Leibniz's Two Realms

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1. Leibniz's commitment to mechanism

Leibniz insists that any bodily event can be explained purely in terms of 'mechanism', meaning impact mechanics. The latter's laws are all quasi-causal (Sleigh's label) rather than causal; they describe patterns among events that are embedded in the universal harmony, and do not imply that any body acts on any other. When declaring how things must go in physics, Leibniz does not often remind us that his topic is quasi-causation, not real transeunt causation; but that is always his view. Similarly, in those contexts he seldom reminds us that bodies are phenomenal rather than basically real; but in the mature years that is always his view too.

In his claim for the power of mechanism, Leibniz is refusing to explain any particular events in terms of Aristotelian 'forms', e.g. appealing to 'the form of oak' to explain why an acorn develops as it does. In this he aligns himself with the Galilean revolution, which he sees has come to stay—'the great light of our age', he calls it. This may be less a philosophical opinion than a reading of where science is moving, and above all an upshot of seeing that after two millennia of virtual stasis science at last *is* moving. (See PAB, AG 319.[1])

Leibniz's support for 'mechanism' may be encouraged also by his denial that any material event can be explained through a mental one. The Galilean revolution may encourage that denial, but not to the extent of requiring it. Descartes was a prime revolutionary who firmly rejected the Aristotelian paradigm, yet he held that human behavior requires some input from an immaterial mind. Leibniz dissents: 'I attribute to mechanism everything which takes place in the bodies of plants and animals except their initial formation', he writes at *NE* 139. 'I do not approve of bringing in the soul when plant and animal phenomena have to be explained in detail' (*NE* 220). This holds for humans too.

Leibniz's faith in mechanism's extent draws strength from his conviction that the value of this world consists partly in how simple the quasi-causal principles are that govern it. Because, for him, mechanistic principles are unbeatably 'simple', his adherence to them pays tribute to God, 'the reason for the greatness or power in the mechanism of the universe as now constituted' (UO, AG 152).

My focus here is on Leibniz's view that all the events with which physics (including biology) has to do can be explained in terms of *efficient* quasi-causes. To explain any material

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[1] Abbreviated references are explained on pages 18–19.

event E, he holds, one needs to invoke only preceding events that quasi-made E occur; not to later ones that E was *for*. Yet he also gives teleological concepts a place in the truth about the world. How can this be? That is my chief question, and I shall evaluate Leibniz's answers to it.

2. Three roles for teleology

Firstly: Even if we completed a perfect total science, Leibniz holds, we ought still to ask: Why are *these* the basic principles of physics? His answer is teleological; the principles obtain because God wants them to do so:

> These laws of motion. . . cannot be explained by the mere consideration of efficient causes, or of matter. For I have found that we have to bring in final causes, and that these laws do not depend on the principle of necessity. . . but on the principle of compatibility, the choices of wisdom, that is. (PNG 11, FW 263)

This serves 'to clear the mechanical philosophy of the impiety with which it is charged' (DM 23, FW 75). It gives Leibniz—he says elsewhere—a basis on which to protest against 'the Spinozist view. . . which dismisses the search for final causes and explains everything through brute necessity' (*NE* 73; see also NI 3, FW 211 and DM 10, FW 61–2).

That first answer to my chief question raises no problem: a world wholly governed by mechanism could, obviously, result from the purposes of its creator. This, however, is philosophically uninteresting in Leibniz's hands, as in those of most Christian philosophers. They typically attribute activities to God without considering how he performs them, perhaps assuming that God needs no ways or means—no *how*—for doing anything, so that they can attribute purposes to him without inquiring into teleology as such.

Furthermore, the thesis about divine teleology does not imply that there is any *interplay* between teleology and mechanism. Yet Leibniz often commits himself to there being such an interplay; that creates the problems that I want to address; and Leibniz's first answer to my question brings no grist to that mill.

Secondly, teleological notions belong in biology, Leibniz holds. I have quoted him saying that mechanism covers all of biology 'except the initial formation' of plants and animals. Given that an organism exists, its life and procreation can be mechanistically explained, he seems to say, but the fact of its existence—the fact of those particles' being inter-related like that—can be explained only through God's purposes. I do not know how serious he was in this retreat from his usual doctrine that mechanism can explain every material event. It grates against several things in his philosophy; and I have found it only once in his writings, whereas the contrary view that mechanism covers everything is ubiquitous. For example, he hopes to reconcile 'those who hope to explain mechanically the formation of the first tissue of an animal and the whole machinery of its parts, with those who account for this same structure using final causes', and says that 'both ways are good' (DM 22, FW 75).

Anyway, insofar as Leibniz admits teleology in the 'except the initial formation' manner, he again provides me with nothing to discuss. In postulating a final-cause explanation for an event that cannot be explained in terms of efficient quasi-causes, Leibniz does not imply that the two sorts of explanation intersect in a manner that we should inquire into.

Final causes more often enter his biology through the concept of function. He writes, against Descartes, that biological structures give us evidence about God's purposes: 'The reasons for what was created by an understanding are the final causes or plans of the understanding that made them. These are apparent in their use and function, which is

why considering the use parts have is so helpful in anatomy' (AG 242).

The core of the concept of biological function was made clear in Wright 1976; critics have picked away around the edges, but the main idea is clearly correct. To say that the function of (C) the contraction of subcutaneous capillaries when the skin cools is to produce (R) a reduction in heat-loss is to say:

(1) C leads to R.

(2) It is *because* C to leads to R that the organism is so structured that C occurs.

In most cases, clause **(2)** is true for evolutionary reasons: the structures producing C have been selected for because they lead to R. There is nothing properly teleological about this; see my 1976: 78–80 for a defence of that.

However, Leibniz would have to support the concept of function differently. For him, as we have just seen, clause **(2)** is true because of God's purposes (see for instance DM 22, FW 74–5), and of course purposes *do* bring in genuine teleology. But in this context as in others, Leibniz is not philosophically curious about the concept of teleology as applied to God; nor does he carefully explore the question of how these purposes of God make themselves felt in a material world wholly governed by mechanism.

Thirdly, Leibniz deploys notions that he takes to be teleological in the thick of doing inorganic physics, and not merely in reflecting on why its basic principles are true. Although 'the [mechanistic] way of efficient causes is deeper and in some sense more immediate and *a priori*',[1] nevertheless 'The way of final causes is. . . frequently of use in discovering important and useful truths which it would take a long time to find by the other, more physical route' (DM 22, FW 75; see

also SD, FW 163–4). Although he says 'frequently', Leibniz seems to have only one example of this; it is the only one he cites, and he cites it often. It is Snell's law, which relates the angles of incidence and of refraction whenever light passes between two translucent mediums. Leibniz takes this to imply that the light always follows 'the easiest, or anyway the most determinate, way to pass from a given point in one medium to a given point in the other' (TA, L 479). I shall go along with this, on the strength less of his obscure explanation than of Feynman 1963: 26.4.

Snell offered his law in a paper which does not survive and which Leibniz did not see. The law was first published by Descartes, who sought to derive it mechanistically from an opaque *mélange* of points, principles, and models. Leibniz published a supposed demonstration that the law could be reached by asking what he took to be a teleological or final-cause question, namely "What path for a light ray would be the easiest to get from A to B?'. He conjectured that Snell *did* reach it in that way, and that Descartes had not discovered it for himself but merely took it from Snell. Of Descartes's explanation of the law he writes:

> It is extremely forced and too hard to understand.. . . It is an afterthought adjusted somehow to the conclusion, and not discovered by the method he gives. So we may well believe that we wouldn't have had this beautiful discovery so soon without the method of final causes. (TA, L 480; see also DM 22, FW 75)

This does not repeat the old point that patterns in nature bring in teleology through the thought that God purposefully instituted them. Rather, Leibniz is now saying that some of the patterns are teleological, so that one might be helped to discover them by asking teleological questions.

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[1]   For Leibniz (sometimes) and his predecessors, an *a priori* explanation of P explains why it is the case that P, whereas an *a posteriori* one merely provides reason for thinking that P is true.

Granted that Leibniz's easiest-path formulation accurately expresses Snell's law, why call it teleological? Most writers in this area take Leibniz's word for it, but he and they are wrong. Of course we *can* talk about God's wanting the light to follow the easiest path; but so we can about any physical law. 'Newton's gravitational law reflects God's desire that the relative acceleration between two otherwise isolated bodies should vary inversely with the square of the distance between them.' No-one who had *worked* on teleological concepts *per se* would count Snell's law as teleological.

If it is so, then Leibniz ought to explain how events in a mechanistically patterned material world can be revealed by asking teleological questions. He does not try to.

3. Teleology within the individual monad

Fourthly, Leibniz claims to build teleology into his ground-floor metaphysic of monads: 'There are only monads, and in them there is only perception and appetite.' The word 'appetite' implies a claim to teleology, which is reinforced by much that Leibniz writes, including this: 'The laws of appetites [are] the laws of the final causes of good and evil' (PNG 3, FW 259).

The basic account of appetite is straightforward. Whereas a perception is a short-lived intrinsic state of the monad, an appetite is the monad's endogenous change from one state to another: 'The action of the internal principle which brings about change, or the passage from one perception to another, can be called appetition' (Mon 15, FW 269). In the case of humans, Leibniz writes to Remond, 'appetite is called will' (G 622), which repeats the teleological claim.

Momentary states of a monad correlate with the rest of the universe in such a way as to carry information about it; and that thesis, which lies deep in Leibniz's metaphysic, gives colour to calling such states 'perceptions'. Nothing

comparable supports designating as 'appetition' a monad's change of state. Such changes are caused from within the monad; and that is a point they have in common with voluntary action, which we ordinarily think of as endogenous rather than forced from without. But that is a thin likeness. Unlike our ordinary voluntary/involuntary concept, this one draws no line through the monad's life, because according to Leibniz every monadic change is caused from within.

Furthermore, an account of the will should provide for attempts that fail, as when one tries and fails to meditate on God or to stop thinking about Istanbul. Leibniz offers to provide for that, through the notion of *tendency*. Sometimes he says that appetitions *are* tendencies (PNG 2, FW 259), but all he needs here is his more usual view that an appetition involves or manifests a tendency:

> The action of the internal principle which brings about the change or passage from one perception to another can be called appetition; it is true that the appetite cannot always completely reach the whole perception toward which it tends, but it always obtains some part of it, and reaches new perceptions. (Mon 15, FW 269)

So an appetite may tend towards something without reaching it. The only clear examples I can find of unrealized tendencies involve a thing's tending to become F but not doing so because of some fact about its environment; but the tendencies of Leibniz's monads cannot be like that, because they are perfectly self-contained, never acted on from outside.

Even if he can overcome that difficulty, Leibniz's account of monadic appetite does not justify his re-descriptions of it in such teleological terms as 'final causes' and 'ends and means'. His fundamental theory says only that the individual monad runs through its history in accordance with laws given to it by God, laws which govern the efficient causality of its unfolding. I agree with Robert Adams:

The language of 'appetite' and 'ends and means' may be somewhat misleading. It suggests the pursuit of a desired future state of affairs, but the action of a Leibnizian substantial form is more like what is sometimes called 'acting on principle'. In Leibniz's view, the 'internal principle' governing 'the passage [of a substance] from one perception to another' is not based on the desirability of the later perception in itself, but rather on the following of certain laws of nature. (Adams 1994: 318)

There seems to be no followable route from Leibniz's basic metaphysic to the notion of doing something for the sake of an end, let alone the more fully teleological notion of doing something because one thinks it will lead to a certain end.

Writing informally about the human condition, Leibniz makes free with intentions and purposes; but when his metaphysic is close at hand he has little to say about teleology except for the blank assertion that final causes reign within the monad because of appetition. The only passage I can find where he puts a little flesh on those bones is this strange one:

> Since the nature of a simple substance consists of perception and appetite, it is clear that there is in each soul a series of appetites and perceptions, through which it is led from the end to the means, from the perception of one object to the perception of another. (MP 175)

The monad, we are told here, is led 'from the end to the means', *a fine ad media*. That seems to imply that appetition involves genuine teleology, in which ends, or anyway thoughts of them, help to explain means. If that were Leibniz's point, something would be seriously wrong. In his metaphysic the move from one perception to the next is a matter of efficient causation; if it were also a move from end

to means, that would subject teleology to Spinoza's jibe that it absurdly 'reverses the order of nature', treating effects as causes. Of course Spinoza was wrong about that: in treating ends (or thoughts about them) as explanatory, teleology does not treat effects as causes; it does not imply that when I stretch out to pluck the apple from the tree, the plucking *causes* the stretching. Yet that is what Leibniz commits himself to if he holds that the efficient-causal move from one perception to the next involves going 'from the end to the means'. I hope that it was a slip of the pen, although 'through which it is led from the means to the end' would hardly have been better.

Adams' criticism and mine rests on our seeing Leibniz as a thoroughly bottom-up philosopher, not a partly top-down one. Leibniz's theory-building proceeds in a strictly upwards direction: he aims to develop his metaphysic in an austere way, allowing himself the concepts of logic and mathematics, and those of *substance*, *quality*, *time*, *correlation* and little else, not availing himself of concepts from folk psychology with no warrant except their familiarity. For him, I contend, our psychological concepts are to be clarified and justified by being developed out of the parsimonious initial stock of concepts. A partly top-down project would allow him to import into his monadic metaphysic concepts taken unanalysed from armchair psychology. Then he might explain appetition partly through the idea that such changes have something *volitional* or *purposive* about them—with those concepts being taken on board, unexplained, on the strength of their quotidian familiarity to us. That would get him out of trouble that he otherwise has, but at a high price in philosophical interest. Leibniz's actual bottom-up project is potentially illuminating because when we see a great philosopher try to make bricks without straw, we can learn something about the right way to make bricks.

4. Two realms

Let us now join Leibniz in supposing that he has established teleology in the individual monad, and examine what structure he erects on that foundation.

According to Leibniz, an organism is an infinitely complex machine associated in a special way with a single monad, its mind. Although he sometimes writes as though he were a realist about the material machine, his real view is that it is the appearance to us of an aggregate of monads. Its mind, on the other hand, can only be thought of as a single monad, and thus ultimately real in Leibniz's metaphysic. So when he contemplates an animal, Leibniz is attending at once to phenomenal matter and to a real monad. He holds that the former should be intellectually handled purely in terms of efficient quasi-causes or mechanism, the latter partly in terms of final causes or teleology:

> Souls act according to the laws of final causes, through appetition, ends and means. Bodies act according to the laws of efficient causes, or of motions. And the two realms [*règnes*], that of efficient causes and that of final causes, are in mutual harmony. (Mon 79, FW 279)

This two-realms doctrine, asserting the harmony of the mechanistic and teleological orders, is my topic in this and the next three sections.

The final/efficient duality of realms risks being muddled with two other dualities. Each muddle is hinted at in a passage where Leibniz writes of the two realms:

> These realms are governed each by its own law, with no confusion between them, and the cause of perception and appetite is no more to be sought in the modes of extension than is the cause of nutrition and other organic functions to be sought in the forms or souls. (CT, L 409–10)

Of course perception and appetite, being properties of monads, could not be causally explained in terms of 'modes of extension', that is, of phenomena rather than basic reality. So they lie outside the range of 'mechanism' when this is understood as the physics of bodily collisions. But the duality we are tracking is that of

> **(1)** efficient causality and final causality,

not that of

> **(2)** impact mechanics and something else.

The monadic status of perception and appetite does automatically put them on the right in contrast **(2)**, but not in **(1)**, which is my topic. On the face of it, as Adams pointed out, the causality within the monad belongs on the *left* of **(1)**.

The other possible muddle is the confusion of **(1)** with the duality of

> **(3)** necessity and freedom.

There are hints of that in the passage from which I have been quoting. Just before the bit last quoted, Leibniz writes: 'Nature has, as it were, a dominion within a dominion, a double realm [*regnum*] of reason and necessity—that is, of forms and of material particles.' The phrase 'reason and necessity' hints at **(3)**: Leibniz does sometimes connect reason with freedom, and the link between 'necessity' and **(3)** is obvious.

Less obvious, but perhaps more potent, are the implications of the phrase 'a dominion within a dominion' (*imperium in imperio*). Spinoza had used this very phrase to characterize a supposed error: 'They seem to conceive man in nature as *imperium in imperio*. For they believe that man disturbs rather than follows the order of nature' (CWS 491). Now, Spinoza was defending **(3)** determinism against radical freedom, rather than **(1)** mechanism against teleology; but I don't doubt that Leibniz steered for this collision, and his doing so suggests that he was at risk of collating **(1)** with **(3)**.

Are these two dualisms different? Well, on most reasonable understandings of what freedom is, it *involves* teleology. But the two are not equivalent: we have a clear enough idea of a creature that acts in accordance with what it believes will achieve certain goals, but which is utterly in thrall to its goals, having nothing that we could recognize as freedom. It is confusing, to say the least, for the realm of teleology to be labelled as the realm of freedom.

Furthermore, for Leibniz as for many others, the freedom question is tangled with issues about the scope of deterministic causation, the latter being pointed to by his reference to reason and 'necessity'. When 'freedom' is looked at in this way, teleology is not necessary for it. Leibniz speaks of God (and sometimes even of humans, alas) as acting from sources which 'incline but do not necessitate'. This offers freedom of a kind, but through a weakened, non-deterministic, *efficient* causality; it has nothing to do with teleology.

5. Hidden harmony between the two realms

Accepting for discussion's sake that each monad has a teleological aspect, let us now ask: Does that mental teleology relate to the material organism in such a way that it too can be characterized in teleological terms?

If Leibniz said No, he would be drawing a picture in which mental teleology does not spread to the material organism: the mind's wants and goals have no bearing on the physical behavior of the organism. Either the mind cares only about itself, or it cares about the body too, and is nearly always frustrated. This repellent scene is not Leibniz's. An ensouled animal (which he here calls a 'corporeal substance') belongs to both realms, he says. Their laws are very different, he continues, but God 'brings it about that two very different series in the same corporeal substance respond to each other and perfectly harmonize with each other' (CT, L 409). This

harmony is between teleological events in the mind and a mechanistic ones in the body. Leibniz is plainly paving the way for the mind's appetitions to *have something to do with* what happens in the body; presumably wanting to provide a metaphysical underlay for common beliefs about how goals and purposes are exhibited in behavior. How, then, are the two series harmonized? With what specific relation do we cash in 'have something to do with'?

Leibniz gives one answer when he relates appetitive events to bodily ones through his general view that all events in one's mind closely mirror events in one's body. He usually states this in terms of perceptions or sensations:

> It is thoroughly reasonable that the effect should correspond to the cause; and how could one ever be sure that it does not, since we have no distinct knowledge either of the sensation of blue (for instance) or of the motions which produce it? It is true that pain does not resemble the movement of a pin; but it might thoroughly resemble the motions which the pin causes in our body, and might represent them in the soul; and I have not the least doubt that it does. (*NE* 131–2)

So far as this concerns color sensations, it has turned out to be right (Hardin 1988: 133). To speculate that it holds for all sensations of whatever kind, however, is bold indeed.

Leibniz goes further still. He applies the thesis to our conative as well as to our cognitive and sensory states, and to regular accompaniments that are not even quasi-causes; and that yields an answer of a sort to my question about how mind 'harmonizes' with body. Here is the clearest statement of it that I have found:

> There is an infinity of shapes and motions, present and past, which play a part in the efficient cause of my present writing; and there is an infinity of tiny inclinations and dispositions of my soul, present and past, which play a part in its final cause.[1]

This conjectures that the flurry of sub-microscopic material events leading to my hand's going up is mirrored by a dense cloud of mostly unconscious conative items—pros and cons, inclinations of my soul—whose resultant is that I choose to raise my hand.

That is too wildly speculative to be a soberly interesting suggestion for how the two realms might harmonize. Anyway, it does not yield the kind of harmony that I am inquiring after. What Leibniz ought to want, and what his rhetoric seems to promise, is a metaphysic which underpins our ordinary common-sense attributions of goals, wants etc. to human and other animals. The teleology that we are supposing to reside in the animal's 'dominant' monad ought to harmonize not with the neural goings-on in my body but with my observable behavior. That is the need that Leibniz should try to meet.

6. Teleological patterns in behaviour

Anything like a credible solution to this problem must avail itself of the idea of a *teleological pattern* in an animal's behaviour. As a first approximation, we can say that it is a pattern which makes the behaviour at least prima facie a candidate for being brought under teleological concepts. Then the thesis of two harmonized realms will say that the real teleology that (we are supposing) is present in the appetitions of an animal's mind or dominant monad matches the teleological patterns in its behaviour. In a nutshell: its behaviour will prima facie support the attribution to it of food as a goal when and only when its mind is the subject of a desire for food, an intention to get food, or the like. I have not found Leibniz writing explicitly about teleological patterns in animal behaviour; but they have to be part of any story that captures our ordinary beliefs and assumptions about the goals and purposes of animals, including ourselves.

Teleological patterns would not be needed if we settled for *point-blank* teleology. This involves the simplest possible relation of wants to movements: when an animal's body undergoes a turn of the head or an opening of the mouth, point-blank teleology says that the animal wanted or intended to make that very movement. End of story. That is too flat and featureless to be of any use. One mark of its degeneracy is that although it would provide 'explanations' of a sort—'Why did he jump?', 'Because he wanted to'—it would not yield even the beginnings of a hint of a tentative prediction.

A teleology worth having must be not point-blank but *long-distance*, providing for the idea that the animal moves thus in order to bring about some later state of affairs. For point-blank teleology, we have only to look to the given animal movement; it is automatic and easy. Long-distance teleology, however, requires us to pair a movement and with some subsequent possible state of affairs; and to select the latter we need rules, criteria, principles, general theory. These will serve to delineate the teleological patterns in the behaviour.

In sketching these I shall borrow from previous publications of mine, but I do not claim ownership. The central ideas inform the work of most competent workers in this

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[1]   Mon 36, FW 272–3. Something similar appears at the top of *NE* 56. Leibniz there seems to assign the conative role to perceptions, but I suppose he means *changes of perception*, i.e. appetitions.

field today, though I have laid them out more explicitly than most (1976).

The needed principles rely on two ideas: that purposive behavior ordinarily reflects character-traits, purposes that the animal often has; and that a fair amount of purposive behavior succeeds. These two jointly yield the crucial notion of a teleological pattern of the form:

> For any action-kind A of which Animal is capable, whenever it is so situated that performing an A will lead to G, Animal performs the A.[1] If Animal is so placed that digging would bring it food, it digs; if swimming would bring it food, it swims; if jumping would bring it food, it jumps.

That prima facie qualifies Animal to count as a food-seeker. For a given animal there is a teleological pattern for each relevant value of G.

For this to be realistic, the generalizations defining the patterns must be weakened, to allow for non-performance because of competing goals, physical incapacity, satiety, and so on. Also, provision must be made for failures. These are ignored by the formula I have offered, which says that Animal does A whenever doing A *would* lead to G. The remedy for this also repairs another flaw in the account as so far given.

The remedy is to change the teleological patterns from '...whenever performing an A *will* lead to G...' to '...whenever *Animal thinks that* performing an A will lead to G...'. That allows for failure resulting from error about means and ends. It also heads off the complaint that it would be miraculous if Animal's behaviour were to depend on how it *is* situated rather than on how it thinks it is situated. (Leibniz would agree; see NI, FW 211.)

Other fine-tuning is also needed, but this is not the place to go into all the details.

That is what Leibniz needs if he is to round out his account of human teleology. In the 'realm' of the organic machine there will be events that fall under teleological patterns of something like the kind I have sketched; in the 'realm' of the dominant monad there will be corresponding appetitions. I have not found Leibniz explicitly laying out anything like the concept of teleological pattern that I have sketched. But there is no obstacle to his having it, and it is at least hinted at in things he writes, such as: 'Volition is the effort or endeavour (conatus) to move towards what one finds good and away from what one finds bad, the endeavour arising immediately out of one's awareness of those things' (*NE* 172). This, however, needs work. A teleological scheme in which the central idea is that animal tries to do what it finds good is close to vacuous; it needs to be replaced, for each individual animal, by something that says *what* the animal 'finds good'; which is what my teleological patterns do.

7. Harmonizing teleology with mechanism

Given teleological patterns in an animal's behaviour, and wanting to use them in explanations, what are we to do about the mechanistic explanations that we think are always appropriate? This is the problem of how to *harmonize* the teleological and mechanistic realms without letting the former carve off for itself any of the territory that would otherwise belong to the latter. It confronts all of us who think that teleological explanations can be legitimate although every event can be explained mechanistically.

The best and probably only solution for it has informed the work of various philosophers for several decades, most notably that of Daniel Dennett, though I may have done most

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[1]   I owe the idea of such a generalization to Taylor 1964. My most recent development of it is in my 1991a.

to make it explicit (in my 1976: 72–8). Its crux is the idea that a teleological pattern, although each instance of it can be explained mechanistically, may not correspond to a single mechanistic explanation.

For any value of A within the repertoire of this thermostat, whenever its doing A would bring the room's temperature nearer to 68 degrees, it does A; yet we do not credit it with having a 68-degree room as a goal. What justifies our reluctance? The obvious answer, 'It is an artifact, and so not alive, and so does not have goals', goes too fast and throws no light. A better answer says that we do not attribute a thermal goal to the thermostat because the entire range of its behavior falling under the teleological pattern admits of a single mechanistic explanation: the gap between its temperature and 68 degrees causes a strip of metal to expand or contract, that opens or closes a switch, and that controls the flow of electricity which controls the temperature. That covers the entire teleological pattern. Because the teleological account of the thermostat's pattern of behavior is matched by a single mechanistic account, the latter should prevail and we should reject the former as having no honest work to do (Taylor 1964: 29).

Now consider an animal with a large repertoire of food-seeking behaviors, triggered by a range of different sensory clues: various sounds, smells and sights lead it to dig, swim, run, climb and so on. Each episode can be explained mechanistically in terms of how sensory inputs stimulate nerves, and how neural outputs make muscles contract; but the episodes employ different mechanisms; no unitary mechanism covers the whole range of them. So the teleological explanation in terms of food-seeking provides a grouping of episodes—a way of understanding the animal—which no mechanistic explanation delivers, and our concerns and interests may make that of value to us. Complete knowledge

of the whole mechanism for each episode, even if we had it, would not exhibit the *pattern* that the teleological explanation yields; so the latter earns its keep by doing work that mechanism cannot do. For more about this, see my 1976: 72–8; Dennett 1978.

I cannot see any obstacle to Leibniz's having these thoughts, and accepting them. Indeed, a unitary teleological pattern arising out of a swirling cloud of different mechanistic ones should strike him as a fine example of the kind of 'harmony' that God in his greatness can achieve. But I have no evidence of Leibniz's thinking any of this. The little he says on the harmonizing of the two realms is strikingly perfunctory, and is always based on the assumption that the teleological realm is mental and the mechanistic physical. This is typical: 'It is not only the voluntary inner acts of our minds which follow from this conatus, but outer ones as well, i.e. voluntary movements of our bodies, thanks to the union of body and soul which I have explained elsewhere' (*NE* 173).

How did we get into this situation? Leibniz was offering to harmonize mental teleology with the material behaviour of animals (including humans); I said that for that we needed to know what sort of physical behaviour is involved; and in developing that story I seem to have provided a sufficient basis for teleological concepts in animal behaviour considered on its own, without bringing mental appetitions in at all. I did bring in what the animals believes; but the account could be developed in such a way as to extrude even that mental element; and in any case that is (in Leibniz's terms) an appeal to the monad's perceptions but not to its appetitions. What has happened?

I cannot draw any interesting moral from this situation. It seems to me that Leibniz simply did not think hard about the essentially explanatory nature of teleological concepts. He had presumably some notion of the kind of behaviour

that could plausibly be handled teleologically—behaviour falling into teleological patterns—and thought of instances of such patterns as merely *accompanied by* corresponding appetitions in the dominant monad. That is a plausible enough position. Someone who looked at a thorough account of animal teleology of the sort I have been sketching, and saw that it could draw the needed distinctions, yield the wanted predictions and explanations and so on, might still think that something is missing. 'For an animal's movement to be explained by its having a certain goal,' he might say, 'there must be an internally felt *wanting* or *intending*. The story you have told lacks the experienced heart of teleology, which resides in the mind and not in behavioural patterns.' We can see Leibniz's two-realms story as an attempt to give that objector what he wants. It is a prima facie reasonable thing to want to do; but we should bear in mind that while it aims to supply teleology with its felt, experienced, inward aspect, it contributes nothing to its *workings*.

8. Teleology as explanatory

I now confess to a major gap in the teleological story that I have told; and I need to investigate whether monadic appetitions could fill it. As I have just implied, teleological concepts are nothing unless they are explanatory: identifying an animal's goals is *essentially* a matter of discovering certain explanations for some of its behaviour. Attempts to identify goals in a spirit of mere description, with explanation perhaps coming later, have always come to grief. (For some details see my 1976: 42–6.) So far, I have provided nothing to secure that the patterns are explanatory rather than coincidental. Given that Animal conforms to a mouse-catching pattern, we shan't attribute to it the goal of catching mice unless we think that on most occasions when it does what it thinks will give it a mouse it does so *because* it has that

thought. The mere existence of that pattern is not enough; there must be something about it that makes it explanatory. (The account I gave in my 1976 did not meet this requirement. I remedied the omission in my 1991a,b.)

One might think that monadic appetitions can enter at this point, playing a working role: 'Leibniz can say that what makes it legitimate to explain the animal's movements in terms of a mouse-catching goal is the existence at the same time of a towards-mouse-catching appetition in its dominant monad.' It is not clear how that would work. For the pattern to have explanatory force, one would have thought, is for it to be more than merely coincidental; and it not clear how *that* is headed off by the existence of a certain mental event each time the pattern is instantiated. It might be different if the appetition functioned as the cause of the behaviour; then the pattern would drop out of the picture, for the behaviour would be causally explained purely by the occurrence of the appetition. But Leibniz will not say that, for it involves transeunt causation, which he firmly and deeply denies; and it involves giving a material event an explanation which supplants any mechanistic one, which he comprehensively condemns.

What does solve the present problem has nothing to do with mentality. What is to be ruled out is the possibility that it is a sheer coincidence that this animal houses a multitude of mechanisms which jointly make it a mouse-getter. For the behavior caused by those mechanisms to be appropriately *explained* in terms of mouse-seeking, it must be the case that the animal contains that package of mechanisms *because* it has the over-all effect of making the animal a mouse-getter.

That could be the case for any of three reasons. **(i)** God's purpose in building that package of mechanisms into the animal was to make it a mouse-getter. **(ii)** The animal contains that package because they were evolutionarily selected

for; their effect of making their owners mouse-getters was selected for. **(iii)** The individual animal has assembled that package within itself through a process of learning what clues indicate mice and what behaviour leads to catching them.

I believe that **(ii)** and **(iii)** cover the ground. Leibniz, having not heard of **(ii)** and being a theist, could and presumably would think that **(i)** and **(iii)** between them exhaust the cases. That, so far as I can see, would not set up any special strains within his over-all philosophy; but would still leave appetites idle.

9. Locke's theories of motivation

Leibniz apparently offers to provide for the conative side of the human condition by appetitions. I have argued that their teleological nature is dubious at best; the shape of their fit to bodily behavior is seriously under-described; and they are given no proper explanatory role.

These deficits show up when in the *New Essays* Leibniz writes about the conative, motivational side of the human condition, doing so more fully and freely (I think) than any-where else in his work. The prompt for this is the treatment of motivation in Locke's *Essay* II.xxi. Leibniz's comments on this material are lively, energetic, and supremely intelligent; they are also friendly and collaborative, as befits his judg-ment that Locke here 'makes especially evident the depth and penetration of his mind' (*NE* 164). Furthermore, they tap into Leibniz's benevolence and decency: his interest in issues about motivation is energized by their bearing on people's moral well-being (see *NE* 191).

Leibniz is here focussing sharply, intensely, and with moral concern on the voluntary behavior of humans, putting

himself under pressure to do the best he can to get straight about this matter. We shall find that these heartfelt pages draw no sustenance from his metaphysical doctrines—of monadic teleology and of the 'two realms'—and indeed that the pressure of what he wants to say drives him ever further away from those doctrines. He employs the key term 'appeti-tion', but the deeper he gets into his topic the less teleological appetitions become. Eventually, they have nothing to do with forethought, purposes, intentions or the like; Leibniz explicitly divorces them from all that, which he hands over to a different faculty—*reason*. Properly to present all this, I must set the scene.

Locke first held that a person always acts for what he thinks to be his own good, so that self-harming behaviour always involves ignorance or error about consequences.[1] He rightly came to doubt this, and offered a second theory which expands on the first by postulating a mediating link in the causal chain from value-judgments to volitions:

> Good and evil, present and absent, 'tis true, work on the mind. But that which immediately determines the will from time to time in every voluntary action is the uneasiness of desire fixed on some absent good. (*Essay* II.xxi.33)

To the thesis that *A judgment about comparative good causes an act of the will* Locke now adds the further detail that *It does so through an intermediate item, a state of uneasiness*. Uneasiness acts reliably on the will, he holds, but the power of value-judgments to cause it is an unsteady affair. Someone who is sure that fornicating will bring him some transient pleasure yet cost him an extra decade in Purgatory may nevertheless proceed with his sexual adventure because the thought of that decade makes him less uneasy than does the

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[1]   This theory occupies eleven sections that run across the bottoms of pages 248–273 in the Nidditch edition. The theory with which Locke replaced it occupies *Essay* II.xxi.28–59.

thought of remaining chaste. Thus, akrasia does not have to be explained in terms of error about consequences.

Locke regards his uneasiness theory as virtually standing to reason: 'When a man is perfectly content with the state he is in, which is when he is perfectly without any uneasiness, what industry, what action, what will is there left but to continue in it?' (34). My trying to bring about some state of affairs S is intelligible (he argues) only if I am dissatisfied with the present non-S state of the world. My awareness that the non-obtaining of S is unsatisfactory to me is my uneasiness—my sense of something wrong—and in acting I attempt to cure it by making S obtain. This was a mistake on Locke's part. It is simply not true that voluntary action is intelligible only as an attempt to improve on the present. Purposive action involves comparing a possible future not with the present but with other possible futures; (I have not been convinced by the defence of Locke and Leibniz against this criticism by Vailati 1990: 214–16.)

This error of Locke's is repeated, more subtly but quite definitely, in Leibniz's commentary on him. His account of human activity is permeated by the Lockean idea that voluntary behavior is always remedial, always directed towards putting us at our ease. We shall see this helping him to move away from real long-term teleology towards a mere itch-scratching that is not clearly teleological.

10. Leibniz's response to Locke's theories

Though he thinks that Locke dismisses his first theory too briskly, Leibniz agrees with the second: something like uneasiness mediates between value judgments and the will. But there is a difference. Where Locke thinks of episodes of uneasiness as fully present to consciousness, Leibniz says that they may be barely noticeable or even lie below the threshold of awareness. I shall use 'disquiet' for the

phenomenon Leibniz is talking about; he calls it *inquiétude*, which Coste had used to render Locke's 'uneasiness', but Leibniz says that that was a bad translation.

Leibnizian disquiet, because it can be subliminal, plays a very different role from the one that Locke assigns to uneasiness. In the preceding chapter, before Locke has come to his theories of motivation, Leibniz ushers in disquiet, which he describes as 'imperceptible little urges which keep us constantly in suspense'. (The implication that episodes of disquiet are all 'imperceptible' is not his usual view about them.) He further characterizes the 'little urges' or 'disquiets' thus:

> These impulses are like so many little springs trying to unwind and so driving our machine along. . . That is why we are never indifferent, even when we appear to be most so, as for instance over whether to turn left or right at the end of a lane. For the choice that we make arises from these insensible stimuli, which, mingled with the actions of objects and of our bodily interiors, make us find one direction of movement more comfortable than the other. (*NE* 167)

This aims to unify the entire range of human behavior—from your deliberated career choice right down to your crossing your legs without thinking about it. Here as elsewhere Leibniz gets long mileage out of his view that some mental states lie below the threshold of awareness.

But there is trouble. In the next chapter Leibniz will openly identify the episodes of disquiet, the 'impulses', with appetitions (*NE* 190); those are features of monads, so that 'these insensible stimuli' should belong to the mentalistic part of the story he is telling. Yet he speaks of them as 'mingling' with bodily events: at the end of the lane I turn left because of insensible mental stimuli mingled with a slight breeze blowing that way and a faint pain in one knee.

I cannot see what sort of 'mingling' this could be, consistently with Leibniz's metaphysic.

A worse trouble, alluded to above, is that the picture Leibniz is drawing here does not seem teleological; it is too much like mere itch-scratching. That is even more true of what he writes next:

> In German, the word for the balance of a clock is *Unruhe*—which also means disquiet; and one can take that for a model of how it is in our bodies, which can never be perfectly at their ease. For if one's body were at ease, some new [event] would at once alter the balance and compel those parts of the body to exert some tiny effort to get back into the best state possible; with the result that there is a perpetual conflict which makes up, so to speak, the disquiet of our clock.

This charming passage has nothing teleological about it. But then it is explicitly about 'the body'; so one might think that Leibniz means here to be writing about only one of the two realms. But not so. In the following chapter, *NE* II.xxi, Leibniz openly identifies disquiets with appetitions, and says that they 'stimulate the will' (*NE* 189).

All of this, then, falls within the ambit of the 'two realms' doctrine, and ought to be anchored in Leibniz's basic metaphysic of teleology. However, it is not. That metaphysic says that each monad falls within a realm of final causes, but all Leibniz is offering us here are spurs, springs, imbalances—*efficient* causes. Here is the climax:

> These appetitions, whether small or large,. . . are truly the first steps that nature makes us take; not so much towards happiness as towards joy, since in them one looks only to the present, but experience and reason teach us to govern and moderate them so that they can lead us to happiness. . . Appetitions are like a stone's endeavour to follow the shortest

but not always the best route to the centre of the earth; it cannot foresee that it will collide with rocks on which it will shatter, whereas it would have got closer to its goal if it had had the wit and the means to swerve aside. In the same way, by rushing straight at a present pleasure we sometimes fall into the abyss of misery. That is why reason opposes appetition with images of greater goods or evils to come, and with a firm policy and practice of thinking before acting and then standing by whatever is found to be best. . . (Ibid.)

Although twenty pages earlier Leibniz seemed to make disquiet drive the whole range of human motivation, he now assigns the 'spurs' and appetitions to the stupid, obsessed, thoughtless part of our conative nature. In fact, he has been implicitly doing this all through, but now it comes to the surface because the spurs—now openly called 'appetitions'—are contrasted with another element in the human condition, namely 'reason'. Whereas in appetition 'one looks only to the present', reason brings a concern for what is 'to come': reason is forward-looking, and able to control appetitions, redirecting them and perhaps lessening their force. The teleological load in Leibniz's account of the human condition, we now find, is carried purely by 'reason'. Let us see whether Leibniz has prepared reason for this task, and what task it is. I give these a section apiece.

11. The place of reason in Leibniz's metaphysic

Whereas all monads have appetite, in Leibniz's scheme of things, only high-grade ones have reason. Those high-grade monads are marked off by having more *distinct perceptions* than do the rest: more of their perceptions are distinct, or their perceptions are on average more distinct, or. . . . It seems that Leibniz never fine-tunes this doctrine, but always leaves it vague: 'Monads. . . are limited and differentiated

by their level of distinct perception' (Mon 60). Nor does he explain in fundamental terms what the distinctness of a perception consists in. The best attempt I know to fill this gap for him is Brandom 1981, and even that is open to question (see Bennett 2001: section 125). Having noted these two lacunae, let us press on: let us take it that Leibniz selects a subset of monads in terms of something called distinctness of perceptions, and see what he does with that.

He thinks it is the source of three other differences: high-grade monads differ from the rest, he maintains, in having **(a)** memory, **(b)** (more) awareness of their own states,[1] and **(c)** reason.

(1) Leibniz holds that every monad at every moment contains traces from which its whole past could in principle be read off; and to have a memory, properly so-called, is to be reflectively aware of such a trace. The 'insensible perceptions', of which one is not aware, merely 'preserve the seeds of memory' (*NE* 239–40). So **(a)** memory is drawn in by **(b)** reflective awareness, and does not need separate discussion.

(2) Leibniz sometimes ties our awareness to distinctness, writing that we are unaware of many of our perceptions because they are not distinct enough. He links this theme with his further thesis that perceptions may escape our notice or reflective awareness because they are 'too minute' (*NE* 164), are 'not forceful enough' (*NE* 54), go by too fast (see *NE* 403), or are too uniform:

> There is in us an infinity of perceptions, unaccompanied by awareness or reflection; that is, of alterations in the soul itself, of which we are unaware because these impressions are either too minute and too numerous, or else too unvarying, so that they are not

sufficiently distinctive on their own. (*NE* 53)

So we have Leibniz maintaining that we are aware of our perceptions to the extent that they are large or forceful, conspicuously varied, and fairly slow-changing. I do not think that these three features *define* 'distinct' for him, but they accompany distinctness; perceptions that lack them Leibniz often calls 'confused'.

(3) When he writes about reason as a faculty, Leibniz often calls it 'intellect': 'We should undertake the analysis of them. . . by reason in so far as they can be made more capable of being treated by the intellect' (*NE* 120); 'These depend upon intellectual truths, grounded in reason' (*NE* 444). Also, he assigns to 'intellect' matters such as the exploration of necessary truths, which he also assigns to 'reason', as in his reference to 'Intellectual ideas, from which necessary truths arise' (*NE* 81). Now consider this:

> We are aware of many things, within ourselves and around us, which we do not understand; and we understand them when we have distinct ideas of them accompanied by the power to reflect and to derive necessary truths from those ideas. . . 'Understanding' in my sense is what in Latin is called *intellectus*, and the exercise of this faculty is called 'intellection', which is a distinct perception combined with a faculty of reflection, which the beasts do not have. Any perception which is combined with this faculty is a thought, and I do not allow thought to beasts any more than I do understanding. So one can say that intellection occurs when the thought is distinct. (*NE* 173)

Any intellectual activity (reasoning) involves *thoughts*, and Leibniz says that to have a thought is just to have a distinct

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[1] 'Awareness' is the correct translation for Leibniz's *apperception*. To use 'apperception' as an English word is historically insensitive and linguistically absurd. For details see Bennett 2001: section 113.

perception and a reflective awareness of it.[1] Analogously, to do carpentry one needs sharp tools and a good grip on them. Of course there is more to carpentry than that; having firmly grasped a fine chisel one should then do something with it; and Leibniz presumably also held that for reasoning or intellection one must operate in certain ways on the distinct perceptions/ideas of which one is reflectively aware. But he does not say anything about what those activities are—or, anyway, he does not relate them to the terms of his basic metaphysic. I cannot find him explaining why it is that the monads that meet some standard of distinctness of perceptions are all and only the ones that have reason.

12. Reason as controller of desire

What role does Leibniz assign to reason in the conative life of a thoughtful person? Even if we cannot get from him a satisfactory rooting of the concept of *reason* in his basic metaphysic, we can still ask this question about how he situates it in his picture of the human condition. Such answers as I can find come mostly from the *New Essays*; I have found little in other works. It may be symptomatic that there is no entry for 'reason' in the indexes of AG, MP, Mates 1986, Wilson 1990, Ross 1984, Jolley 1995, or Sleigh 1990. L and Adams 1994 have only four between them, none relevant to my present topic.

The best I can offer are four ideas, of which two are little more than tentative suggestions.

(1) Discussing ways of using some desires to block others, Leibniz writes that without a certain technique one could not resist certain desires 'in any free and voluntary way in which reason could play a part' (*NE* 195). When he discusses how we can do this, offering 'methods and stratagems' for

maintaining conative hygiene, he presents only one clear way in which 'reason could play a part' in it. One of the stratagems—the 'best of all'—is to 'become accustomed to proceeding methodically and sticking to sequences of thoughts for which reason, rather than chance (i.e. insensible and fortuitous impressions), provides the thread' (*NE* 196). This brings in the contrast between 'empirics' and disciplined scientists, which Leibniz often aligns with what separates experience and memory from 'reason' (Mon 28; PNG 5, FW 261). He is apparently saying that our desires and thus our behavior will be better if our habits of thought are rooted in well-tested scientific theories rather than in random anecdotes. He may be right; but this invocation of 'reason' does not take us far; and it contributes nothing to my theme of reason's role in the teleological aspect of the human condition.

(2) Sometimes Leibniz takes reason to be a controller: the conative side of a mature and thoughtful person involves appetite governed by reason. I have a suggestion about how that might be. Associating reason with reflective self-awareness, and thus with mental episodes that are not defeatingly small, fast, or lacking in variety, Leibniz may think that my bringing reason to bear on my appetitions involves their standing out from their mental surroundings, so that I can become aware that I have them and aware of what they are. 'We think of many things all at once, but pay heed only to the thoughts that stand out most distinctly' (*NE* 113). He also holds that something of which we are not aware can be brought to our awareness retrospectively:

> When we are not alerted, so to speak, to pay heed to certain of our own present perceptions, we allow them to slip by unconsidered and even unnoticed. But if

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[1]   He speaks of distinct 'perceptions' and of distinct 'ideas'; and, although I agree with Brandom (1981: 453–9) that often Leibniz took these to be different concepts, he usually runs them together when, as here, he is trying to separate reason or intellect from the other capacities of the mind.

someone alerts us to them straight away, and makes us take note, for instance, of some noise which we have just heard, then we remember it and are aware of just having had some sense of it. (*NE* 53–4)

This could be applied to appetitions as well, in the manner of some current styles of psychotherapy, in which control of one's drives is sought partly through becoming sharply aware of them. Leibniz was an acute observer of the human psyche, and it would be in character for him to have some such thing as that in mind. He wrote this to Bayle:

> The soul does many things without knowing how it does them—when it does them by means of confused perceptions and unconscious inclinations or appetitions, of which there are always an extremely large number, so that it is impossible for the soul to be conscious of them, or to distinguish them clearly.

Leibniz elaborates this as it applies to perceptions. When we enjoy a musical sound, he writes, we are responding to some facts of which we are not distinctly aware about the rate of vibration in the instrument; and when physics and music theory enable us to know the facts, 'reasoning has to come to our aid' (Comments on Bayle's Note L, FW 238). He does not return to appetitions in this context; but I guess that he thinks reasoning can come to our aid with those too.

But that wouldn't help much with my theme of teleology. It gives reason a role in positioning you to make better, more informed decisions about which of your drives and desires to go with, and which to discourage. This contribution of reason is over before the teleological work begins.

13. Reason as a source of moral guidance

(3) Leibniz frequently says that reason is an instrument for the discovery of truths about morals and value. 'To speak against reason is to speak against the truth, for reason is a chain of truths. This is to speak against oneself, and against one's own good, since the principal use of reason consists in knowing the good...' (*NE* 199). 'Justice, taken quite generally, is nothing other than goodness in conformity with reason' (PNG 9, FW 262–3). I have not found him explaining how reason serves in moral discovery, but I shall not press that point here.

Moral knowledge obviously has a place in the life of one's desires. In the interplay amongst my various desires and inclinations, my knowledge or beliefs about what would be good or right makes a difference. So that is another way in which reason can enter the conative picture. Writing in one place about what we need if we are 'finally to gain control both of our passions and of our insensible inclinations, or disquiets' (*NE* 188), Leibniz depicts reason not as controlling but as guiding, not holding the tiller but displaying the compass. He writes that we should acquire 'the custom of acting in conformity with reason', and so 'we must make this rule for ourselves once and for all: wait until you have the findings of reason and from then on follow them'.

That could give reason a working role in our lives; but once again it leaves the teleological aspect dangling. A person may decide to act thus rather than so, taking into account everything he knows about what that will involve—pleasure, misery, social success or failure, moral success or failure. Reason-as-moral-compass supplies him with important material to take into account, but it does not enter into the deciding, the teleological procedure in which someone acts because of a thought about a possible future.

(4) If moral knowledge or belief is not merely a cognitive matter but has something conative built into it, the picture changes. On that view, accepting a moral proposition is not (only) believing or knowing something but essentially involves endorsing an imperative addressed to oneself. That

is a conative state: to accept a moral proposition is to be inclined to behave thus rather than so. If reason can give me the moral 'knowledge' that essentially includes such a disposition, then it is after all woven tightly into the conative side of my nature.

Leibniz sometimes wrote as though he took that view of moral principles. He may be doing so in a passage I have already quoted: 'In these appetitions. . . one looks only to the present; but experience and reason teach us to govern and moderate them so that they can lead us to happiness' (*NE* 189). If reason teaches us to govern our appetitions, then it is a source not merely of moral knowledge but of moral injunctions. However, the matter is not clear, because the French could mean that reason teaches us *how* to govern our appetitions, and that would fall under option **(3)** rather than **(4)**. Other passages, though, unambiguously point to **(4)** reason as inherently conative: 'Unless appetite is directed by reason, it endeavours after present pleasure rather than that lasting pleasure which is called happiness' (*NE* 199–200). If reason can 'direct' appetite, that is presumably because the moral propositions that reason lets us discover have imperative force.

There is further evidence in something that I chopped off the end of a previous quotation: '. . . the principal use of reason consists in knowing the good *and pursuing it*.' I cannot understand this except as implying that moral knowledge (or belief) involves conative attitudes. The same thing is implied when Leibniz writes of the 'inclinations which reason gives us' (*NE* 194).

I do not quarrel with the thesis that any moral proposition incorporates an imperative, so that accepting it involves adopting a conative attitude. (For sophisticated developments of this over-all position see Hare 1952, 1963, 1981; Gibbard 1990.) But most of those who have adopted a position of this kind have associated it with a certain subjectivism about the nature of morality, which has led them to find its human roots in feelings rather than in reason. They have indeed been pushed that way by their inability to devise a credible epistemology for morality if it is taken to be objective and factual. Someone who holds as Leibniz does that reason can discover objective moral truths, and who also holds (as I am conjecturing that Leibniz also does) that accepting such a truth involves a conative element, has a lot of explaining to do. I have not found that Leibniz does any of it.

R. M. Hare, uniquely among moral philosophers who accord to moral propositions a kind of subjectivity and hold that accepting such a proposition is like accepting an imperative, maintains that morality can be established *a priori*. His argument for this is a vivid *tour de force* which seems not to have converted anyone. It would be astonishing, to say the least, if Leibniz ever entertained anything like it.

Abbreviations

AG is Roger Ariew and Daniel Garber (eds), *G. W. Leibniz: Philosophcal Essays*, (Indianapolis 1996, Hackett)

FW is R. S. Woolhouse and R. Francks (eds), *G. W. Leibniz: Philosophical Texts* (Oxford University Press 1998.)

L is L. E. Loemker, *G. W. Leibniz: Philosohical Papers and Letters* (Dordrecht, Reidel 1969).

CT = 'Critical Thoughts on the General Part of Descartes's *Principles*', **L** 383–412.

CWS = *The Collected Works of Spinoza* vol. 1. Ed. and trans. Edwin Curley. Princeton University Press, 1985.

DM = 'Discourse on Metaphysics', **AG** 35–68.

G = *Die philosophischen Schriften von Gottfried Wilhelm Leibniz.* Ed. C. I. Gerhardt. Hildesheim, Olms 1978. Vol. 3.

Mon = 'Monadology', **FW** 268–81.

MP = G. W. Leibniz. *Philosophical Writings.* Ed. and trans. Mary Morris and G. H. R. Parkinson. Lndon: Dent 1973.

NE = *New Essays on Human Understanding.* Ed. and trans. Peter Remnant and Jonathan Bennett. Cambridge University Press, 1981.

NI = 'On Nature Itself', **FW** 209–22.

PAB = 'A Physicist Against Barbarism', **AG** 312–20.

PNG = 'Principles of Nature and of Grace', **FW** 258–66.

SD = 'Specimen of Dynamics', **FW** 153–79.

TA = 'Testamen Anagogicum', **L** 477–85.

UO = 'On the Ultimate Origination of Things', **AG** 149–55.

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