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Leibniz's Two Realms and the Final Cause as Activity

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Abstract: Leibniz occupies a distinctive place in early modern thought about the significance of final causes. While agreeing with the basic thrust of Cartesian mechanistic physics, he departs from the view—widespread among his contemporaries—that accepting the mechanistic program implies giving up on the central role of final causes or ends in the universe. In particular, Leibniz proposes to recover the Aristotelian conception of substance as *internally* end-directed. He takes the thesis to have profound metaphysical implications, leading him to distinguish the "realm" of final causes—of substances—from the corporeal "realm" of efficient causes. This chapter offers a novel interpretation of the nature and significance of final causes in Leibniz, arguing that he follows Thomas Aquinas in espousing a conception of a substance's natural end as its proper operation or activity. The substances (monads) of Leibniz's later philosophy are not—as often claimed—most fundamentally to be characterized in terms of mentality, but in terms of an activity that is its own end.

Keywords: Leibniz; final cause; efficient cause; energeia; activity; Aquinas

1. Introduction

Leibniz occupies a distinctive place in early modern thought about the significance of final causes. On the one hand, he agrees with the basic thrust of Cartesian mechanistic physics. The behavior of bodies can be fully explained in terms of arrangements of material parts characterized by a small set of quantitative features (e.g., mass or size, shape, and motion) in conjunction with an equally small set of laws: the principle of inertia, rules of impact, and conservation laws. On the other hand, he departs from the view—widespread among his

contemporaries—that accepting the mechanistic program implies giving up on the central role of final causes or ends in the universe.

To begin with, he insists on the heuristic value of appealing to functions and optimality not only in explaining the behavior of living beings, but also within physics (e.g., to account for the way light travels).[1] In itself, this point is not especially controversial. The fact that some phenomenon can be fully explained mechanistically does not preclude there also being a legitimate teleological explanation of that phenomenon—especially since Leibniz's God sets up the universe in accordance with certain ends.

Yet Leibniz's defense of final causes includes a further and more radical claim. Forcefully disagreeing with the metaphysical conclusions Descartes draws from mechanistic physics—the conception of corporeal substance in terms of extension alone—Leibniz proposes to recover the Aristotelian conception of substance as *internally* end-directed. It is this dimension of Leibniz's concern with final causes that will be my focus here: the thesis that it is part of the very nature of substance to be an end-pursuer. He takes the thesis to have profound metaphysical implications, distinguishing the "realm" of final causes—of substances—from the corporeal "realm" of efficient causes. Consider the well-known section 79 of the *Monadology* (1714), in which Leibniz uses 'soul' broadly to designate the substances or *monads* of his mature metaphysics.[2]

> 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 (*regnes*), that of efficient causes and that of final causes, are in harmony with each other. (GP VI 620/AG 223, translation altered)

Why then does Leibniz think that there is such a deep connection between final causes and substancehood? And why, and in what sense, does accounting for that connection entail moving beyond the mechanistic realm?

There is a widespread picture of Leibniz's mature philosophy which I believe tends to get in the way of a deeper appreciation of these issues. According to this picture, Leibniz at least from the late 1690s onwards holds that reality is fundamentally mental: the monads of

[1] See e.g. McDonough (2008); Smith (2011, 59–93); Andrault (2014, 205–247).
[2] For the distinction between the broad and the narrow sense of 'soul', see *Monadology* §19, GP VI 610/AG 215.

his later philosophy are akin to the standard conception of a Cartesian mind—seats of mental representation (the difference being that Leibniz also allows for unconscious representations).[3] Such an interpretation makes it natural for commentators to read him as endorsing a strong connection between end-directedness and mentality. In this respect, Leibniz is sometimes, as we will see, presented as following an important current within later medieval philosophy, which takes final causality to be "forward-looking" in the sense that ends are construed as *future*, presently non-actual, events. From there, the step is supposedly short to the idea that only minds can be moved by final causes. As non-actual events, the only way ends can operate as causes is as part of the content of mental states.

I will argue that such an approach leads astray. Rather than seeing final causes as forward-looking, Leibniz espouses a traditional Aristotelian view of a substance's natural end as its proper operation or activity, which is not a future event, but in an important sense *atemporal*. A key implication is that there is no essential connection between final causes and mentality. In fact, I will suggest that the most fundamental characterization of substance for Leibniz is not in terms of mentality, but in terms of an activity that is its own end.[4]

Appreciating this proposal requires attending closely to the way he engages with Aristotelian thought. Of particular importance is the historically influential conception of an efficient cause as an agent, a substance, rather than, as on a post-Humean view, an event. The Aristotelian notion of substance as an end-pursuer is intended to account for the nature of substance as a basic efficient cause. Despite appearances to the contrary, Leibniz's two realms distinction does not break with the traditional view, but instead constitutes an attempt to defend it in the context of the mechanistic world-picture.

In elaborating his own position, Leibniz draws on a number of technical Aristotelian notions and distinctions: substantial form, first vs. second entelechy or actuality, *kinesis* vs. *energeia*, and successive vs. non-successive or permanent. Charting his appropriation of this seemingly arcane apparatus is vital to understanding his view as well as to to appreciate its originality. In defending the metaphysical significance of internal ends, Leibniz at the same

[3] The ontological status of bodies is a vexed issue in Leibniz scholarship, but my characterization is supposed to capture a widespread reading. For the view that composite corporeal substances are fundamentally real even in Leibniz's late metaphysics, see Phemister (2005). I believe the account I propose is compatible with both a more traditional phenomenalist view of corporeal substances and the realist account defended by Phemister.

[4] On the fundamentality of ends for Leibniz, see also Carriero (2008), although he does not discuss the notion of final cause as activity.

time attempts to rethink their nature as part of his project of providing the foundations for the plenum mechanistic universe.

I proceed as follows. After delineating Leibniz's commitment to the dependence of efficient on final causes, I take up one prominent way of explicating that dependence in terms of the directedness of powers. Clarifying the problems with such a reading paves the way for my alternative proper operation or activity interpretation of internal ends. By taking seriously the atemporal character of activity, we can better appreciate what Leibniz himself saw as the essential difference between his own position and the Aristotelian one. I end by reconsidering the two realms distinction, as well as the nature of perception and its relation to final causality.

I will largely set aside Leibniz's so-called *spontaneity thesis*, according to which a substance is spontaneous not only in the traditional sense of being an originator of change, but also in the special sense of being the sole source (barring God's concurrence) of all its states (see, e.g., *A New System of Nature*, 1695, GP IV 484/AG 143–44). I see this thesis as downstream from the core conception of substance as internally end-directed.[5]

2. The Dependence of Efficient on Final Causality

Leibniz's defense of the significance of internal ends is part of a broader endeavor to uphold central elements of Aristotelian metaphysics in opposition to Descartes's reconception of the corporeal world.

Along with many of his contemporaries, Leibniz takes Descartes's claim that the nature of body consists in extension to imply that the corporeal order is exhausted by geometry. All bodily features and goings-on ultimately consist in variations in size, shape, and motion understood geometrically.[6] Of particular importance for appreciating Leibniz's dissatisfaction with the Cartesian view are its consequences for the nature of motion. A geometrical construal of motion suggests that there is nothing more to a body's being in

[5] See Myrdal (2024, 416). I also ignore a worry some commentators have raised concerning the compatibility of the spontaneity thesis with a conception of internal ends as good: see Rutherford (2005, 157–61), Jorati (2017, 68–90). I agree with Bolton (2013, 186–91) and McDonough (2016, 103–10), who do not see any tension here, although my account of the nature of final causes differs from theirs.

[6] Descartes's actual position may be more complex: see, e.g., Gabbey (1980, 234–39); Woolhouse (1993: 134–43).

motion than its successively being in different places and nothing more to collision than one body's coming to occupy the place vacated by another one. Such a view makes it hard to account for central aspects of the behavior of bodies, for example, why colliding bodies resist each other and sometimes spring apart. In the vicinity there is a more general difficulty. A geometrical conception of motion seems to exclude all forms of "doing"—of bodies contributing something to what happens—from the corporeal universe. Thereby it becomes fundamentally unclear why Cartesian bodies would behave in *any* determinate ways and thus why they would be subject to *any* specific laws of motion.

One reaction to such worries is Malebranche's occasionalism, which embraces this seemingly problematic upshot, making God the sole causal source in the universe. Leibniz, however, goes in the opposite direction, concluding that Cartesian extension is insufficient to provide an adequate account of the corporeal universe. He attempts to show that even mechanistic physics needs a notion of *power* or *force*.[7] Motions are expressions of genuine forces inherent in bodies.[8] He also champions the significance of the notion of *substantial form*, arguing that mere extension cannot account for the unity of substance (*New System*, GP IV 478/AG 139)

While sometimes treated as separate lines of argument, the considerations about final cause, force, and substantial form are in fact intimately connected. For Leibniz, restoring a sense of "doing" (force or efficacy) to the corporeal universe involves recovering the traditional dependence of efficient on final causality. In the words of Thomas Aquinas, a prominent exponent of this view, "the end is the cause of the efficient cause, since the latter does not operate except through the intention of an end" (DPN, ch. 4). The sources of the various transactions in nature are substances pursuing ends.[9] For Aquinas, a substance's form grounds its basic powers as directed to their corresponding ends: "The natural appetite

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[7] 'Power' translates *potentia* (French: *puissance*) whereas I reserve 'force' for Leibniz's *vis* or *virtus* (French: *force*). He sometimes using these terms interchangeably, but also means to draw an important contrast between his own notion of force (*vis* or *virtus*) and the Aristotelian notion of power (*potentia*) (*De primae philosophiae Emendatione*, 1694, GP IV 469/L 433). See section 4 below.

[8] See *Specimen dynamicum*, 1695, GM VI 234–54/AG 118–38. For important recent treatments, see Duchesneau (1994); Garber (2009, 99–179); Arthur (2018, 205–29).

[9] Frost (2022, 93–95) offers a useful overview of Aquinas's account of the efficient cause as a substance. Her construal of natural inclination as an additional causal factor (2022, 121–26) suffers, however, from a negelect of what I call the *Proper Operation Thesis* (section 4 below). See also Frey (2019, 209–11).

(*appetitus naturalis*) is that inclination which each thing has, of its own nature, for something; wherefore by its natural appetite each power desires something suitable to itself" (ST 78.1 ad3). We tend to hear talk of inclination, appetite, and desire as mentalistic, but Aquinas explicitly guards against such an interpretation (DPN, ch. 3). The paradigm of a natural inclination is the inclination of the birch's augmentative power for its full size. Natural inclination is a primitive notion, not explicable in terms of a supposedly more fundamental notion of mental representation.[10]

Before going further into Aquinas's position, I want to take up a potential worry. The claim that Leibniz defends a broadly Thomistic-Aristotelian account of the dependence of the efficient on the final cause may seem hard to square with the two realms distinction. The latter is sometimes taken to imply a separation of efficient from final causality in line with subsequent developments within Aristotelian thought. As some scholastic thinkers adopted mechanistic accounts of nature, they were led to challenge Aquinas by proposing to divorce the conception of an efficient cause as a natural agent (substance) from the notion of internal end.[11]

The point of the two realms distinction is not, however, that the realm of efficient causes is metaphysically independent of that of final causes. Quite the opposite. In making the case for the importance of force to the corporeal universe, Leibniz at the same time insists that the notion of force itself "belongs to the domain of metaphysics [*est du ressort de la Metaphysique*]," as he puts it in his important 1695 essay *A New System of Nature* (GP IV 478/AG 139).[12] In a draft of the essay he adds, "I find that the efficient cause of physical actions belongs to the domain of metaphysics" (GP IV 472/WF 22, translation altered). This does not mean that forces would be some sort of non-mechanical causal factors. He is explicitly critical of those thinkers who introduce special "vital powers" to account for the behavior of living beings.[13] For Leibniz, the corporeal universe is closed under mechanistic

[10] Aquinas does claim that intelligence—knowledge or understanding of ends—is a necessary condition for end-directedness. His point is not, however, that in order for a being to be internally end-directed, it has to have knowledge of its ends. His concern is not with the *nature* of internal ends, but with the *ground* of the presence of internal ends and form—ultimately perfection—in the universe. This is what, for Aquinas, requires an intelligent being (God). See *De Veritate* Q22.a1, and, for a helpful discussion, Carriero (2005, 116–20).

[11] On this development, see Lagerlund (2011), who also takes Leibniz to champion a separation of efficient from final causes.

[12] See also, e.g., *Praefatio ad libellum elementorum physicae*, 1678/79?, A VI.iv 2009/L 289.

[13] On this point, see Andrault (2014, 205–39); Smith (2011, 59–93).

laws. The operations of corporeal forces are supposed to be quantifiable in terms of the basic mechanistic quantities (size, shape, and motion). Yet this is not to say that mechanistic physics provides an account of the *nature* of force. It is because such an account requires us to go beyond the confines of physics that force is a metaphysical notion.

The metaphysical character of force is connected to the dependence of efficient causality on internal ends.[14] In the *New System*, Leibniz elaborates as follows the notion of force in the course of arguing for the need to "rehabilitate" substantial forms.

> Their [substantial forms] nature consists in force, and […] from this there follows [*s'ensuit*] something analogous to sensation [*sentiment*] and appetite, so that we must conceive of them on the model [*à l'imitation*] of the notion we have of *souls*. (GP IV 479/AG 139)

I will take up this important passage in more detail below. For now, I simply wish to highlight the relation between force and appetite. In other texts, Leibniz explicitly endorses the traditional link between appetite and final cause. "Souls act according to the laws of final causes, through appetitions, ends, and means," as he puts it in the *Monadology* (§79, GP VI 620/AG 223). In the *Principles of Nature and Grace* (1714) he further insists that "the perceptions in the monad arise from each other by the laws of appetites, or by the laws of final causes of good and evil" (§3, GP VI 599/AG 207). In connecting force to appetite, and appetite to ends, what Leibniz seems to pick up on is precisely the Thomistic-Aristotelian conception of the efficient cause as dependent on the final cause. Somewhat paradoxically, making sense of the mechanistic universe requires returning to something like Aquinas's position. The laws of motion are laws of "mere" efficient causes in the sense that they abstract from the way those forces are forces of internally end-directed substances.

Why then does Leibniz think that making room for genuine efficient causality requires it to be dependent on internal ends? And in what sense does this amount to moving to a "realm" distinct from the mechanistic order?

3. The Directedness of Powers and Mentality

[14] See Rozemond (2009, 290–93); Carriero (2008, 127–28).

According to one prominent line of interpretation, Leibniz's recovery of the dependence of efficient causality on ends is motivated by what may be characterized as the *intrinsic directedness* of causal powers. Marleen Rozemond puts the point as follows: "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."[15] In other words, Leibniz's claim that appetite for an end follows from force is to be understood in terms of the way force as a causal power is intrinsically directed to some determinate effect.

In order to explain why internal ends lie beyond the mechanistic order, we need to invoke what Rozemond presents as a further Leibnizian thesis, namely, that "immanent finality implies cognition,"[16] where 'cognition' is to be understood broadly as mental representation.[17] The idea is that in order for a being to be internally directed to an end, it needs to *represent* that end to itself. For Rozemond, as well as for several other commentators, it is the explanatory priority of mentality over end-directedness which underlies the way Leibniz connects final cause and appetite to sensation or perception.[18] Ultimately, the two realms distinction turns out to be motivated by Leibniz's commitment to the immateriality of the mind.[19]

In tying internal ends to mentality, Leibniz, Rozemond suggests, aligns himself with another important current within scholastic thought which breaks with Aquinas's view of the notion of intending an end as primitive. Part of the motivation for this shift is supposed to be an increasing concern with "the question of how an end can exercise causality since it often does not (yet) exist."[20] The centrality of that concern reflects what Robert Pasnau has characterized as a *forward-looking model* of final causality, according to which final causes are understood as "events that have not yet occurred and in fact may never occur, but that some agent intends to bring about."[21] In order to avoid "backwards" causation, thinkers such

[15] Rozemond (2009, 289).
[16] Rozemond (2009, 289).
[17] Rozemond (2009, 285–88).
[18] See also e.g. Bolton (2013); Lagerlund (2011). Carlin (2011); Schmid (2011, 329–46).
[19] See e.g. *Monadology* §17, GP VI 609/AG 215.
[20] Rozemond 2009, 275.
[21] Pasnau (2001, 307), who draws on the classic study by Maier (1955). See also Lagerlund (2011). In my opinion, Pasnau goes astray in attributing the forward-looking model to Aquinas and in correspondingly construing his notion of intention in mentalitsic terms (Pasnau 2001, 305–6). Part of the problem is that Pasnau ignores the Proper Operation Thesis and the atemporality of ends (see sections 4 and 5 below).

as Buridan and Suárez came to hold that the end needs to be present in the agent at the time of acting as part of the content of a mental state.

The distinctiveness of Leibniz's position would thus result from his adhering to the traditional view of efficient causality as depending on final causality, while at the same time following later scholastic thinkers in making cognition or mentality a requirement on internal end-directedness.

Despite its apparent attractiveness, I do not think this line of interpretation captures the fundamental significance and nature of final causes in Leibniz. To begin with, the conception of end-directedness as effect-directedness makes it hard to understand a key feature of Aristotelian ends, central also to Leibniz's formulation of the two realms distinction: the essential connection between ends and goodness. If an end is simply an effect or outcome, why would it have to be good? [22]

Another issue concerns the notions of mental representation and mentality, which, on Rozemond's reading, are supposed to do the fundamental work in explaining internal end-directedness. The trouble is that the relevant sense of mentality is somewhat obscure. Leibniz typically characterizes perception in highly abstract terms as the "passing state which involves [*enveloppe*] and represents a multitude in the unity or simple substance" (*Monadology* §14, GP VI 608/AG 214). Perception is present even in the least sophisticated substances and as such involves neither awareness, nor the ability to distinguish external objects (sensation) (*Monadology* §19, GP VI 610/AG 216; *Principles of Nature and Grace* (PNG) §4, GP VI 600/AG 208). In fact, rather than appealing to something like the Cartesian notion of mind, Leibniz turns to Aristotle's characterization of the soul as the "entelechy" of an "organic body" in attempting to fill out the notion of perception.

> Although each created monad represents the whole universe, it more distinctly represents the body which is particularly related to it [*luy est affecté*], and whose entelechy it constitutes. And just as this body expresses the whole universe through the interconnection of all matter in the plenum, the soul also represents the whole universe by representing this body, which belongs to it in a particular way.

[22] Hoffman (2009, 296–301) explicitly defends the view that Aquinas's basic notion of an end is that of a mere effect. Drawing on Hoffman, Jorati (2017, 59–69) attributes the same view to Leibniz. Both overlook the Proper Operation Thesis (see section 4 below). Jorati's reading is further motivated by the idea that the spontaneity thesis is incompatibile with good-directedness. It is not clear that there is any such incompatibility, however (see fn. 5 above).

(*Monadology* §62, GP VI 617/AG 221, translation altered; cf. PNG §4, GP VI 599–600/AG 208)

This is not to say that Leibniz accepts the Aristotelian conception of form as actualizing matter thereby giving rise to *new* powers specific to living things.[23] While a Leibnizian organic body has functionally interrelated parts, it is, as noted, at bottom a mechanistic system.[24] All that goes on in the system that is the body of Fenrir the wolf as it is stalking, attacking, eating, and digesting Dolly the lamb is fully intelligible in mechanistic terms.

Still, the functional structure of an organic body is supposed to express a non-mechanistic sense in which that body has a life, namely, the sense in which its entelechy is a "life" (PNG §1, GP VI 598/AG 207). The significance of internal end-directedness is part of Leibniz's articulation of this idea. In his *Animadversiones* on G. E. Stahl's *Theoria medica vera* (1710), Leibniz insists that "nothing happens in the body that the soul does not truly perceive, or toward which it does not make its appetite tend (in which I include, depending on circumstances, the instinct to flee), even if this escapes our attention [*non advertentibus nobis*]" (LS 27). Our conscious mental lives are just manifestations of a more basic perceptual cum appetitive unfolding corresponding to the processes in the organic body.

> Those motions are not incorrectly called "voluntary" that are connected to more distinctly conscious [*cognitis*] appetites, when we notice [*animadvertimus*] that our soul adapts means to ends, while in all other motions the appetite proceeds toward its ends by means that we do not notice. (LS 27; cf. Letter to Sophie Charlotte, May 8, 1704, GP III 347/LTS 315)

Understanding Leibniz's position requires considering an important element of the traditional notion of final cause missing from Rozemond's reading: the thesis that a substance's ultimate end is its own *proper operation*. We will come to see that it is not so much the view of end-directedness as the directedness of a power to its effect that drives Leibniz's defense of the dependence of efficient on final causality, but rather the *Proper Operation Thesis* (as I will term it).

[23] As Aquinas holds, see Frost (2022, 111–12).
[24] On the notion of organic body, see Fichant (2003) and Smith (2011, 97–136)

4. Proper Operation (Activity) as a Substance's Ultimate End

The Proper Operation Thesis is closely related to the starting-point of Aristotle's ethical project: the need for an ultimate end "on account of which all other things are desired, while this end itself is not desired on account of anything else," as Aquinas puts it in his commentary on the *Nicomachean Ethics* (*In Ethica* I.II.22).

Following Aristotle, Aquinas terms the ultimate end happiness (*felicitas*, which is his rendering of *eudaimonia*) and takes its nature to be elucidated in terms of the so-called function argument. The basic thought is that we can understand the human case by seeing the question of our ultimate end or good as a version of the more general question of the good of some kind of being. From there, Aristotle famously goes onto locate that good in a being's function (*ergon*), what Aquinas characterizes as its *proper operation*: "When a thing has a proper operation, the good of the thing and its well-being consists in that operation" (*In Ethica* I.X.2).

What then does Aquinas more specifically mean by *proper operation*? 'Operation' is his rendering of Aristotle's *energeia*. What Aquinas picks up on is the idea of *energeia* as an action that *its own end* in contrast to *kinesis*, which is a process directed to a further *end-product* (as, e.g., the growth of a sapling is directed to its full size).[25] An operation is thus what Aquinas calls an *immanent action*, an action in which "the inclination of the agent tends toward the action itself" by contrast to actions which have external end-products (SCG III.2.2; cf. *In Ethica* I.I.13).[26] Just as for Aristotle, paradigmatic instances of operation or immanent action for Aquinas include sensing and understanding.

As an ultimate end, a proper operation is not only an end in itself in the negative sense of not being directed to a further end-product, but is itself the end of all of a being's other doings. Rather than being simply prescriptive, the Proper Operation Thesis purports to express the *actual* structure of the behavior of any substance: "each thing naturally desires its own perfection," that is, has "a natural inclination to perform its proper operation" (*In Met.* I.1). The particular ends and the corresponding inclinations of a substance's various powers are for the sake of and thus derivative on the substance's proper operation and natural

[25] The locus classicus for the *energeia*/*kinesis* distinction is *Metaphysics* IX.6. I set aside Aristotle's further use of 'energeia' for *entelechia* in the general sense of actuality.

[26] See Pini (2015, 87–88), who also discusses some complications in Aquinas's account, which I will ignore here.

inclination for it. For any substance, its ultimate good or end consists in performing its proper operation well (*In Ethica* I.X.6).

Even if sensing and understanding are cited as prime examples of operation, this does not mean that all operations are cognitive. A proper operation is paradigmatically a certain kind of *vital operation*. The proper operation of a human being is rational living, the highest form of which is contemplative living. In Fenrir's case, the proper operation is lupine sensory living, and in that of a birch a specific vegetative living. The idea of proper operation as a kind of living may not be entirely transparent to us. Part of the reason is that we tend to think of living as just consisting in the different things a living being does throughout its life. This is not how living as vital operation is to be understood, however. As such, living instead comes close to the way we are accustomed to think of dancing, say. Dancing involves a series a complex movements, but it appears wrongheaded to suggest that dancing is reducible to those movements. On the contrary, the latter seem to depend fundamentally on being undertaken in and for the sake of dancing. Similarly, the various things a living being does throughout its life are supposed to be directed to its living as an ongoing vital operation (as I explain more fully in section 5 below).

As noted above, the construal of ends as mere effects makes it difficult to understand why there would be any essential connection between ends and goodness. The worry does not arise in the same way on the proper operation conception of a substance's ultimate end. That conception is already from the start intended as a substantive answer to the question of our final end in the sense of our good. The connection between ends and goodness is not a further add-on, but constitutive of the Proper Operation Thesis. This is not to say that the thesis is unproblematic. We may doubt whether it gives the correct answer to the question of our good. We may also challenge the ethical relevance, and even the intelligibility, of the question itself. The point is simply that insofar as we accept the proper operation conception of our final end, there is no room to ask whether that end is in fact good.

I propose that this is the background against which Leibniz's way of freely alternating between talk of final causes, goodness, and perfection is best understood. In defending the dependence of the efficient on the final cause, he seeks to retrieve the conception of a substance's natural end as its proper operation.[27] The Proper Operation Thesis indeed figures prominently in a number of his writings concerned with medicine and the physiology of the

[27] This point has generally been overlooked by scholars. Important exceptions are Frey (2016) and Lyssy (2016, 366–72), although they develop it somewhat differently than I do.

human body. Consider the following passage from *De scribendis novis Medicinae Elementis* (posterior to 1682–83).

> In any Machine one must consider both its functions or ends, as well as its manner of operation [*functiones eius, sive finis, tum modus operandi*] […] The primary function of a human being is perception, but the secondary function (which is for the sake of the first [*prioris gratia est*]) is to procure perceptions. The advancement of human perfection consists in the same measure in the advancement of these functions. (Pasini [1996, 212–13]/Smith [2011, 297–98], translation altered)

While the identification of perception as the primary function of a human being departs from the Aristotelian view, Leibniz elsewhere formulates the point in the more traditional language of contemplation.

> Plants, animals, and, if I may say it in a word, organic bodies that are produced by nature, are machines fitted for the perpetuation of certain functions [*munia*]; they bring about this perpetuation through the propagation of the species, as well as through the nourishment of the individual, as well, finally, as through the accomplishment of these operations which is the special function of each to assume [*tum denique ipsa illa effectione eorum, quibus speciale munus cujusque obitur*]. And indeed it is manifest that the human body is a machine suited for the perpetuation of contemplation. (Letter to Gakenholz, Dutens II.2, 171/Smith [2011], 305.)

In these passages, Leibniz is clearly working with a proper operation conception of an end. A being's various actions are ultimately for the sake of its basic function, its specific operation, in which its perfection consists. At the same time, it is natural to wonder about the status of this claim given that it is made in the context of explicating the functioning of "machines," corporeal systems, which, according to Leibniz, can be fully accounted for mechanistically.

Here we need to remember that even though an organic body is a machine, its functional structure is nonetheless supposed to manifest the order of entelechies or final causes. In fact, the texts just quoted have a direct connection to Leibniz's metaphysics of force.

While it may seem natural to understand—as Rozemond does—the notion of force in terms of the Aristotelian notion of power, Leibniz himself contends that force is

fundamentally different from what he disparagingly calls the "mere" or "bare" powers of "the schoolmen."[28] Even if he often speaks of force in terms of striving (*conatus*, *nisus* or *effort*), his point is not that force simply consists in a striving in the way a potency consists in directedness or inclination to its corresponding actuality. Instead, Leibniz insists that force contains "an original *activity* [*une* activité *originale*]" (GP IV 479/AG 139), 'activity' being his rendering of *energeia* (sometimes he also uses the French *énergie* and the Latin *energia*).[29] In other words, it is not the Aristotelian notion of power, but of that of *energeia* or *operation* that is supposed to capture the essence of force.

This suggests a different way of understanding the connection between force and final cause. Rather than going via the directedness of causal powers—the need for force to be directed to an end—the connection is that it is force *itself* that constitutes a substance's ultimate end, its own operation or *energeia*, in line with the proper operation account of bodily functions in the medical and physiological writings. Indeed, Leibniz explicitly stresses the traditional relation between activity or *energeia* and life, speaking of "primitive activity, soul, *life* (*Activitatis primitivae, Animae, Vitae*]" (Letter to Bernoulli November 18, 1698, A III.vii 944/AG 169, emphasis added).[30] As the entelechy of an organic body, what a substance provides is the force or life activity of that body, and thereby, as will become clear below, a sense in which the body has an end—namely, insofar as the various bodily goings-on can be seen as being for the sake of that activity.[31]

My proposal then is that Leibniz's defense of the dependence of efficient on final causality is not primarily motivated by the need for causal powers. Instead, the motivation lies in his commitment to a conception of efficient causation as substance causation, on which for something to be a substance is for it to have its own proper operation (activity or *energeia*) as its ultimate end. Thereby it is easier to understand his move from the importance of substantial form as responsible for the unity of substance to the need to recover final causes. The way an Aristotelian substantial form determines a substance's natural end, its

[28] See e.g. *On Body and Force* (original untitled), 1702, GP IV 395/AG 252; *New Essays on Human Understanding*, 1704, A VI.vi 140/RB 140.
[29] See e.g. *On Nature Itself*, 1698, GP IV 504/AG 156; Remarks on Lamy, 1702, GP IV 588/WF 163; Letter to Masham, July 10, 1705, GP III 368. For a fuller discussion of the significance of *energeia* to Leibniz's notion of force, see Myrdal (2024).
[30] Cf. *Conversation of Philarète and Ariste*, 1712, GP VI 588/AG 264; *On Body and Force*, GP IV 396/AG 253; Letter to Wagner, June 4, 1710, GP VII 529–30/W 504–5.
[31] Nachtomy (2019, 188–200) also stresses the connection between life and force in Leibniz, but does not discuss the relation to *energeia*.

proper operation, is crucial to the form's constituting the substance as a basic unity. It is because a substance's actions are for the sake of its proper operation that it is a unity rather than simply a collection of powers.

Leibniz's articulation of the nature of life activity obviously departs in important respects from the Thomistic-Aristotelian framework. On the latter, a vital operation is relative to a kind or species, whereas Leibniz famously holds that form (and thus activity) is primarily individual. This difference need not affect the core of the Proper Operation Thesis, however. It is important to keep in mind that despite the seemingly "biological" character of Aquinas's and Leibniz's examples, their notion of life activity is not that of the later science of biology, but metaphysical. The basic sense of life activity is an activity which is the ultimate end of all of a substance's other actions. Such a view may make less problematic the shift from a conception of Fenrir's life activity as primarily wolf specific to a conception of it as primarily Fenrir specific. Note also that the individual nature of Fenrir's activity need not exclude its having much in common with the activities of other wolves. The crucial difference is that these commonalities will consist in similarities between individual activities, rather than, as for Aquinas, derive from a shared lupine form.

We are now in a position to reconsider the significance of the passage from the *New System* in which Leibniz claims that from force *follow* appetite and sensation. As we saw, this passage is typically read in terms of the idea of powers as directed to effects. Yet appetite may also be taken to follow from force in a different way, namely in the way that force as *an end* determines appetites for that which is for the sake of it. Consider the following passage, where Leibniz elaborates on his conception of the relation between ends and appetites in the course of responding to Stahl's claim that the end of a living being is "simple."

> It can indeed be said that the end is simple, namely, self-preservation [*finem esse simplicem, nempe, conservationem sui*]; and that the means to it, generally considered, are few, namely, appropriate nutrition and secretion. But this is as if one argued with a certain military leader, maintaining that nothing would be easier than to put an end to the war. He would say, in fact, that it is simply a matter of the Gauls being struck down, and then of entering into Lutetia. The goal is simply peace; the means are no less simple: to overcome the enemies in battle and to take their principal cities. But how many things are here required for the means of means? Thus, likewise, innumerable partial vital motions are required for nutrition and secretion to take place

> properly; and to all these singular motions of the body, appetites correspond [*respondent*] in the soul, even though we are not aware of them. (LS 327)

Leibniz takes the characterization of the end as self-preservation from Stahl. At first sight, this may appear as a rather thin notion of an end, as simply a matter of staying around. Yet self-preservation can also be heard in the richer sense of sustaining a proper operation or life activity. In any case, what is important for our purposes is the idea that although simple, the end determines a complex appetitive structure. As a first pass, Leibniz's point can be put as follows. An organic body is an intricate mechanical system. Force accounts for efficient causality in that it provides a life activity corresponding to that system. Appetite follows from force in the sense that force (life activity) as an end determines appetites corresponding to the complex motions in the body as being for the sake of sustaining force itself.[32]

Before fleshing out this proposal, it is important to notice that while it yields a sense in which appetite follows from force, it does not explain why force also implies "something analogous" to *sensation*. Here it may be suggested that considerations about the forward-looking nature of final causes could still be relevant. After all, in the case of the war analogy Leibniz employs in his response to Stahl, the end (peace) is naturally construed as something *future*, something that is achieved via *first* striking down the Gauls and *then* entering into Lutetia. It may then be thought that the only way for the an end to determine appetites for the means is by virtue of a mental representation of the end. I will argue that this suggestion is misplaced, since a proper operation or activity is in an important sense *atemporal*. Appreciating this point will also help us to better understand what is distinctive about Leibniz's position.

5. The Atemporality of Activity and the First/Second Actuality Distinction

It should not come as a surprise that temporality for Aquinas occupies a secondary role. After all, following Aristotle, he sees time as a "measure" of change or succession (ST 1a 10.1c). The view remained influential in early modern philosophy and informs, in particular, Leibniz's well-known thesis that time is "ideal."[33] Correspondingly, it is important to note

[32] For a somewhat different reading of this passage see Andrault (2022, 30–34). Her focus is, however, on the heuristic role of final causes.

[33] See Myrdal (2021, 714–15).

that the core notion of an end for Aquinas is not that of taking place at some future point in time, but that of *completion*. End-directedness does not essentially consist in future-directedness, but in directedness to completion.

As an *operation*, a substance's ultimate end is, however, atemporal in a more specific sense. Aquinas maintains that operations (such as sensing and understanding) are not *per se* in time since they lack any essential connection to succession (ST 1a2ae 31.2 ad1). The claim is somewhat difficult for us to hear, since we easily think of not being in time as being "timeless," that is, not subject to temporal predication. This is not Aquinas's point, however.[34] For him, something that is not in time *per se* may still be in time *per accidens* insofar as it accidentally involves a succession. His example is being human: while not *per se* in time insofar as he is a human being, Socrates is nonetheless *per accidens* in time insofar as he is subject to changeable causes (ST 1a2ae 31.2 ad1).

The conception of operation as non-successive goes back to Aristotle's *kinesis*/*energeia* distinction. As directed to an end-product, *kinesis* (such as growth) consists in a succession of stages through which the end or completion is attained. In contrast, as undertaken for its own sake, *energeia* is supposed to be complete at any moment. Although understanding some specific issue may take place step-wise, we are at each step engaged in an operation we undertake for its own sake—similarly to the way a dancer is fully engaged in dancing at each step of the dance. It is in this way that sensing and understanding are complete at any moment. This is an idea Leibniz explicitly draws on in characterizing force or activity as *permanent* in contrast to successive by which he means that force is something that endures by being wholly present at each moment.[35]

That operations are inherently complete does not mean that we always undertake them perfectly. In holding operations to be complete in the sense of non-successive, what Aquinas means to deny is that the end is produced in what may be called an *additive* (or *subtractive*) manner, that is, as the full size of a plant is a result of incremental expansion (or the breaking down of nutrition is a matter of subtracting elements). In contrast, we do not get to, say, perfectly discriminating sensing (or perfect understanding) by adding up bits of unfocused sensing (or low-quality understanding). This is why sensing, understanding, or living can be complete at any moment and still admit of shifts in quality.

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[34] For a valuable treatment of this point, see Davies (1993, 105–9), who argues that for Aquinas even eternity is not opposed to duration.

[35] See, e.g., *Theodicy* §87, GP VI 150/H 171. For further references and discussion, see Anfray (2018); Myrdal (2021, 719–20) and (2024, 406–7).

If a substance's ultimate end, its proper operation, is atemporal in the sense that it is not essentially located within a succession, this also means that its relation to that which is for the sake of it is not successive either. Fenrir's various particular pursuits are not ultimately directed to his sensory operation as a further end-product, but as something going on throughout, and even present in, them. Seeking nourishment is a means to sustaining Fenrir's vital processes. But insofar as it is essentially guided by sensory apprehension (of, e.g., sheep as food), that pursuit is also *itself* an instance of Fenrir's proper operation. Indeed, it is because his particular pursuits are not simply means to, but also manifestations of, the proper operation that these pursuits and the underlying powers can be said to have their own particular ends. Fenrir aims at food as an end, and not just as a means to some further end, since the ultimate end is itself present in his food-seeking. (Presumably, something similar holds for plants, even though Aquinas is less clear on this score.)[36]

The atemporality of proper operation offers a way of understanding a claim central to Leibniz, namely, that a substance's various endeavors are what he calls *derivative forces*—modifications of its primitive force or activity.[37] If we, as I have suggested, take the latter as a substance's ultimate end and its particular endeavors as undertaken for the sake of that end, it may at first sight seem puzzling to say that that which is for the sake of a substance's activity is also a *modification* of that activity. The claim makes better sense, however, in light of a conception of the ultimate end as atemporal—as not essentially temporally or successively posterior to that which is for the sake of it.[38] Indeed, as I have just presented Aquinas's basic point, for Fenrir's various pursuits to be for the sake of his proper operation is precisely a matter of their also being manifestations of that operation.

This is not to say that Leibniz's notion of primitive force can be fully understood in terms of the Thomistic-Aristotelian framework. While seeking to recover the notion of final cause as a substance's proper operation, he also attempts to divorce that notion from other key elements of the Aristotelian account. I have already referred to the way he distances himself from the Aristotelian notion of power, as well as to his conception of a substance's

[36] Vegetative actions (nutrition and growth) are usually presented as paradigms of successive processes. But given that having a proper operation is essential to being a substance, it seems that there should also be forms of merely vegetative operations specific to plants.

[37] See e.g. Letter to De Volder, January 21, 1704, A II.iv 189–90/LDV 287; Letter to Jaquelot, March 22, 1703, GP III 457/WF 201.

[38] The sense in which I take primitive force to be atemporal (as proper operation) should be distinguished from the stronger sense of atemporality (as something like timelessness) sometimes attributed to Leibnizian substances, see, e.g., Whipple (2010, 403–7).

activity as individual rather than species-specific. These points of disagreement are part of his attempt to challenge the traditional distinction, vital to Aristotelian metaphysics, between a substance's *first* and *second actuality* (*entelechy*)—between, on the one hand, the substance with its powers, and, on the other hand, the exercise or actualization of those powers (ST 76.4 a1Ad1).

The first/second actuality distinction is, once again, not temporal or successive, but ontological. In saying that the soul is "the first actuality of a physical body potentially having life" (412a28), Aristotle does not mean that, e.g., a sapling could be around without exercising any of the potencies whose actualization is involved in its living. Instead, the point is that first actuality is *ontologically prior* to second actuality. This is also how Aquinas's distinction between the orders of *execution* and *intention* is to be understood: "[a]lthough the end be last in the order of execution, yet it is the first in the order of the agent's intention. And it is in this way that it is a cause." (ST IaII 1ad1) For Aquinas, the fundamental sense of end-directedness is to be found at the ontologically prior level of first actuality—in the inclinations of a substance's basic potencies toward second actuality.

What Leibniz takes issue with is precisely the conception of substance, first actuality, as ontologically prior to acting. Consider, for example, his explanation of the difference between his own notion of substantial form and the Aristotelian one in the *New System*: "Aristotle calls them *first entelechies;* I call them, perhaps more intelligibly, *primitive forces*, which do not contain merely *act* or the completion of possibility, but even an original *activity*." (GP IV 478-79/AG 139) Instead of understanding a substance's activity or operation as the realization of its form, form itself *consists* in activity.[39]

Here Leibniz is responding to a fundamental challenge to the very intelligibility of the first/second actuality distinction arising from a basic feature of his physical picture. Following Descartes, he espouses a plenum physics: all the variation in the corporeal universe arises from motion within a fluid-like matter. On such a view, individual bodies are differentiated from each other as patterns of motion, (infinitely) complex dynamical systems, within the plenum. In that case, the very idea that what Fenrir fundamentally is—his basic causal nature—would be located at a level of first actuality, in a set of potencies, seems fundamentally wrong-headed. Given that Fenrir's body simply *is* a complex dynamical system, going beyond that system amounts to going beyond Fenrir's body itself: all we are left with is homogeneous matter and its basic invariants (the laws of nature common to all

[39] For further discussion of this passage see Myrdal (2024, 412–14), on which I draw here.

bodies). This is not to deny that we can truly talk of Fenrir as having abilities to, say, digest, sense, and move about. Yet it would be a mistake to think that we thereby get onto a basic order of nutritive and locomotive potencies. The priority goes the other way around. Rather than motion being an exercise of an underlying potency, it is by virtue of its motion—its specific dynamic structure—that the Fenrir system is capable of responding to the environment in determinate "lupine" ways.

Leibniz is thus moved by two fundamental, but potentially conflicting, considerations. On the one hand, he believes that in order to make room for a sense of efficacy or doing, we need to recover the notion of an efficient cause as an internally end-governed substance, where this means a substance having its own life activity as its ultimate end. On the other hand, he thinks that insofar as this account is supposed to be adequate as a foundation of the plenum mechanistic universe we need an account of substance that does not rely on the first/second actuality distinction.

In attempting to do justice to both of these considerations Leibniz is led to collapse certain distinctions central to the traditional Aristotelian position: not only the distinction between first and second actuality, but also those between formal and final cause, and between appetite and activity. The result is a view on which Fenrir's life activity is *both* his nature and end and where appetites are construed not in terms of the inclinations of powers, but as derivative forces, aspects of life activity.

How can Leibniz at once do away with these distinctions *and* retain the traditional priority of the final cause? Here it is important to remember that for Aquinas end-directedness can be said to be found at two levels: (i) the directedness of first actuality (powers) to second actuality; and (ii) the directedness *within* second actuality of those actions that are for the sake of the proper operation to that operation as their ultimate end. On Aquinas's view, these two levels are obviously part of a unified picture. The way in which a substance's various doings are for the sake of its proper operation is ultimately a manifestation of the basic directedness and ordering of powers to second actuality. In contrast, Leibniz can be seen as trying to pry apart (ii) from (i), attempting to account for the priority of the end merely in terms of the atemporality of the proper operation—in terms of the way a substance's endeavors are for the sake of its activity in being manifestations (modifications) of that activity.

Assessing the success of this project would require a more detailed treatment than what I am able to offer here. Instead, I simply want to underscore one implication of reading Leibniz as defending a version of the Proper Operation Thesis. Once we take into account the

atemporality of a substance's proper operation, there is no longer any obvious route from final causes to mentality. Indeed, on Aquinas's way of drawing the cognitive/non-cognitive distinction, what is central is not the ability to represent non-actual states, but the ability to apprehend things in the environment as goods to be pursued or evils to be avoided. A wolf apprehends a sheep as good, whereas the sheep apprehends the wolf as evil (*InDA* II.13.205–222; ST 1a78.4sc). This is not to deny that representation of something non-actual may be central to pursuits of some particular ends (say, getting milk from the store), but it does not form the core of what is distinctive of cognition in relation to ends.

I suspect that the tendency among some scholastic and early modern philosophers to think of ends in forward-looking terms results from abandoning the traditional notion of a natural end—the idea of a substance having a proper operation as its ultimate end in virtue of its form. What drives the view of internal ends as requiring cognition is actually a radical shift in the understanding of what internal ends amount to. Whether or not this suggestion is on the right track, it seems clear that such a shift is *not* present in Leibniz. What he seeks to recover is precisely the traditional notion of a substance's natural end as its proper operation.

6. The Two Realms Distinction: Top-Down vs. Bottom-Up

If there is no obvious route from the final cause conceived as proper operation to mentality, it is hard to understand how considerations about the immateriality of the mind could lead Leibniz to locate ends outside of the mechanistic order. However, the Proper Operation Thesis suggests an alternative motivation, which has to do with what may be characterized as the incompatibility of mechanistic structure with the structure of activity. Indeed, in stating the two realms distinction, Leibniz sometimes uses 'order' instead of 'realm', indicating that the basic difference is precisely a matter of *ordering* (e.g., *Critical Thoughts on the General Part of the* Principles *of Descartes*, 1692 GP IV 391/L 410).

As organized around ends in the sense of proper operation, the order of the Aristotelian universe is thoroughly *top-down*. Corporeal processes are either themselves essentially determined as being for the sake of a substance's overarching proper operation or are derivative on processes that are thus determined. In contrast, the mechanistic view starts from the idea of uniform motion as the basic corporeal process. All non-uniform motions are supposed to result from the uniform motions of the minute parts of bodies. The pattern of motion that, on the plenum view, is Fenrir's body obviously exhibits important regularities and functional interconnections, allowing it to respond to the environment in characteristic

lupine ways, sustaining the pattern over time. It is, however, the more basic goings-on that determine the pattern rather than the other way around. Fenrir's chasing, eating, and digesting Dolly are simply complex outputs of a dynamical system. In this sense, the structure of the mechanistic universe is thoroughly *bottom-up*.

This difference in structure or ordering is, I believe, the source of the two realms distinction. On the one hand, Leibniz, as we have seen, agrees that the mechanistic conception is complete as an explanatory account of the corporeal universe. He thus accepts that corporeal processes have a bottom-up structure. At the same time, he holds that efficient causality and substantiality require final causes (activity or force), and thus a top-down order. As we saw, appetites follow from force in the sense of being determined as being for the sake of force. Yet, given its bottom-up structure, the mechanistic universe leaves no room for such top-down final causal ordering and thus not for substances. I believe it is here, rather in considerations about mentality, that we find Leibniz's basic reason for locating final causes beyond the mechanistic realm.

Why then does he so clearly link final causes to perception? As the answer turns out to be fairly complex, I will simply indicate the direction in which I think we need to look.

I noted earlier that the notion of perception is embedded in Leibniz's attempt to work out what it is for a substance to be an entelechy of an organic body conceived as a mechanistic system. We are now in a position to formulate the point more precisely. The notion of perception is supposed to be part of an account of how life activity as an end is related to the mechanistic system that is the organic body. In that case, we should not assume that the notion of perception is to be explained by appealing to some readily available notion of mentality or mind.[40] We may not only need to give up the view of appetite as directed to a represented *future* state. We may also need to rethink altogether the idea that the fundamental relation between perception and appetite is a matter of appetite being directed to a *represented* end—that is, the very idea of appetite and perception as functionally distinct types of state. Although Leibniz certainly sometimes talks as if they were, other texts suggest that the distinction is less clear-cut. In commenting on Bayle, Leibniz (using 'thought' broadly for 'perception') explains that "the soul, though completely indivisible, involves a compound tendency, that is to say a multitude of present thoughts, each of which tends

[40] In subsequent work, Rozemond (2019) draws attention to the way perception for Leibniz is to be understood in terms of activity, but she does not relate activity to final causes. See also Michael Hansen's "Leibnizian Perception and Sensation 'Consist in Certain Action'" (manuscript).

towards a particular change" (GP IV 562/WF 114). Here the relation of tendency or appetite to representation is not so much that of being *directed to* as being *constitutive of*. Tendency appears to be integral to the very nature of representation.

Such a view fits well with what seems to be a natural way of filling out the nature of the relation of a substance's life activity to the organic body, in particular in light of Leibniz's rejection of the first/second actuality distinction.[41] From a purely mechanical perspective, the process of Fenrir's eating Dolly is not for the sake of anything, but simply an output of a complex dynamical system resulting from the interactions of minute parts. At any moment of these processes there is, however, an ongoing life activity, comprising corresponding complex appetitive tendencies ultimately directed at sustaining life activity itself. In this way, a substance's life activity can be seen as expressing the mechanistic processes of the organic body *as* being for the sake of living. For example, as involving an appetite directed at the further stages of digestion of Dolly, Fenrir's life activity expresses the jaw motions *as* part of a digestive process directed at sustaining his living. My tentative suggestion is then this. Rather than being explained by a prior notion of mental representation, Leibnizian perception simply *is* the expression of the organic body by a substance's life activity.

7. Conclusion

I have presented an interpretation of Leibniz's defense of the internal end-directedness of substances as amounting to a defense of the traditional Aristotelian conception of the dependence of the efficient on the final cause. The key element he seeks to recover is the notion of a substance's ultimate end as its proper operation or activity. My interpretation importantly differs from a prevalent picture of Leibniz, on which he is supposed to follow a later scholastic current holding that end-directedness requires mentality based on considerations about the status of ends as future states. I have shown that such considerations do not seem relevant to the notion of final cause as proper operation, since the latter is in an important sense atemporal. Rather than locating the motivation for the two realms distinction in the immateriality of the mind, I have proposed that the distinction instead has to do with the top-down nature of activity. Finally, I have indicated how taking seriously the

[41] I believe this account also offers a different way of reading passages where Leibniz has been taken to be working with a conception of end-directedness as essentially involving a mental representation of future states (see, e.g., LS 23).

significance of activity as an end may offer an alternative account of the relation between perception and final causes—indeed, of the very nature of Leibnizian perception itself.[42]

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