

**“Theism and Mechanism in Leibniz”  
by Kenny Pearce**

Over the course of the last few centuries, particularly since the publication of Charles Darwin's *The Origin of Species*, it has become commonplace to think of a conflict between science and religion. Science, on the one hand, considers the world in terms of *efficient causes*, and subscribes to the thesis of *mechanism* – the view that all events in the physical world can be explained in terms of the properties and interactions of bits of extended matter, and that these interactions are governed by mathematically formulable laws.<sup>1</sup> Religion, on the other hand, considers the world in terms of *final causes* – that is, it takes physical events to be explainable in terms of the design and purpose of God. Many people on both sides of this conflict have become used to viewing these two explanatory models as mutually exclusive. As a result, when we, in examining the history of human thought, find these two views side by side in the same thinker - as we do, for instance, in Leibniz - it is tempting for us to ask which of these is his ultimate, considered view. However, in the case of Leibniz, this approach is precisely the reverse of the correct one. Far from being in conflict with his theistic commitments, Leibniz's mechanism follows as a natural inference from his theology. Furthermore, the arguments Leibniz employs to infer his mechanistic theories are applicable not merely to his own peculiar metaphysical view of the world, but to theistic theories in general. This paper will examine the logical relationship between theism and mechanism through the lens of Leibniz's arguments. The first section will develop a particular interpretation of Leibniz's mechanism and his general account of the laws of nature, and it will be argued that this account is motivated by considerations which are essentially theological. In the second section, I will show that Leibniz's theological motivations

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<sup>1</sup> Mechanism might also be extended to include interaction between energy transported independent of matter, as in the case of electromagnetic waves, but it would be anachronistic to attribute this kind of view to the 16<sup>th</sup> and 17<sup>th</sup> centuries. I will take it for granted that modern physics is essentially an outgrowth of the mechanism of the early moderns, without dealing in any depth with the details of the differences between the two views.

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have application beyond his own system, so that, based on Leibniz's arguments, it can be demonstrated that traditional monotheism as a metaphysical theory expects *a priori* to find a world like the one described by the mechanistic hypothesis. In the third and final section, I will deal with the objection that mechanism is unable to account for miracles, and therefore incompatible with theism. In addressing this issue, I will attempt to show that Leibniz has, at bottom, a single unified account of miracles, and that it is possible to extricate this theory from Leibnizian metaphysics and thus provide a generalized mechanistic understanding of the miraculous without compromising the views of traditional monotheism.

### **1. Leibniz's Mechanism**

The definition of mechanism given above is a fairly standard one. However, it requires some adjustment before it can be applied within the Leibnizian system. First, it is generally accepted (though not completely undisputed) that in Leibniz's metaphysics the physical world is merely phenomenal. That is, “corporeal substance” is not ontologically fundamental, but, rather, is a phenomenon arising from the relations between and properties of monads, the active, unextended, mind-like substances which are the real constituents of the world. This means that, for Leibniz, whatever is said in connection with mechanism must take place at this phenomenal level, and not at the more basic metaphysical level. Furthermore, Leibniz insists that there is no actual interaction between substances in the world, so the phenomenon of lawful “interaction” between the (phenomenal) bits of matter does not arise from real interactions between the monads that give rise to the matter, but merely from the monads' varying degrees of “expression” of one another. Mechanism, then, is confined to the phenomenal realm, both in the interactions it

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describes and the objects which take part in them. Given this, we should reformulate the Leibnizian mechanistic hypothesis as the claim that the perceived motions of phenomenal bodies are fully explainable from a set of mathematically formulable laws relating only to the motions of bodies, when considered as a closed system. At *Monadology* 79, Leibniz tells us that “bodies act according to the laws of efficient causes or of motions,” and, in sect. 81, “bodies act as if there were no souls.”<sup>2</sup> Thus, on account of what he calls the “system of pre-established harmony,”<sup>3</sup> Leibniz believes that, although souls (and other lesser monads) are the underlying reality behind the physical, the material world can be reduced to certain “principles of mechanics” by which “all natural phenomena” can be explained, “but the principles of mechanics themselves cannot be explained geometrically, since they depend on more sublime principles which show the wisdom of the author and perfection of his work.”<sup>4</sup>

By consigning it to the phenomenal realm, and pointing to pre-established harmony as the explanation for the place of the soul in the theory, mechanism can be successfully adapted to Leibniz's metaphysics. However, the version of mechanism that has now been formulated, according to Leibniz, would hold true on any conceivable series of events. As he says in *Discourse on Metaphysics* 6:

everything is in conformity with respect to the universal order. This is true to such an extent that not only does nothing completely irregular occur, but we would not even be able to imagine such a thing. Thus, let us assume, for example, that someone jots down a number of points at random on a piece of paper, as do those who practice the ridiculous art of geomancy. I maintain that it is possible to find a geometric line whose notion is consistent and uniform, following a certain rule, such that the line passes through all the points in the same order in which the hand jotted them down ... Thus, one can say, in

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2 In G.W. Leibniz, *Philosophical Essays*, Roger Ariew and Daniel Garber, eds., (Indianapolis: Hackett Publishing Company, 1989) [henceforth AG], 223.

3 *Monadology* 80, *Theodicy* 59, 208, etc.

4 “Tentamen Anagogicum,” in Leroy F. Loemaker, ed. *G.W. Leibniz: Philosophical Papers and Letters*, (Boston: D. Reidel Publishing Company, 1956) [henceforth L], 478.

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whatever manner God would have created the world, it would always have been regular and in accordance with a certain general order.<sup>5</sup>

This argument shows that no matter what the sequence of events of the physical world was, it would count, on Leibniz's view, as “lawful.” However, traditionally, mechanism has placed at least some restraint on the content and nature of the laws. Thus far, we have spoken of them as being “mathematically formulable,” but the restrictions placed on natural law by Leibniz go further than this. In his dispute with Samuel Clarke, Leibniz repeatedly insists that Newton's theory of universal gravitation cannot be a fundamental explanation because it would be a “perpetual miracle;” that is, he claims that it would violate the principles of mechanism. Clarke responds that it is a regularity, a law of nature like any other, that bodies act upon each other from a distance with an attractive force. To this Leibniz says,

it cannot be regular without being reasonable, nor natural unless it can be explained by the nature of creatures. If the means which cause an attraction properly so called be constant and at the same time inexplicable by the powers of creatures, and yet be true, it must be a perpetual miracle, and and if it is not miraculous it is false.<sup>6</sup>

The nature of matter, according to most early moderns, and in particular the Cartesians, is first and foremost that of extension. Although Leibniz insists that, “the principles of mechanics themselves cannot be explained geometrically,”<sup>7</sup> he doesn't consider a law concerning matter to be “natural” if it is not related to the nature of matter. What this means, apparently, is that the laws of mechanics must concern only collisions between material bodies. Any action at a distance would be unnatural because, according to Leibniz, the nature of matter as extension has nothing to do with attracting other matter across vast spaces. As he says in his essay “Against Barbaric Physics,” “true corporeal forces are only of one kind, namely, those arising through the

5 AG 39

6 “The Controversy Between Leibniz and Clarke,” 9.121-122, in L 716

7 “Tentamen Anagogicum,” in L 478

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impression of impetus ... it is permissible to recognize magnetic, elastic, and other sorts of forces insofar as we understand that they ... arise from motions and shapes.”<sup>8</sup>

The second further claim by Leibniz is that the laws by which matter is governed are not merely mathematically formulable, but formulable, at least in principle, *by us*. In *Theodicy* 208, he says that the actual laws of nature are “those which are most natural, which it is easiest to explain, and which also are of greatest service for the explanation of other things.”<sup>9</sup> As we shall see in section three, Leibniz does not necessarily believe that these two restrictions must be absolute and deal with the fundamental, inviolable Law of Nature, but he does believe that they must hold in the ordinary experience of human beings (as opposed to “extraordinary” experiences, namely, miracles) and that God will create the universe in such a way as to minimize exceptions to the “subordinate maxims,” the phenomenal laws which are subject to these restrictions.

Like all of Leibniz's views, the grounding for these thoughts is to be searched for, at some level, in the principle of sufficient reason. However, we must not lose sight of just what the principle of sufficient reason amounts to in matters of contingent truth, such as the laws of mechanics. In his essay “On Freedom and Possibility,” Leibniz claims that “all truth concerning contingent things, or the existence of things, rests on the principle of perfection,” but “God produces the best not by necessity but because he wills it.”<sup>10</sup> Thus the principle of perfection rests wholly on the will of God, and the relevant question with regard to contingent things quickly shifts form from “why does this exist, and not something else” to “why did God will this, and not something else.” Leibniz believes that there is good reason for God to choose laws in accordance

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8 AG 313

9 G.W. Leibniz, *Theodicy*, Austin Farrer, ed. (Chicago, Open Court, 1985)

10 AG 19-20

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with the two principles laid out: laws that are in accordance with the natures of the creatures they govern, and that are comprehensible by the finite minds they affect. In Leibniz's system, these two restrictions come, in fact, to the same thing, and they are derived from both God's wisdom, and his benevolence.

In his “Introduction to the New Essays,” again attacking Newton's theory of universal gravitation, Leibniz writes,

every time we find some quality in a subject, we ought to think that, if we understood the nature of this subject and of this quality, we would understand how this quality could result from that nature. Thus in the order of nature (setting miracles aside) God does not arbitrarily give these or those qualities indifferently to substances; he never gives them any but those which are natural to them ... This distinction between what is natural and explicable and what is inexplicable and miraculous removes all the difficulties: if we were to reject it, we would ... renounce all philosophy and reason ... And it would be without rhyme or reason that God should ordinarily perform miracles, so that this doing-nothing hypothesis would equally destroy philosophy, which searches for reasons, and the divine wisdom, which provides them.<sup>11</sup>

In this passage, Leibniz argues that substances having qualities befitting their natures is precisely what makes the world rational and comprehensible. By understanding the essential nature of matter – extension in motion – we can understand all that there is to the physical. Every event with regard to matter (“setting miracles aside”) can be explained in these terms, because natural events are explainable in terms of the natures of the subjects involved. In *Monadology* 22, Leibniz tells us that the same is true with regard to the monads, stating that, “every present state of a simple substance is a consequence of its preceding state.”<sup>12</sup> Just as the nature of matter has to do with extension in motion, the nature of monads has to do with perception and appetite, and every event in a monad (“setting miracles aside”) is explainable in these terms. In fact, everything in the universe, on every level from the ontological ground floor of monads to the

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<sup>11</sup> AG 304-305

<sup>12</sup> AG 216

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highly phenomenal world of human experiences, is governed by laws appropriate to its nature. Leibniz concludes the argument above with the accusation that views such as occasionalism or Newtonian gravitation (viewed as a fundamental, rather than derivative, explanation), “would equally destroy philosophy, which searches for reasons, and the divine wisdom, which provides them.” The claim here is that this world, a world in which fundamental explanations have nothing to do with the natures of the things they explain, would be basically irrational, and this is contrary to the traditional monotheistic claim that God is *personal*; that is, that he is a rational being with thoughts and intentions, who goes through a deliberative process that can be understood, insofar as finite minds can understand it, by analogy to our own. Furthermore, traditional monotheists claim, God is *perfectly* rational and *perfectly* wise. How could such a being create an irrational world? How could he create, for instance, thinking matter, since consciousness is not explainable by the nature of matter?<sup>13</sup>

Leibniz goes further to claim that creating such a world would be not only irrational, but cruel, and therefore incompatible with divine benevolence. In “A Specimen of Discoveries About Marvelous Secrets of Nature in General,” Leibniz writes,

it is clear that minds are the most important part of the universe, and that everything was established for their sake; that is, in choosing the order of things, the greatest account was taken of them, all things being arranged in such a way that they appear more beautiful the more they are understood. So it must be held certain that God has taken the greatest account of justice, and that just as he sought the perfection of things, so he sought the happiness of minds.”<sup>14</sup>

Implicit in this statement is the claim that understanding of the universe is a benefit to minds. Leibniz believes, not implausibly, that it would harm minds and cause them unhappiness to place them in a world of which they could make no sense. On this basis, he claims that God,

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<sup>13</sup> See the continuing discussion in the “Preface to the New Essays,” in AG 216ff.

<sup>14</sup> In G.W. Leibniz, *Philosophical Writings*, G.H.R. Parkings, ed. (London: J.M. Dent, 1995) [henceforth P]: 83

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having taken the utmost care for minds, and that since he “is both the cause of things and the king of minds, and since he is himself a mind ... [he] arranged [things] in such a way that they appear more beautiful the more they are understood.”<sup>15</sup> This motivates minds to make use of their God-given reasoning ability and thus make the most of their most morally significant property, and maximize their resemblance to God. In the particular case of the types of regularities God chose for the world, he “sought the perfection of things” and “sought the happiness of minds” in precisely the same way: by giving to each subject properties befitting its nature.

## **2. Theism and Mechanism in General**

As can be clearly seen above, Leibniz's arguments for mechanism draw relatively little on his controversial metaphysical claims. Rather, they draw mostly on the attributes of the traditional God. In particular, they suppose that the world was created by a being with the power to create any world he chose, and that he chose the particular world he did because he was guided by wisdom and benevolence. The particular Leibnizian theory of the laws of nature may not be directly applicable to all theists, and certainly his view that matter is purely phenomenal is not, but Leibniz's arguments can indeed be applied to a more generic version of traditional monotheism to establish several important points about the sort of world theists should expect God to create.

Leibniz's argument that any world would be in some sense lawful needs no further support. It is indeed clear that whatever world might exist, a being with perfect knowledge of the entire course of that world could conceivably formulate some general laws that applied without exception, or almost without exception, throughout the entire course of the world. However, as 15 loc. cit.

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Leibniz is quick to point out, God wouldn't create just any world; rather, he would create a world full of richness, beauty, moral goodness, and so forth. As a result, other theists are in a position to ask what the laws of such a world would look like, just as Leibniz is.

The first observation that can be made is that God's wisdom is such that the world he created would be rational. That is, something like the principle of sufficient reason, though not necessarily so strong a formulation of it as Leibniz's, will hold with regard to the world God chooses to create. He will not create arbitrarily but, rather, will create in such a way as is most consonant with his wisdom and benevolence.

Furthermore, traditional monotheists have always been adamant that their God is not a capricious deity along the lines of Greco-Roman Paganism, but, rather, is consistent and reliable in all things.<sup>16</sup> He is a maker of universal decrees and these decrees are without exception and unalterable. As such, theists should expect the world to be full of regularity. In this way Leibniz's assertion that “The wise mind always acts *according to principles*; always *according to rules* and never *according to exceptions*,”<sup>17</sup> is very much in line with the tradition of monotheism.

The second observation that can be made is that it would indeed be contrary to divine benevolence to create a world utterly incomprehensible to us. This is not to say that finite minds must be able to understand perfectly every facet of the world – this would probably undermine its beauty – but certainly there must be enough order and regularity in the realm of ordinary human experience for us to be capable of reacting to it in a rational way. One of the key distinctions between theism and deism is that the theist holds that God continues to be active in human affairs and cares about his human creations. In particular, he wants them to behave in a certain way; he

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<sup>16</sup> In general, see Numbers 23:19, Malachi 3:6, Hebrews 13:18. On the predictability of nature in particular, see Genesis 8:22, Psalm 72:5.

<sup>17</sup> *Theodicy* 337, emphasis original

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is very concerned with his human creations acting morally. If this is so, he must create a world that we are capable of reacting to in a way that we can be held responsible for, and this requires that there be a great deal of regularity in the world around us.

Finally, theists have traditionally claimed that God's creation has aesthetic value. The nature of and criteria for aesthetic value are subjects of great dispute, but human beings seem to be in wide general agreement that both simplicity and depth of complexity contribute to beauty, and we seem to be most impressed by those objects that exemplify both. If a theist accepts this view, then he should also accept Leibniz's claim that “God has chosen ... the [world] which is at the same time simplest in hypotheses and richest in phenomena.”<sup>18</sup>

Theists, therefore, should expect to find a world that is regular, predictable, rational, comprehensible, and beautiful. Need this be the world of mechanism? It seems that, if such a world contains matter, even at the phenomenal level, then, at least to some degree, it must. That is, if there is something in the world, whether ontologically fundamental or merely phenomenal, whose essential nature is extension in motion then, in order for the world to be basically comprehensible, there must be rules about this something which have to do with these basic properties; but just how comprehensible must the world be? God is an infinite intelligence. To what degree should our finite intelligence be expected to understand his works? There are, in fact, theological (and, of course, empirical) reasons not to claim that we understand all of God's works, even as relates to the physical world, the most obvious one being the observation that God's intelligence exceeds ours in infinite degree. However, it is clear that the universe must be comprehensible at least to such an extent as our actions depend on it. This will include comprehension of virtually all of the world of what is now called classical mechanics. We must

<sup>18</sup> *Discourse on Metaphysics* 6, in AG 39

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be able to build houses, and bridges, and so forth. We must be able to discover and apply medicine. All of these things contribute to our ability to undertake morally significant actions, and thus in the absence of any compelling reason to the contrary, God will make all these things comprehensible to us. Furthermore, since God is a rational mind, the entirety of the universe can be expected to be the general sort of thing that a rational mind can comprehend, although our own human minds may be too limited. In sum, the world of mechanism may not be uniquely picked out as the one that is most consonant with theistic ideas, but it is certainly a very theologically satisfying hypothesis for the reasons above, provided that it can overcome one critically important objection: theistic claims about the miraculous.

### **3. Mechanism and Miracles**

Leibniz has a great deal to say on the subject of miracles, and it is often difficult to reconcile his various statements with one another. There are three major primary accounts of miracles to be found in Leibniz's writings. I shall refer to these as the supernatural account, the law-breaking account, and the epistemological account. The supernatural account, given at *Theodicy* 207 and elsewhere, says that, “the distinguishing mark of miracles (taken in the strictest sense) is that they cannot be accounted for by the natures of created things.” The same account is sometimes given with reference to the “power” of creatures.<sup>19</sup> Leibniz gives the law-breaking account when, in “Necessary and Contingent Truths,” he says that there exist “subordinate laws of nature, which have only physical necessity and are not repealed except by miracle.”<sup>20</sup> The epistemological account, given in *Theodicy* Prel. Dis. 23, says, “A truth is above reason when our

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<sup>19</sup> See, e.g. “The Controversy Between Leibniz and Clarke,” 5.17, in L 684

<sup>20</sup> In P 99

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mind (or even every created mind) cannot comprehend it ... such are the miracles reserved for God alone.” In this section I will argue that, given Leibniz's metaphysical commitments, all three of these accounts collapse into a single, quasi-epistemological definition of the miraculous (quasi- because having to do with Leibniz's theory of unconscious perceptions, which are not properly knowledge) and that this definition hints at a more general account which is capable of satisfying the demands of theism without contradicting the mechanistic hypothesis.

### **3.1 The Supernatural Account**

Recall from section one that Leibnizian laws of nature must, by definition, be intimately related to the natures of the creatures they govern. There are laws of this sort for every nature, metaphysical or phenomenal, existing in the universe. In *Discourse on Metaphysics* 14, Leibniz says, “each substance is like a world apart, independent of all other things, except for God; thus all our phenomena, that is, all the things that can ever happen to us, are only consequences of our being ... these phenomena maintain a certain order in conformity with our nature.”<sup>21</sup> The fact that each monad is completely independent, “like a world apart,” implies that there must be laws governing the perceptions of each individual monad, and these laws must relate to perception and appetite, as the nature of monads requires.<sup>22</sup> All of the monad's experiences are consequences of its existence, and not of other monads and so, on the most fundamental level, each monad is subject to its own law. However, Leibniz goes on to say that each monad, “carefully following certain reasons and laws it has observed, corresponds with others doing the same.”<sup>23</sup> In this way, all other laws arise from the laws which God imprinted on each individual monad at the creation.

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<sup>21</sup> AG 47

<sup>22</sup> *Principles of Nature and Grace* 3 in AG 207

<sup>23</sup> loc. cit.

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Still, Leibniz is quite insistent that the monads are all, in some sense, “mirrors” of the same universe. This implies that there exists a fundamental law of the universe which God willed from the beginning, and created the monads according to. This is explicitly stated by Leibniz in almost every discussion of the lawfulness of nature.<sup>24</sup>

Therefore, we have in Leibniz infinitely many natural laws arranged in a hierarchy of at least three levels. At the least general level, are the laws of the series of perceptions of each individual monad. Above these are the “subordinate maxims” which monads express with varying degrees of clarity depending on their unique view of the world.<sup>25</sup> Finally, there is the ultimate Law of Nature, which is without exception; Leibniz refers to the fundamental law or laws when he says “I think that in this series of things there are certain propositions that are true with absolute universality, and which cannot be violated even by a miracle. This is not to say that they could not be violated by God, but rather that, when he chose this series of things, by that very act he decreed that he would observe them.”<sup>26</sup>

When, in the supernatural account of miracles, Leibniz asserts that some events go beyond the power or natures of creatures, he implicitly admits that these fundamental laws are not necessarily consonant with the natures of creatures. As a result, he insists that the benevolence of God must be such that he minimizes conflict between the fundamental laws and the subordinate maxims.<sup>27</sup>

It seems that Leibniz is anxious to hold on to this definition of miracles primarily because it is a standard one among philosophers and theologians of his time.<sup>28</sup> However, due to his denial

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24 See, e.g., *Discourse on Metaphysics* 7, *Theodicy* 207, “Necessary and Contingent Truths”

25 See *Discourse on Metaphysics* 16

26 “Necessary and Contingent Truths,” loc. cit.

27 See, e.g., Leibniz's letter to Wolff, 2 April 1715, in AG 231 and *Theodicy* 208

28 This is particularly clear in “The Controversy Between Leibniz and Clarke,” 5.17 (L 684), 6.17 (L 687), 7.43

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of real interaction between substances, this definition must take on an entirely new meaning in Leibniz's system. In the *Monadology* Leibniz writes, “one creature is more perfect than another insofar as one finds in it that which provides an *a priori* reason for what happens in the other; and this is why we say that it acts on the other.”<sup>29</sup> Again, in *Discourse on Metaphysics* 16, he says that “what our nature expresses more perfectly belongs to it in a particular way, since it is in this that its power consists.”<sup>30</sup> Therefore, what the supernatural account of miracles amounts to within the context of Leibniz's metaphysics is the claim that miracles are events which are not expressed with a high level of clarity by any creature, and which no particular creature provides any *a priori* reason for. That is, God does not create the effect because it is in the notion of some creature to experience an appetite toward it at some time, as I experience an appetite toward the writing of this paper and God has therefore conformed the other monads of the world to the fact of the paper's being written, but, rather, God decides independently of any creature to perform the miracle.

### **3.2 The Law-Breaking Account**

The law-breaking account of miracles can already be seen to be very similar to the supernatural account. As is stated explicitly in *Discourse on Metaphysics* 7 and the cited passage of “Necessary and Contingent Truths,” the law-breaking account involves the breaking of only the “subordinate maxims,” or lesser laws of nature. The breaking of the fundamental Law of Nature is logically impossible.<sup>31</sup> According to this account laws are broken only to accommodate

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(L690), and 9.107 (L715).

<sup>29</sup> *Monadology* 50, in AG 219

<sup>30</sup> In AG 49

<sup>31</sup> *Discourse on Metaphysics* 6

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other laws.<sup>32</sup> In particular, Leibniz says that God decides to break the subordinate maxims, “through considerations of some more powerful final cause.”<sup>33</sup> In another place, he claims even more explicitly “that when God works miracles, he does it not in order to supply the wants of nature, but those of grace.”<sup>34</sup>

This sort of statement stems from Leibniz's belief that humans, being both mind and body, are subject to two kinds of subordinate maxims: what Leibniz often calls the “kingdom of nature” and the “kingdom of grace.” The kingdom of nature consists of the laws by which God governs the physical world as its architect; the kingdom of grace consists of the laws by which God governs his fellow minds as their monarch.<sup>35</sup> The laws of the kingdom of nature are mechanical; the laws of the kingdom of grace are moral. Despite all that Leibniz says about “perfect harmony” between nature and grace,<sup>36</sup> it seems that there are sometimes contradictions between the two. The law-breaking account claims that it is these disagreements that give rise to the miraculous: the mechanistic laws of the physical world sometimes give way to the moral and metaphysical laws of the spiritual world.

### **3.3 The Epistemological Account**

In *Discourse on Metaphysics* 16, between two versions of the supernatural account, Leibniz asserts that “God's miracles have the peculiarity that they cannot be foreseen by the reasoning of any created mind, because the distinct comprehension of the general order surpasses

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<sup>32</sup> *Theodicy* 207

<sup>33</sup> “Necessary and Contingent Truths,” loc. cit., see also *Discourse on Metaphysics* 7

<sup>34</sup> Letter to Caroline, in L 676, as cited in Gregory Brown, “Miracles in the Best of All Possible Worlds,” *History of Philosophy Quarterly* 12 (1995): 26.

<sup>35</sup> *Monadology* 87. See also *Principles of Nature and Grace* 14-15, and “A Specimen of Dynamics,” in AG 126-127.

<sup>36</sup> See esp. *Monadology* 87-88.

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them.”<sup>37</sup> In light of what has been said above about the lawfulness of miracles, the first thing this tells us is that it is impossible for finite minds to comprehend the fundamental Law of Nature. It further claims that the *really* miraculous events are the ones that cannot be explained by *any* of the subordinate maxims comprehensible to finite minds. In this way, this account collapses immediately into a very strong version of the law-breaking account. This is further illuminated by the discussion of events that are only *relatively* miraculous at *Theodicy* 249:

As to miracles, ... they are perhaps not all of one and the same kind: there are many, to all appearances, which God brings about through the ministry of invisible substances, such as angels ... These angels or these substances act according to the ordinary laws of nature ... And such miracles are only so by comparison, and in relation to us; just as our works would be considered miraculous amongst animals if they were capable of remarking upon them. The changing of water into wine might be a miracle of this kind. But the Creation, the Incarnation and some other actions of God exceed all the power of creatures and are truly miracles, or indeed Mysteries.

Leibniz here asserts that it would be miraculous from the perspective of humans for an unusual action to be taken by an angel among us, although the angel acted according to the ordinary laws of nature (that is, the laws that ordinarily govern angels, whatever those might be), because we are unable to explain it in terms of the subordinate maxims with which we are familiar. However, Leibniz is not satisfied with an account of miracles that leaves them entirely subjective.<sup>38</sup> Instead, he insists that some events<sup>39</sup> exceed the ability of all creatures to understand. Nevertheless, he is willing to grant that it is not necessarily incorrect to speak of these lesser irregularities as miracles.

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37 AG 49

38 See “The Controversy Between Leibniz and Clarke” 5.17

39 It is of interest that he mentions the creation and the incarnation in this connection, but omits the resurrection. Perhaps the other resurrections in the Bible, e.g. that of Lazarus in John 11, leads Leibniz to conclude that angels are capable of resurrecting the dead, without violating the subordinate maxims which are within the realm of their comprehension.

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### **3.4 The Comprehensive Account**

The manner in which these theories collapse into a single coherent account has already been hinted at above. Firstly, there is Leibniz's account of what constitutes the nature and power of creatures. Leibniz uses this as a bridge from the supernatural account to the epistemological account in *Discourse on Metaphysics* 16 when he says, “what our nature expresses more perfectly belongs to it in a particular way, since it is in this that its power consists.”<sup>40</sup> The highest level of expression is conscious awareness. As such, what belongs to the nature of a mind, as opposed to some lesser monad, is what it is consciously aware of. Thus the things which surpass our power to the greatest degree are the things which are to us completely incomprehensible, as the epistemological account claims. Furthermore, various substances express various subordinate maxims, the lesser laws of nature, with varying degrees of clarity. We express certain moral and mechanical laws, angels express deeper ones, and God expresses the fundamental Law of Nature (in addition to all of the subordinate maxims which are its consequences). Events that exceed our understanding and our power are events that violate the laws that ordinarily govern human experience, and these are the events that are miraculous from our perspective.

Leibniz's choice of examples is very interesting in light of his discussion of the two kingdoms of nature and grace, and the kingdom of nature's association with efficient causes, along with the kingdom of grace's association with final causes. I suggest that we are to understand Leibniz's view of the interactions of nature and grace with regard to the mundane and the miraculous in much the same way that modern physics understands the relationship of quantum mechanics to general relativity.

The principles of quantum mechanics deal with the interactions of the microscopic

40 In AG 49

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particles which physicists now take to be the building blocks of matter. When billions of these particles interact, the laws of quantum mechanics say that the world described by classical mechanics, the world of our everyday experience, will arise from them.<sup>41</sup> General relativity deals with objects that are in large gravitational fields, move very fast, or accelerate rapidly. It predicts that when gravitational fields, the relative velocities of objects, and their accelerations are all fairly small, the laws of classical mechanics will result. In this way, one might claim that there is a “harmony” between quantum mechanics and general relativity. However, there exist highly unusual *boundary conditions* between the two systems. The most commonly cited, and most extreme, example is the “black hole.” These astronomical objects contain extremely small particles, which should be governed by the unusual provisions of quantum mechanics, existing within gargantuan gravitational fields, which should be governed by the unusual provisions of relativity. In these types of boundary conditions, it is impossible to determine what will occur based on either quantum mechanics or general relativity: one must have knowledge of a deeper law.

In similar fashion, Leibniz's two examples of “absolute” miracles are both extreme boundary conditions between nature and grace. The laws of nature deal with matter; the laws of grace deal with minds. Ordinarily, there exists a “harmony” of nature and grace in situations where both apply, such as human life. As Leibniz says in *Monadology* 88, “This harmony leads things to grace through the very paths of nature. For example, this globe must be destroyed and restored by natural means at such times as the governing of minds requires it, for the punishment of some and the reward of others.”<sup>42</sup> However, there are certain extreme cases, analogous to the

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<sup>41</sup> Most of the time. Because quantum mechanics is essentially stochastic, there is no reason a major statistical anomaly could not lead to a violation of the laws of classical mechanics.

<sup>42</sup> AG 224

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black holes of modern physics, in which this harmony breaks down (Leibniz's claims about its “perfection” notwithstanding). The creation and, even more so, the incarnation, are events of extreme importance with regard to both inert matter and minds. The resurrection, which Leibniz omits from his brief list of examples, is an even more extreme boundary condition between the laws of nature and grace with which we humans are familiar: it involves the animating of a dead body (inert matter) with a living mind, and this is done in a context that is of extreme importance for the “city of God.”

This discussion suggests that it may not be sufficient for a Leibnizian miracle to represent a violation of the laws which creatures clearly express (and thereby exceed their power and natures). God breaks the subordinate maxims, “through consideration of some more powerful final cause”<sup>43</sup> “to supply the wants ... of grace.”<sup>44</sup> Taken in combination with Leibniz's discussion of final causes at *Discourse on Metaphysics* 19 and elsewhere, this suggests that there may be a further criterion: minds, which express not merely the universe, as all monads do, but also God,<sup>45</sup> must be able to apprehend some part of the final cause of the event. That is, for an event to be miraculous, it is not sufficient that we be unable to understand it in terms of efficient causes. If this were the case, then miracles would be merely cases of apparent disorder in the world. Since Leibniz says that in miracles God “departs from one law only for another law more applicable,”<sup>46</sup> we must look for the law which has come into effect, displacing the expected mechanical law, and we must look for it in the kingdom of grace, the realm of final causes.

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43 “Necessary and Contingent Truths,” loc. cit.

44 Letter to Caroline, loc. cit.

45 See “A Specimen of Discoveries” in P 83

46 *Theodicy* 207

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### **3.5 The Application of the Comprehensive Account to Theism in General**

One who does not hold to Leibniz's system cannot say all of the things that Leibniz says while endorsing Leibniz's account of miracles. For instance, most metaphysical systems do not allow us to say that something “exceeds the power of creatures” when we in fact mean that it is beyond their comprehension. However, the account of miracles that we have been developing is perfectly capable of satisfying the theological needs of traditional monotheism. This account gives the following two definitions:

1. An event E is miraculous relative to a mind M if and only if M can correctly determine part or all of E's final cause more easily and with more certainty than E's efficient cause.
2. An event E is miraculous absolutely if and only if it is impossible for any finite mind to determine any part of its efficient cause, and simultaneously possible for some sufficiently well-informed finite mind to determine part or all of its final cause.

As has already been seen, these definitions are capable of accounting for the standard Biblical miracles. They also help to explain why God might choose to perform miracles, when he clearly could have created the world in such a way that his plans could be fulfilled completely within the bounds of laws which are comprehensible to humans. The miracles God chooses to do reveal his plans and purposes to his creations. They are among the tools by which God makes his presence known.

It is important to note that the theist need not believe in absolute miracles, as defined. It might be the case that all events, including the creation of the world and the incarnation and resurrection of Christ, could in principle be explained by means of efficient causes by humans, or at least by some finite mind. Leibniz himself seems greatly tempted by this view<sup>47</sup> and it seems to me to be unlikely that there are any reasons other than perceived theological orthodoxy that he

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<sup>47</sup> See especially *Theodicy* 207 and “The Controversy Between Leibniz and Clarke” 2.6

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insisted on maintaining an absolute distinction “between natural and supernatural.”<sup>48</sup> After all, denying the existence of absolute miracles in favor of the above definition of relative miracles would make the harmony of nature and grace truly perfect, eliminating the exceptions to it which exist on Leibniz's actual view.

This account allows the theist to accept mechanism without succumbing to deism by insisting that God cares for his creatures and has taken them into account in the ordering of things so that, although events have efficient causes in terms of mechanical laws, they also have final causes which show God's care and provision for us. God can even be said to have created the world of efficient causes in such a way as to accommodate his foreknowledge of human needs and prayers. God's omnipotent power permits him to part the Red Sea whenever he chooses, but it would require very great wisdom for him to have created the world from the beginning so that the consistent application of mechanical laws would result in the Red Sea parting at the exact moment when Moses raised his staff. This, indeed, is a compelling picture combining both the wisdom and power of God in a way that is deeply theologically satisfying, while at the same time consonant with the mechanistic hypothesis, and therefore immune to the alleged fundamental contradiction between theism and the scientific understanding of the world. In this way, Leibniz's arguments show that theism is not merely compatible with mechanism, but provides strong reasons for belief in it.

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48 “The Controversy Between Leibniz and Clarke” 3.17, in L 685

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