawrence Carlin, 'Leibniz on Final Causes', *Journal of the History of Philosophy*, 44 (2006), 217–33.

(60) This is not to say that final causes *are* efficient causes. Leibniz does not *identify* final cause and efficient cause here: the final cause is the end itself; the efficient cause is the mental representation of the end. Carlin (*ibid.*) argues that for Leibniz final causes are a species of efficient causes. While my question was whether there is efficient causality at the level of monads, Carlin proceeds by asking whether final causes *are* (a species of) efficient causes. From an Aristotelian point of view, that is a surprising approach, given that final and efficient causes were different types of explanation, or rather different aspects of one full explanation. (Anneliese Maier does cite a less-known scholastic, Guido Terreni, as claiming that the activity of an end is not really different from that of an efficient cause. See Maier, 'Das Problem der Finalkausalität um 1320', 286). The texts Carlin cites are the ones I cite above. But in neither text does Leibniz say that final causes *are* efficient causes. Carlin's discussion is not always careful about the distinctions between the end itself, the end as represented, and the mental act in which the end is represented. I am not certain that Leibniz himself is always careful about this either, although in some of his remarks his point is precisely to draw such distinctions. In allowing a role for both types of causality within souls, Leibniz's view now seems more in line with the Aristotelian tradition which saw final and efficient causes as aspects of an explanation for a single explanandum. Second, the picture is now intuitively clearer: when a monad perceives an end, this perception serves as an efficient cause to produce an effect, the perception of the means. So when I think of going skating, this perception efficiently causes the perception of the act of getting my skates out.

In correspondence Lawrence Carlin has argued that my picture here is incorrect because it neglects the role of appetites. I have not had the chance to explore how the picture should be altered in light of this suggestion, which I do take seriously. But I do not think this issue affects the main line of my argument in this paper.

(61) G, iv. 472/WF, 22.

(62) G, iv. 507/AG, 158.

(63) Robert Adams, 'Moral Necessity', in Jan Cover and Donald Rutherford, *Leibniz: Nature and Freedom* (New York: Oxford University Press, 2005), 186.

(64) G, vii. 344/AG, 319.

(65) For extensive discussion of these ideas, see Simmons, 'Changing the Cartesian Mind'.

(66) For this term and discussion, see Donald Rutherford, 'Leibniz on Spontaneity', Cover and Rutherford, *Leibniz: Natural and Freedom*, 156–80.

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