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THE MONADOLOGICAL WORLD OF GOTTFRIED WILHELM LEIBNIZ

Gottfried Wilhelm Leibniz (1646–1716) was born in Leipzig into a scholarly and noble family just before the end of the Thirty Years War (1618–48) that had torn apart the German states. His father was the Professor of Moral Philosophy at the University of Leipzig, and his mother was also from an academic family. Accordingly, Leibniz had a very broad education and throughout his life was active in a vast number of diverse intellectual areas. Much of his life was spent working in various official capacities in courts in Europe, including those in Paris, London and, for the greater part of his mature life, Hanover.

Central to Leibniz's philosophy was the project to reconcile religion, ancient metaphysics and modern science. He was a major innovator in mathematics (inventing calculus at the same time as and independently of Newton) and logic (anticipating the type of "algebraic" formalisation of logic later developed in the nineteenth century), but importantly, he also sought to rework ancient Aristotelian and Platonic ideas such that they could be made compatible with the developing physical sciences. Here, his influence was central to the development of a conception of science in Continental Europe that differed from the more mechanistic tradition found in Britain.

Many of his distinctive ideas about the nature of substances, and some of the very peculiar consequences of these ideas, seem to be entailed by the logical conceptions he ultimately took from Aristotle and Plato. Kant's later criticisms of Leibnizian metaphysics were, in turn, bound up with his criticisms of these logical conceptions.

2.1 Leibniz's monadological world

Leibniz is best known for his elaborate "monadological" metaphysics, a view in which the universe is ultimately made up of extensionless but active, simple substances which, in his later writings, he called "monads"— "the true atoms of nature … the elements of things" (M: §3). This idea of a monad developed from his earlier notion of individual *substances*, the notion

of *substance* being taken over from Aristotle (Mercer 2002). But equally, Leibniz seems to have taken over central elements from the philosophy of Plato and later Platonists.[1]

Donald Rutherford has helpfully described Leibniz's conception of individual substance in terms of the following features (Rutherford 1995: 133–37). Individual substances

(a) are independent, or have *per se* existence. An army, for example, is *not* a substance, because its existence depends on the existence of the soldiers making it up. In contrast, substances are radically independent of the existence of things *other than* themselves (with the exception of God);

(b) are the intrinsic sources of action to which appeal is made in all explanations. Substances are the ultimate explanatory principles of other things. Because substances *are* independent, one cannot appeal to any factor external to them to explain *their* behaviours;[2]

(c) endure through change. We think of substances enduring through changes in the properties they possess but which are not essential to them. A piece of wax remains *the same* wax through the changes of its properties resulting from heating it, for example;

(d) have *true* unity. Things such as armies or animal herds, the existences of which depend on component things (the soldiers making up the army, the animals making up the herd), have only *accidental* unity. Individual substances have true or *per se* unity;

(e) are the subjects for individuation—each individual substance is individuated from others by the *kind* of substance it is (is individuated by its "form" or "species"). No substance, then, can be regarded as a bare something—a *bare this*—but is always an instance of a kind. It is always a *this such* (this soldier, this cow, etc.). Individual substances are *infirmae species*, the lowest species on the Tree of Porphyry.

While these five features are largely as found in Aristotle, two other more distinctly Neoplatonist characteristics of substance are introduced by Leibniz. Each substance is

(f) "pregnant with its own future"—that is, all the temporal phases of a substance are internally connected, such that the entire future of an individual substance is somehow implicitly contained within it at any one instant. Linked to this characteristic is the notion that

(g) each substance is said to "express the entire universe". Every substance is ultimately connected with *every other substance* in the universe such that a change in the state of *any one* will be reflected in the state of *every other*. Leibniz expresses this in terms of a "harmony" between the states of all substances in the universe, as coordinated by laws originating in the mind of God.[3]

We might characterise these last two features as expressing distinctively *modern* ideas, in contrast to the more traditional "Aristotelian" conceptions of substance reflected in characteristics (a) to (e), since in Leibniz it is connected with the idea that the universe can be understood in terms of the operation of *simple* and *universally applicable laws*, an idea that is characteristic of scientific approaches to the universe found in early-modern thinkers such as Copernicus and Galileo. Standardly, early-modern advocates of the new cosmology of the infinite, "open" universe have been seen as having been strictly *opposed to* the Aristotelian view of the "closed" cosmos that had dominated in the medieval period. But while Galileo and other early-modern thinkers such as Thomas Hobbes thought of themselves, with their mechanical accounts of the universe, as *rejecting* Aristotle, Leibniz attempted to give an *alternative interpretation* of the mechanical approach to the universe by *integrating* or *reconciling* the new view with Aristotle's, by modifying Aristotle's in various ways, as reflected in (f) and (g). But as we will see, Leibniz seems to have brought about this *modernising* modification of the Aristotelian approach by synthesising it with other aspects of ancient philosophy, in particular, ones belonging to *Platonic* forms of thought, especially as developed by the Neoplatonists, Plotinus and Proclus.

2.2 Leibniz, the new physics, and the divine orderliness of the universe

As we have seen, Aristotle had thought of *space* as a combination of differentiated *places*, and one way this was expressed was in his idea of a radical ontological divide between the realms marked by the orbit of the moon. For Aristotle, the earth exists at the centre of the cosmos, and it is populated by *imperfect* substances (such as human beings and other living things) subject to generation and corruption. In contrast, all things existing beyond the orbit of the moon (i.e., belonging to the supralunar realm), such as the stars, are perfect and incorruptible substances. This difference is reflected in the behaviour of the elements of the terrestrial or sublunar and the celestial or supralunar realms, respectively: the natural motion of terrestrial bodies as linear; that of celestial bodies, circular.[4] In contrast to Galileo's later mechanics, with its principle of inertia, in Aristotle's physics all movement requires a mover, and so Aristotle had posited an ultimate source of such movement. This is God (*theos*), the "prime mover", who exists at the "outer sphere" of the cosmos and who is responsible for the diurnal rotation of the stars. God himself, however, was himself "unmoved".

In the physics developed by Galileo and Newton to go with the new cosmology of Copernicus and Bruno, the same laws were seen as applying throughout this now infinite universe and there were no fixed *places* in the universe (such as a centre and an edge), as presupposed by the sub- and supralunar distinction in Aristotle. But while the new cosmological system

within which the evolving universal form of mechanical explanation could progressively synthesise terrestrial and celestial phenomena was indeed new, it was, as a general cosmological picture, not unprecedented. Platonists like Nicholas of Cusa could draw upon both ancient resources such as the cosmology found in Plato's *Timaeus*, which was far more "celestial" than its Aristotelian rival, and forms of Christian Neoplatonism that had incorporated the views of Plotinus and Proclus. The "infinite-circle" trope which Cusa had applied to the universe had been drawn from the early fourteenth-century Dominican mystical theologian, "Meister" Johann Eckhart (c. 1260–c. 1328), who had used it of God.

While some conservative contemporaries of Leibniz, such as his teacher Jakob Thomasius, had rejected the new scientific world view in order to hold onto the older Aristotelian ideas, Leibniz *embraced* the new style of thinking as found in Galileo, Descartes and Newton, according to which the elements of the world are perceived as interacting under universally applicable laws. Like Newton himself, he thought of the universal laws describing the movements of bodies in the world as decreed by God, and it was the same Neoplatonic elements that had gone into Newton's natural philosophy that allowed Leibniz to transform the Aristotelianism to which he adhered. Thus Loemker has noted that to the extent that the eclecticism of seventeenth-century thinkers like Leibniz had sought for unifying principles, "it assumed the form of Christian Platonism," a system of thought whose "intricate threads of influence" had linked "the Franciscans, the Brothers of the Common Life, Nicholas of Cusa, and the Florentine Academy to Bruno, Campanella, and Descartes" (Loemker 1961: 332). Thus, when the focus shifts to such attempts to unify Aristotelian natural philosophy with the resources of Christian Neoplatonism, the transition from "closed cosmos" to "infinite universe", as stressed by thinkers such as Thomas Kuhn, need not look quite as radical and anti-Aristotelian as it is commonly portrayed. As Eckhard Kessler has put it, much of the input to the new natural philosophy might be regarded "as essentially an attempt to integrate new physical experience and knowledge by transforming Aristotelian natural philosophy in accordance with Neoplatonic metaphysical principles" (Kessler 1990: 143–44). This, indeed, was the tradition to which Leibniz belonged, and that would be relevant to understanding the thought of later idealists as well—a tradition that, in its appeal to synthetic forms of Platonism and Aristotelianism, stood in contrast to the nominalistic and voluntaristic forms of thought *also* reflected in complex ways in the emerging natural sciences.

Thus, while Leibniz was intent on absorbing modern mechanistic forms of explanation into his philosophy, he conceived of such *physical* understanding as working only at a superficial level of analysis. This physical level of analysis must be underpinned, he thought, by a different, more rational and consistent *metaphysical* account. And without this deeper metaphysical

account, grounded in the metaphysics of Plato and Aristotle, modern physical science could not be reconciled with religious belief and would ultimately lead to a Godless conception of the world. Hence Leibniz's metaphysical views were meant to show how modern science and Christian dogma could coexist.[5] Here as elsewhere, his thought was in the service of a type of *reconciliation* of what could otherwise seem to be antagonistic views.

In the emerging mechanistic view of the world, which Leibniz accepted at a *physical level*, the universe was ultimately made up of causally interacting extended material bodies. Leibniz rejected this as an *ultimate* account of the world: such mechanically interacting material bodies were, at a deeper level, to be understood as monadic, elementary units. Monads, according to Leibniz, are themselves without extension. Nor do they actually interact with each other, the way that Aristotelian substances were typically conceived as interacting. (If a monad's states were causally affected by other monads it could not be independent.) In fact, monads behave in the way they do because they are driven by their own "appetitions", conceived as *somehow like* desires or drives. Besides appetitions monads have "representations" of the states of all other monads in the universe—characteristic (g) above. In this sense monads have the features of "minds" or "souls", and Leibniz's philosophy involved a type of *spiritualism*, although not the "immaterialist" form of Bishop Berkeley. In contrast to Berkeley's immaterialism, Leibniz's idealism, in using the Aristotelian form–matter distinction, had more in common with the idealism of Kant and the post-Kantians.[6]

Relations existing between the behaviours of the different monads are not random but law-like, and this is why we *mistakenly* think of the bodies that are ultimately constituted by monads as causally interacting. That is, when we see one billiard ball strike another, apparently "causing" the second ball to move, the movement of the second ball is not *really* due to the impact of the first. It is actually due to a harmony among the "appetitions" of its constitutive monads.[7] Our everyday way of thinking of things causally affecting each other in space and time is simply a result of the limitations of our way of conceiving of them. When we think of causal relations in this way, as among the interactions of extended things in space, we conceive of their elements in terms of the "indistinct" and "confused" ideas resulting from perception. Like Plato, Leibniz was deeply sceptical of the type of "knowledge" that perception supplies.[8] In reality, the changing states of the monads constituting the two balls are simply coordinated with each other in the universal harmony among the states of all things, as indicated above in characteristic (g) (although from the perspective of an even deeper level of analysis, the "harmony" involved is not so much among the "external" behaviours of the constituent monads as among the *representations* constituting the monads "experiencing" the interactions). The metaphysical reality underlying the appearance is something we will come to understand when we *cognise* all this "clearly and distinctly", rather than relying solely on perception.

To capture the distinction between the limitedness of the knowledge possessed by finite minds and the infiniteness of God's knowledge, Leibniz on occasions appealed to the metaphor of "perspective". Thus, while a finite monad neither exists "in" space nor has extension, it nevertheless represents the universe as if from a *point of view* "rather as the same town is differently represented according to the different situations of the person who looks at it" (DM: §9). The difference between the apparent spatial "locations" involved here is cashed out in the specific relations among representations contributing to the states of each monad. In contrast, he distinguishes the "view" of God from that of each finite monad in the following way:

> God, so to speak, turns on all sides and considers in all ways the general system of phenomena which he has found it good to produce in order to manifest his glory. And as he considers all the faces of the world in all possible ways—for there is no aspect which escapes his omniscience—the result of each view of the universe, as looked at from a certain position, is, if God finds it good to actualise his thoughts and to produce it, a substance which expresses the universe in conformity with that view.
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> (Ibid.: §14)[9]

Each perspectival finite monad is thus like a "mirror of God" in this regard, this being a familiar Christian Platonist trope found in Eckhart and Cusa to capture the relation of human and divine intellects. The underlying idea of the orderly harmonisation of individual perspectives in the mind of God seems to come from the Herborn Encyclopaedist, Bisterfeld (Antognazza 1999; Rutherford 1995: 36–40); however, the idea is at the heart of Nicholas of Cusa's Neoplatonic image of "infinite sphere".[10] It is a form in which we shall see the issue return in Kant's transcendental idealism.

One explanatory advantage of Leibniz's idea that all monads contain "representations" and "appetitions" is that it avoids the traditional mind–body or "subject–object" problem. It also explains how certain types of monads—human beings—are capable of *knowing* (having true representations of) the nature of the universe and of acting on their desires, because it makes this just a particular instance of a much more general feature of *all* monads. The cost of this, of course, is the peculiar idea that everything is somehow living and ensouled – the position of "pananimism".

2.3 Leibniz's conception of the *moral* order

Leibniz would appeal to universal laws not only in the explanation of physical phenomena but also in his conception of social life. The disastrous effects of the Thirty Years War on life in the German-speaking regions of

Europe prompted many thinkers of Leibniz's generation to reconsider the way society should be organised and structured so as to minimise the possibilities of conflict. Leibniz's solution runs counter to the developing, basically secular accounts of political relations found in thinkers such as Hobbes and Locke, for example, by Leibniz's grounding these relations in his strongly Platonistic and theocentric metaphysics.

As we have seen, Leibniz's monadological world is one in which there is no *actual* interaction between monads: instead there exists a "pre-established harmony" among the monads (that is, among the perceptions and appetitions characterising all the monads) that has been instituted by God. Not only is God responsible for the orderliness or harmony of the world, *this* world is actually the *best* (i.e., most harmonious) *possible* world. This follows from the perfection of God: since he is perfect, his kingdom (the world) must be the best possible object, as a perfect will wills only what is *good*. (This realm cannot *be* perfect, however, as only God himself is perfect.) Leibniz thinks this can effectively be discerned from the *concept* of God, as can the fact of God's *existence*.[11] Humans, with their less than perfect, perspectively perception-tied understanding may not see that theirs *is* the "best of all possible worlds", but as a person's understanding comes closer to being perfect (as that person's ideas become clearer and more distinct, and *less* tied to the particularity of their perspective) they will grasp how all the apparent imperfections in the world actually contribute to its overall status as the best one possible.

This does not sound like a particularly fruitful starting point for moral and political thought (Leibniz was to be satirised in the eighteenth century by Voltaire, as Dr Pangloss in the novel *Candide*), but Leibniz, nevertheless, had a well worked out political philosophy, grounded in this theocentric metaphysics, and he applied this thought in many practical contexts. The "universal jurisprudence" governing the human realm is, like the universal physical laws describing the physical universe, grounded in the mind of God, and God, as perfectly rational and good, can only want the *best* laws—those that are the most just, the most orderly and harmonious—governing the universe. In turn these laws can be discovered and understood by humans to the extent that they learn to think rationally. Thus in an early work, Leibniz could describe theology as "a certain species of jurisprudence (the latter being taken universally), for it deals with the [system of] Justice and Laws obtaining in the Republic, or rather Kingdom, of God over human beings".[12]

Leibniz's idea that God's laws could be understood from the use of *reason* had distinct implications for his attitude to religion and implied that humans were not simply tied to what was revealed in the Bible or to what had to be accepted on faith. In this way, he thought, reason could be applied so as to reconcile such doctrinal differences as those between Catholicism and Protestantism that had rent the social fabric of Europe during the Thirty Years War.[13] Moreover, it also gave a distinct character

to *God* as Leibniz conceived of him—a feature that set Leibniz's theology in opposition to those of the more voluntaristic Christian thinkers at the time. He thus opposed the idea that God, by an act of his all-powerful will, simply *defined* what was "the best" for the world. *That* view gave a certain contingent character to the laws governing the world—both natural and social laws—as it was thought that those laws *could have been otherwise* had God *willed them to be otherwise*.

In the seventeenth century, the voluntaristic position could be seen clearly in Descartes' claim that there are *no truths* antecedent to God's will. Moreover, similar remnants of such a voluntaristic theology were even contained in the otherwise predominantly naturalistic approach to political thought found in Hobbes. Hobbes is most well known for introducing the idea that political legitimacy is founded on the *agreement* of the will of those ruled, an agreement struck in a kind of "compact" or "social contract". Nevertheless, underlying Hobbes's account in *Leviathan* of political legitimacy as arising out of the agreement of those ruled was the idea that it was the "irresistible power" of God that was the underlying source of his *absolute* right of dominion—what Hobbes calls, "the right of nature":

> The right of nature whereby God reigneth over men, and punisheth those that break his laws, is to be derived, not from his creating them (as if he required obedience, as of gratitude for his benefits), but from his *irresistible power*.
>
> (L: ch. 31, §5)

Commenting on this passage, Yves Charles **Zarka** notes how it shows clearly that "Hobbes belongs to the tradition of theological voluntarism and that his natural and political philosophy depend on it" (Zarka 1996: 79).[14] *Irresistible* power, Hobbes thinks, is in fact not found in the political realm—hence the central role there of contract. However, he makes it clear that this is due to contingent features of power in the political realm: were a human to have irresistible power, this would be the ultimate justification of political authority. "Power irresistible justifieth all action really and properly, *in whomsoever it is found*" (HEW: vol. 5, 114–16, emphasis added).

Leibniz, like the Cambridge Platonist Ralph Cudworth, was explicit in his opposition to Hobbes' combination of nominalism and voluntarism, and such opposition would have important consequences for later idealist thought, not least in influencing the idealist conception of the *will*.[15] As has often been pointed out, it is difficult to see how Hobbes's contractarian idea can appeal to the grounding of authority on the *free*-willing of subjects, given his naturalistic account of the will.[16] Hobbes effectively identifies the will with an empirical bodily appetite or aversion: "In *deliberation*, the last appetite, or aversion, immediately adhering to the action, or to the omission thereof, is that we call the WILL; the act, not the faculty, of willing" (L: ch.

6, §53). In distancing himself from the *faculty* of willing, Hobbes was setting himself against the scholastic view going back to Aristotle of the faculty of the will—*voluntas*—as a type of rational power *causing* the action (L: ch. 46, §28). Instead, Hobbes introduces appetite and aversion as quasi-mechanically acting affective states, causally brought about by perceptual interaction with the world, and manifesting themselves in particular actions. This means that freedom for Hobbes *cannot* be identified with any notion of a *rationally self-determining* will, presupposed by the Christian Platonist tradition. A man can no more "determine his will than any other appetite, that is, more than he can determine when he shall be hungry or not" (HEW: vol. 5, 34). Rather than consisting of the will determining *itself*, freedom consists in doing "what the will is determined unto" (ibid.: 35). In psychology, just as in *theology*, voluntarism makes rationality consequent upon a concept of willing outside the scope of any reasoning. The content of the will is simply something *given*.

In his opposition to voluntarism in its theological and secular forms, Leibniz appealed to Aristotelian and Platonist considerations, but here as elsewhere this was done in a way that attempted to reconcile this mode of thought with the type of thought that was characteristically modern. These attempts were not without their problems, and in many ways Kant's later approach to the will with its similar opposition to psychological voluntarism of the Hobbesian variety appears to have been an attempt to get beyond those problems. But what characterises Kant in this regard is a commitment to the same broadly Aristotelian considerations that marked Leibniz's stance against the secularised version of the nominalist–voluntarist orientation of his antagonist, Hobbes.

2.4 The monadological conception of the soul and its capacities

As Leibniz's idea of a "monad" represents a modern version of the ancient Aristotelian idea of individual substance, we should think of the mind-like monads in terms of *Aristotle's* ancient conception of the "psyche", the "mind" or "soul", rather than any modern idea of the mind as found, say, in Descartes or Berkeley. For Aristotle, there are three types of soul found in the living world—plant souls, animal souls and human, rational souls— and here "soul" means something like the principle of something's activity and movement (DA: bks 2 and 3). Thus the Aristotelian "soul" was not particularly connected with the phenomenon of consciousness, as is the modern notion of the "mind", nor did it name a *type* of immaterial substance by contrast to the material nature of bodies.[17] Rather, Aristotle describes the soul as the *form* of the body—all substances being ultimately "formed matter". Moreover, the form of a substance is its explanatory principle, and so an attempt to explain the movement of a plant—that it

grows *upwards*, for example—will appeal to the distinct characteristics of the plant "soul".

Plant souls are effectively nutritive, being evoked in the explanation of how a plant stays alive. In contrast, animals are mobile and hence need sense perception of their environment. The human soul has these characteristics and further ones as well. In explaining human action, one does not simply appeal to nutritive needs and the capacity to perceive surroundings, but also to the capacity to *reason*. Aristotle had understood this as involving the capacity, not only to perceive particular objects in the world (as an animal can), but also to take into the mind the *form* of those objects. It was this that enables humans to reason about, and not merely to respond to, objects in their world.

This difference between animal and human cognition is reflected in Leibniz's distinction between *obscure* and *confused* ideas, on the one hand, and *clear and distinct* knowledge, on the other. I have obscure (or unclear) ideas, like my idea "oak tree", when I cannot recognise instances of those ideas. Conversely, I have clear ideas, like my idea "gum tree", when I *can* recognise instances of those ideas. Or to put it another way, I have an obscure knowledge of oaks, but a clear knowledge of gums. But further, clear knowledge can be *distinct* or *confused* (or indistinct). "When I can recognize one thing among others without being able to say what its differences or properties consist in", says Leibniz in the *Discourse on Metaphysics*, "my knowledge is *confused*" (DM: §24). To illustrate clear but confused knowledge, Leibniz appeals to an example, the resonance of which we will see in Kant: *aesthetic judgment*. "In this way we sometimes know *clearly*, without being in any way in doubt, whether a poem or a painting is good or bad, because there is a certain *je ne sais quoi* which pleases or offends us" (ibid.). Distinct knowledge, on the other hand, involves the capacity to "explain the evidence I am using" in my making of some judgment. "An assayer's knowledge is like this; he can distinguish true from false gold by means of certain tests or marks which make up the definition of gold" (ibid.). This is crucial. Distinctness comes in degrees because it may be the case that my knowledge of the *evidence* I adduce in a distinct judgment is *itself* clear but confused. For example, I might give as evidence for my belief that this metal is gold, that it is yellow, shiny metal, but be unable to say anything further, as my ideas of "shiny", "yellow", and so on, are "confused": I can just pick out yellow, shiny things in the way that I can pick out a good painting or poem. The assayer doesn't stop at such confused ideas, however, but can do further tests. But the assayer *too* will stop somewhere in the giving of evidence, as there is only one being with knowledge whose distinctness goes "all the way down", as it were: God. It is the point at which one's distinct ideas give way to the confused ones of perception that defines, as it were, the "perspective" or "point of view" from which one understands the world.

Leibniz's distinction between beings capable of forming clear and distinct ideas, like ourselves, and beings unable to get beyond clear but confused ideas seems to be a modification of Aristotle's distinction between the type of perceptions capable by humans and nonhuman animals. Aristotle thought that while animals just perceive things as the *singular* things they are, we humans are capable of recognising objects as instances of kinds—as *this suchs*. I see *this* thing in front of me *as* a tree, *that* thing *as* a car. In Aristotle's terminology, I perceive its *form*. In Leibniz's account, it is this ability that is linked to the capacity to give reasons ("evidence") for the claim. To be capable of the perception of "form", or what Leibniz describes as being capable of "apperception", is to be able to give reasons for the *as* of the perception.

As Robert Brandom has pointed out (Brandom 2000: 46) this understanding seems to mark off the approach to the idea of "representation" of the classical rationalists, like Leibniz and Spinoza, from that of Descartes and, following him, the British *empiricists*. While the rationalists

> accepted the central role of the concept of representation in explaining human cognitive activity ... they were not prepared to accept Descartes's strategy of treating the possession of representational content [i.e., certain knowledge of a merely *clear* idea] as an unexplained explainer. ... They were explicitly concerned, as Descartes was not, to be able to explain what it is for something to be understood, taken, treated, or employed *as* a representing *by* the subject: what it is for it to be a representing *to* or *for* that subject. ... Their idea was that the way in which representings point beyond themselves to something represented is to be understood in terms of *inferential* relations among representings. States and acts acquire content by being caught up in inferences, as premises and conclusions.
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> (Ibid.)[18]

For Leibniz, nature has provided nonhuman animals "with organs which bring together a number of rays of light or of undulations in the air, this making them more effective by combining them" (M: §25), and combined with memory they are thereby capable of "a kind of *sequencing* which mimics reason, but which must be distinguished from it" (ibid.: §26). Humans too can operate in this way, by a type of association of ideas, for example "when we expect there will be daylight tomorrow on the grounds that it has always been like that up to now", but this is a different type of expectation to that found in an *astronomer* who, having a theory to explain the regularity of the transitions from night to day, "believes it on the basis of reason" (ibid.: §28).

It is the fact that the distinctness of knowledge is scalar that explains how for Leibniz the empirical knowledge provided by the sciences can be distinct from, and need the underlay of, metaphysical knowledge. It is "the

knowledge of necessary and eternal truths" that is what "distinguishes us from mere animals and gives us *reason* and science, raising us to the knowledge of ourselves and of God" (M: §29). But, as we have seen, for finite monads like ourselves, reasons will run out *somewhere* in a type of knowledge that, although clear, will be confused and perspectival. Empirical science is like this to the extent that modern mechanistic physics still appeals to something *given* in perception. Only God's knowledge, located at the top of the scale of distinctness, will grasp *everything* in a way that is necessary and in the form of truths that are eternal.

In genuine *metaphysical* knowledge of the world, in which we aspire to bring all our ideas to the highest level of clarity and distinctness, we will grasp, for example, that the time and space within which such local interactions are meant to occur are not, in fact, *real*, as Newton supposed time and space to be.[19] That is, according to Leibniz, when we think about time and space clearly and distinctly, we will grasp that they refer, not to *substances* (i.e., to that which is ultimately real), but merely to *relations* of simultaneity and succession between the representations occurring within monads. For example, when I experience one billiard ball striking another and *causing* it to move, what I am experiencing is a certain succession of my sensory representations. Other monads may perceive the "same" event of one ball striking another, not because they are perceiving some *independent* "real" event as it is conventionally assumed, but only because God has harmonised the changes in all the representations in all the monads, thus the changes in the sensory states of humans. To "explain" this in terms of the "reality" of the event perceived would be to appeal to a form of understanding limited to the unclear and indistinct ideas of perception.

This view of the relation of perception to knowledge might be seen as involving a radical extension of changes in the conception of knowledge accompanying the new physics. To a degree, Leibniz was here simply agreeing with the view of Galileo and others who thought of the world as revealed by science to be quite different to that of everyday perception or common sense. For example, while for common sense the colours we see are real non-relational properties of external things, Galileo thought of colours as subjective effects produced *in us* by objects in the external world which were *not*, in the familiar sense, coloured. From a modern scientific point of view, certain features of the space and time of the perceived world seem "subjective", or limited to our point of view—for example, any naïve directional distinction between "up" and "down" or, less obviously, the directionality of "before" and "after". In everyday life, we have an intuitive sense of these directions and might, prior to *reflection*, think of them as "objective", rather than as occurring relative to our position.

As we have seen, in the Aristotelian cosmology, in which the earth is pictured as being at the centre of the cosmos, "up" and "down" acquire a less confused sense than they would have to a "flat-earther", say—as "up"

would be thought of as something like the direction of a line drawn from the centre of the cosmos to *any* point on its circumference. From the perspective of modern cosmology and physics, however, "up" will be related to the gravitational field of any massive body. If I'm on the surface of the earth, "up" will be in a direction pointing away from the centre of gravity of the earth; if I'm on the moon, it will be in a direction pointing away from the centre of gravity of the moon—and so on.[20] Indeed, from the point of view of modern physics, it can be argued that time *itself* is symmetrical and that the apparent directionality of time from the past to the future is a function of the fact that the time so conceived is that of the point of view of a being located "in" time.[21] The possibility that, from the viewpoint of physics, the intuitive conception of time with its directionality is *illusory* helps make sense of Leibniz's "relational" account of time, and of his attribution of *appetitions* to monads. We tend to think of conscious beings like ourselves as having desires that are *forward pointing*, because they are connected with actions which *bring about* states of affairs in the future. Conversely, we think that we are unable to *change the past*. But this asymmetry is, of course, for Leibniz an illusion, because it is a feature of time which, to the extent that it is regarded as substantial, is *itself* an illusion. When thinking "clearly and distinctly" then, the radical difference between process of efficient causation and goal-directed action will disappear, an idea that would be exploited by Kant in his moral philosophy, and that would recur in Nietzsche's odd thought of "eternal recurrence".

Again, Leibniz's approach to time can be related to the Neoplatonic tradition. After Iamblicus, and most explicitly in Proclus, "imparticipable", or "monadic", time came to be distinguished from "participated", that is, empirical or physical time. Imparticipable time was "resting" time, as it was itself conceived as exempt from change, whereas participated or physical time was conceived as "suspended" within it. As Siorvanes explains,

> this timeless suspension contains all the sequences of events that will "unfold" once time becomes flowing. Monadic time encompasses what will constitute past, present, and future. … In passing from imparticipable to participated time, we pass from metaphysical relations to empirical. Causal connexions between beings and between grades of being come to be seen in temporal sequences, and our time-bound language makes us associate and confuse temporal history with metaphysical priority.
>
> (Siorvanes 1996: 135)

2.5 Leibniz and mystico-religious Neoplatonism

The Neoplatonic strain of Christian thought that had influenced Leibniz had consequences for ways of conceiving of the relation between God and

the world. While the orthodox view on creation, stemming from St Augustine, had God creating the world out of nothing ("ex nihilo"), the view of mystics like Eckhart was closer to that of the early pagan Neoplatonists, for whom the world was an "emanation" of God, a concept in terms of which they interpreted the doctrine of the Trinity. For orthodox Christians, the more Neoplatonic view came dangerously close to the heresy of "pantheism", which *identified* the world and an extended material God.[22]

The major representative of such a pantheistic world view in the seventeenth century was, of course, Baruch Spinoza. As we have seen, Newton in *his* natural philosophy and theology thought of the extended world itself as an attribute of God, but Newton had thought of the matter *inhabiting it* as created *ex nihilo* by God. Spinoza, influenced too by the ancient kabbalistic and Neoplatonic writings that had influenced Henry More, had effectively made the entire extended material world itself into an attribute of God, an idea to which More reacted with horror. For Spinoza, the ultimate substance making up the world had the attributes of thought and extension, and so considered *as* extended, God was simply identical to the world grasped in its entirety or as "one".[23]

Leibniz, whose conception of the relation of God and world had elements of this Neoplatonist emanationism,[24] was clearly influenced by Spinoza and interested in his ideas, but at the same time did much to cover up this interest.[25] Perhaps the strength with which Leibniz resisted pantheism was proportional to the perceived need to distinguish his own views from this clear heresy. Leibniz's monadological view gave to the material world and its parts something of the quality of a living thing, an idea prominent in the thought of Cudworth. While for Newton the world was made up of "dead" matter, passively moved around by the will of an omnipresent God acting at every single point in the universe, the bodies making up Leibniz's world *acted*, but not *on* anything other than themselves.[26] Nevertheless, Leibniz opposed the Spinozist view which made God *entirely* "immanent" to the extended world. From Leibniz's point of view, Spinoza, like Hobbes, had sacrificed any and every conception of individuals as freely self-determining, by subjecting them to natural laws conceived as absolutely determining in the same way as the voluntarists' all-powerful God. These metaphysical issues concerning God's relation to nature and to the human community and the individuals in it would later dominate German idealism in the post-Kantian period when the views of Spinoza and the Neoplatonists were revived and popularised.

Leibniz's interest in Neoplatonism was, however, not simply manifested in his metaphysical conception of the universe, which combines elements of the Platonic and Aristotelian traditions with those of the emerging new physics, or contemporary ways of conceiving the social order. He also seems to have been attracted to, and interested in, mystical *experience* such

as that of the medieval Christian mystics. According to Jean Baruzi, Leibniz was "nourished on mystic literature. He was familiar with Jacob Böhme, [John of] Ruysbroeck, John of the Cross, [Valantin] Weigel and [Johann Angelus] Silesius, as well as Saint Térèse and Angela of Foligno" (Baruzi 1907: 436n1). Here too, however, Leibniz's attitude was reconciliationist. Mystical "contemplation" was, for him, neither supra- nor irrational, and he opposed the "quietism" of those who, like the Catholic bishop François Fénelon (1651–1715), advocated an abandonment of discursive reason ("meditation") and intentional action in pursuit of an entirely passive union with God. "The contemplation of mystics, he affirmed, 'was nothing other than a very clear view of an infinitely perfect Being'. And the thought that raised itself to God is meditative and contemplative at the same time" (ibid.: 437).[27] The modern investigation of nature, which Leibniz recognised as a fundamentally communicative, social activity, was itself a route to the appreciation of "God's glory", and Leibniz saw scientific activities as equally appropriate for religious orders as for scientific academies. "Social action", notes Baruzi, "is no stranger to the metaphysics of Leibniz: it is, one could say, the *ultimate reality of the Leibnizian universe*" (ibid.: 456).[28]

But if Leibniz did not see mystical states in irrational ways, others did, and his ideas later came to be linked with those of Emmanuel Swedenborg, the Swedish scientist and purported clairvoyant who believed he could communicate with the spirits of the dead and prophesy future events. Swedenborg's brother-in-law and mentor, Eric Benzilius, had met Leibniz in 1697, as Benzilius and Swedenborg had wanted to set up a Swedish Academy of the Sciences, modelled on the scientific academies with which Leibniz had been involved (Scuchard 1998). Swedenborg's basic interests, however, were as much in mystico-religious experience as in science itself. In a bizarre episode, Swedenborg later came to play a crucial role in Kant's break with his own early attempts to synthesise Leibniz and Newton and his turn towards his transcendental philosophy. In 1766, Kant published a book, *Dreams of the Spirit-Seer*, in which he satirised the popular interest in Swedenborg's prophetic visions. This book seems to have come at a turning point in Kant's own philosophy in which he criticised the more Leibnizian views he had held up to that time. According to recent interpreters (Laywine 1993: 57; Schönfeld 2000: 237–44), Kant there treats Swedenborg as a type of *reductio ad absurdum* of his own earlier metaphysical answer to the mind–body problem.

In his earliest work, Kant had held to a type of monadological conception of the world, although, *contra* Leibniz, it was one allowing *actual* causal interaction between monads. In Kant's version of the monadology, monads, considered as point-like, did not *occupy* a space conceived (as with Newton) as a type of absolute pre-existing "container". In another sense, however, they could be conceived as *in space*. Because they interacted by means of positive and negative forces, the idea of the space that they were "in" could

be understood as, in some way, *a product of* that interaction. Kant had believed that with these background ideas, one could solve the problem of how material and nonmaterial monads (the mind and the body) could interact.

Kant's reflections on Swedenborg's implausible claims about seeing and communicating with nonmaterial monads (souls departed from their bodies after death) raised the question of how material and nonmaterial monads (bodies and souls) could interact in life. If a soul could have a causal effect on a body in life (the body of the person whose soul it is), why couldn't disembodied souls (souls after death) continue to have causal effects on *other bodies*—e.g., causal effects on their sense organs? Why couldn't we *all see* spirits as natural occurrences, as Swedenborg claimed to do? Kant seems to have answered this question by appealing to something like a "category mistake"—the soul is the proper object of a distinct *kind* of cognition and knowledge, one based on concepts alone, and we should not confuse this type of knowledge with that gained from sensory experience. Rather than try to work out how souls interact with bodies, we should regard them as objects of distinct *types of knowledge* (Kant's version of "cognitive pluralism") related to distinct *kinds of things*, which he came to distinguish as "phenomena" and "noumena".

Traditional philosophy, Kant thought, made the same mistake seen in Swedenborg's "spirits"—confusing objects properly belonging to different kinds of knowledge. The way forward in metaphysics was to pose the question of "transcendental reflection": Which particular kind (or source) of knowledge did a claim belong to? To confuse different types (or sources) of knowledge was to fall into a distinct type of error that he first called the error of "subreption" and later, the "transcendental illusion".

The influence of Swedenborg might be taken as a touchstone for the issue of the limits to any *irrationalist* dimension to post-Kantian directions in German philosophy. Undoubtedly, the German idealism flourishing after Kant enthusiastically took up elements from a heterodox mystical tradition that included many irrationalist elements. This is particularly true of Schelling, who is said to have become interested in Swedenborg after the death of Schelling's wife in 1811. At the same time it is clear that this popular tradition could be thought of as giving "symbolic" expression to truths, rather than as presenting some literal account of the world. This seems to have been Hegel's more rationalist orientation to this tradition, and it is more than likely that he maintained no belief in a personal God or in the afterlife, and seems instead to have accepted Kant's position on the non-separability of the individual mind from the body.