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Article summary

Monads serve as the metaphysical foundations of Gottfried Wilhelm Leibniz's mature metaphysics. In doing so they play a metaphysical role similar to the metaphysical role of atoms in traditional atomist theories. Like traditional atoms, monads are true unities, naturally indestructible, and persist through changes in ordinary bodies. Unlike traditional atoms, monads are unextended, metaphysically prior to space, and immaterial.

Monads have perceptions, appetites and points of view. Leibniz distinguishes three kinds of monads on the basis of their representational capacities. The lowest kind of monad—"bare" monads or "vegetative" souls— only have perceptions so faint and confused that they are unable to enjoy distinct, conscious representations. Leibniz likens them to our minds when we are in a deep sleep or in a daze. The intermediate level of monad—sensitive monads or animal souls—have perceptions that allow them to enjoy conscious representations of distinct entities. The highest level of monad—minds or human souls—enjoy higher-order thoughts. In virtue of such higher-order thoughts, minds are able to think about their perceptions, themselves and necessary truths.

1. Foundational Role

Monads serve as the metaphysical foundations of Gottfried Wilhelm Leibniz's mature metaphysics (see Leibniz, G. W.). In doing so they fill the same role in Leibniz's philosophy that, for example, material atoms fill in the philosophy of traditional atomists (see atomism, ancient).

Traditional atomists hold that ordinary objects of experience, such as tables and chairs, birds and bees, are constituted by tiny extended atoms. They commonly maintain that atoms are true unities, naturally indestructible, and persist through changes in ordinary bodies. Furthermore, atomists typically claim that atoms exist in a more fundamental sense than the ordinary bodies they constitute. Atomists think that atoms *really* exist, that they are the world's *true* substances, and that the bodies they constitute—things like tables and chairs, birds and bees—enjoy an existence that is only derivative or dependent on atoms.

Leibniz's monads are like traditional atoms insofar as Leibniz holds that monads are true unities, naturally indestructible, and persist through changes in ordinary bodies. Leibniz also agrees that monads exist in a more fundamental sense than the things they constitute. So, for example, in a work commonly referred to as

the *Monadology*, Leibniz tells us "there must be simple substances, [that is, monads] since there are composites; for the composite is nothing more than a collection, or *aggregate*, of simples" (Leibniz 1714a: §2). Furthermore, like atomists, Leibniz claims that monads *really* exist, that they are true "substances," "the true atoms of nature," and that other entities, non-substances, enjoy an existence that is only derivative or dependent on monads (Leibniz 1714a: §3).

In spite of such similarities, however, Leibniz's monads differ in important respects from traditional atoms. Strikingly, Leibniz's monads are unextended and not located in an independently-existing (substantival) space (see space). For Leibniz monads must be unextended because they are simple. An extended atom—even if naturally indivisible—would still have parts: for example, a left half and a right half, an inner core and an outer rind. If monads are genuinely simple substances, they must be unextended. Leibniz also argues that monads cannot be in an independent space because space itself depends metaphysically on the world's true substances (Leibniz 1715-16: 25-26). Although scholars disagree about how Leibniz thinks of monads as related to space, it is clear that he thinks that monads are metaphysically prior to space itself.

2. Monads as Immaterial Substances

Leibniz's monads also differ from traditional atoms in being immaterial. Monads are minds, souls, or principles of life (Leibniz 1714b: §1). Leibniz holds that each monad is associated with a body that it dominates (Leibniz 1704: 58). My mind or soul is a monad that dominates my body just as your mind or soul is a monad that dominates your body. In contrast to Descartes, Leibniz argues that non-human animals also have souls that dominate their bodies (Leibniz 1714a: §14; 1704: 67), and, in contrast to others, Leibniz argues that there are no minds or souls that do not dominate some body or other. Even angels, Leibniz insists, are embodied (Leibniz 1706-1716: 61). In keeping with the suggestion that monads are essentially mental, Leibniz insists that their properties are exhausted by perceptions and appetites (Leibniz 1714b: §2).

It is in virtue of a monad's perceptions that it represents things other than itself. In this respect, Leibniz's understanding of perception is very much like our own. Just as we think that we may perceive, say, a sunrise or a cup of coffee, Leibniz thinks that monads perceive a world around them. Indeed, Leibniz maintains that each monad has its own distinct point of view, an outlook from which it perceives other things (Leibniz 1714a: §57). Leibniz's thinking about monadic perception is further developed by three additional theses. First, Leibniz claims that a monad perceives everything that happens in its world. Indeed, he argues that a monad perceives not only everything that happens in its world at a moment, but also everything that has ever happened in its world and everything that ever will happen in its world (Leibniz 1686: §9). Second, Leibniz holds that not all perceptions are equally clear and salient. A monad might have a clear and striking perception of, say, the sun, but only a confused and faint perception of a

tiny insect or a distant star (Leibniz 1714a: §60). Third, according to Leibniz, some perceptions may be so confused and dim that we are not even consciously aware of them (Leibniz 1704: 53)(see also consciousness). When a stack of plates crashes on the kitchen floor, we may not be able to distinguish the breaking sounds of the individual plates. When we enter a deep sleep, our perceptions in general may fail to rise to the level of conscious awareness altogether (Leibniz 1686: §33).

Leibniz holds that monads cannot causally interact with one another. Such interaction, he thinks, would require properties to be transferred from one monad to another—something he thinks is impossible. Changes in monads must therefore be brought about internally and Leibniz calls the internal principles that bring about change within monads "appetites" (Leibniz 1714a: §7). Leibniz's understanding of appetites is at least initially much like our understanding of desires. A monad changes from one perceptual state to another in virtue of the appetites or desires it has for various represented states. Leibniz's thinking about monadic appetites is again developed by three additional theses roughly paralleling the previously mentioned theses in connection with perception. First, just as at every moment a monad enjoys infinitely many perceptions enabling it to perceive everything that happens in its world, so too at every moment a monad enjoys infinitely many appetites driving it from one universal perceptual state to another. Second, just as not all perceptions are clear and salient, not all appetites, for Leibniz, are equally efficacious (Leibniz 1714a: §15). My appetite to remove my hand from the hot stove may be very strong and effective, while my appetite to shift slightly in my chair is very weak and ineffective. Finally, just as perceptions may be so confused and dim that we are not consciously aware of them, so too appetites may be so weak that we are not consciously aware of them either (Leibniz 1704: 165). My appetite to remove my hand from the stove may utterly dominate my conscious awareness. I may never be consciously aware of my slight appetite to shift in my seat.

Leibniz's claim that monads cannot causally affect other monads raises a *prima facie* difficulty for his philosophical system. If monads cannot causally affect one another, and all creatures are metaphysically dependent upon monads, how does causal interaction occur? Leibniz's answer is to be found in his doctrine of pre-established harmony (Leibniz 1686: §33). Having ruled out the possibility that monads causally interact on philosophical grounds, and having rejected the theory of occasionalism on theological grounds, Leibniz proposes that monads causally unfold of their own accord, but appear to causally interact with one another because their actions are coordinated from the start by God. In an analogy offered by Leibniz himself, a universe of monads may be likened to so many synchronized clocks (Leibniz 1696: 147-148). My mind, for example, might unfold under its own intrinsic appetitive forces so that it feels pain at a particular moment. Other monads might at the same time unfold under their own intrinsic forces so that at the very moment my mind feels pain my hand touches a hot stove. The two events—my feeling pain and my touching the stove—are causally distinct but perfectly synchronized. The regular co-occurrence of such events, Leibniz

maintains, gives rise to the false, if understandable, assumption that there are genuine causal interactions between monads.

3. Three Kinds of Monads

Leibniz distinguishes three, hierarchically ordered, kinds of monads on the basis of their representational capacities (Leibniz 1714b: §4). The perceptions of the lowest kind of monad, which Leibniz calls "bare monads," are typically highly confused. He tells us that "If, in our perceptions, we had nothing distinct or, so to speak, in relief and stronger in flavor, we would always be in a stupor. And this is the state of bare monads" (Leibniz 1714b: §24). Leibniz also calls bare monads "vegetative souls," and as that name implies, the souls of plants serve as paradigmatic examples of bare monads. In some sense, even the souls of plants, according to Leibniz, perceive the world around them. Indeed, even plants represent their whole world, past, present and future. Nonetheless, representational states of the souls of plants are so confused and indistinct that nothing in particular arises to consciousness. The soul of a tree may in some sense perceive the sparrow on its branch, but it cannot be consciously aware of the sparrow as a distinct entity.

Monads of the next, intermediate level enjoy all the representational capacities of bare monads plus the ability to be consciously aware of distinct entities as distinct entities (Leibniz 1704: 173). Leibniz calls such monads "sensitive" and offers animal souls as paradigmatic examples. Leibniz often uses the term "sensations" to denote the perceptions characteristic of sensitive souls. Unlike the perceptions of bare monads, sensations rise to the level of conscious experience. A cat, unlike a tree, can be consciously aware of a sparrow perched on a branch, and, furthermore, it can perceive the sparrow as an entity distinct from the branch, the trees leaves, etc.. It is worth noting that sensations are in one way distinct and in another way, confused. Sensations are distinct insofar as they are available to consciousness and distinguishable from other representations. They are nonetheless confused insofar as they are literally fusions, or jumbles, of finer-grained representations. When my cat spies a blue jay, a sensation of blue may rise to the level of her conscious awareness (and in that sense be distinct), and yet that very sensation must nonetheless involve a confusion of countless smaller, indistinct perceptions (and in that sense be confused) (Simmons 2011).

Monads at the highest level enjoy all the capacities of monads of the lower two levels plus the ability to have higher-order thoughts (Leibniz 1686: §34). Leibniz calls such monads "minds," and the souls of human beings serve as paradigm examples of them. In virtue of enjoying higher-order thoughts, minds are able to reflect on their own perceptions as well as on themselves. A mind may not only have a sensation of blue, but may also have thoughts such as *I am having a sensation of blue*. Such higher-order thoughts, Leibniz maintains, allow minds to grasp necessary truths, for example truths concerning morality, mathematics and metaphysics (Leibniz 1714b: §5; Leibniz 1704: 173; see necessary truth and convention). As a mind, I do not merely perceive the world around me, I also come

to understand truths such as *2+2=4* and *lying is wrong*. It is because minds are able to grasp such truths that they are able, according to Leibniz, to enjoy a distinctively moral identity and to enter into society with God. Indeed, the capacities which set minds apart from vegetative souls and bare monads, Leibniz insists, ground the traditional view that human minds have been made in the image of God. (Leibniz 1714a: §83; Jolley 2005).

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See also

Leibniz, substance, space, consciousness, necessary truth and convention, perception, atomism