The Opening Arguments in Leibniz' *Monadology*

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The first few sections (numbered paragraphs) of the Monadology establish what monads are—the most basic parts of the universe—and that they exist:

1. Defn: Monad = a "simple"; i.e., a substance without parts (M1).
2. Defn: Composite = an aggregate of monads (M2).
3. Composites exist (M2).
4. Therefore, monads must exist (M2), and are the fundamental elements of things (M3).

Note that even though Leibniz sometimes refers to monads as "atoms," they cannot be like what we call atoms these days. The things we call atoms have parts (nucleus, protons, electrons, neutrons), and those parts have parts (quarks, etc.). If something has any parts at all, it is not a monad. Monads are the partless parts that ultimately make up the universe.

Also, Leibniz establishes some of the properties of monads, all of which follow from their definition: they have no size or shape (M3), are naturally immortal (M4-5), and cannot be changed by anything outside themselves (M6-7):

5. Since monads have no parts, they have no extension (size) or shape, and are indivisible (M3).
6. Since monads have no parts, they are naturally imperishable (M4). [Leibniz assumes that to "perish naturally" requires parts; natural perishing happens by decomposition—"all natural change is produced by degrees," M13.]
7. Since they have no parts, monads cannot be formed by composition; so they cannot be formed naturally (that is, in the course of natural events) either (M5).
8. So (by steps 6 & 7) monads only begin by creation and end by annihilation (M6).
9. Composites begin or end through their parts (M8).
10. For a thing to be changed internally by something outside it, it must have parts (implicit in M7).
11. So a monad cannot be changed internally by anything outside it; monads are "windowless" (M7).

Next, Leibniz argues that monads—despite having no parts—have certain qualities, and are not alike. In fact, he says each is unique, and constantly changing:

12. To be a being at all, something must have qualities (M8).
13. So (by 4, 12) monads must have qualities (M8).
14. If we assume a plenum in motion (that is, a universe with no vacuum, completely filled with monads which move around), each location in the universe has a monad in it (M8), and the monads are moving around.

15. If monads were all exactly alike, then every place in the universe would be the same as every other (M8): when one monad moves out of a given location, it is replaced by another monad that is exactly the same.
16. We only perceive changes in things because of differences in their parts, i.e., in their monads (M8).
17. So if monads were all alike, then we couldn't perceive changes in things (M8).
18. But we do perceive changes in things (assumed in M8).
19. So, monads can't all be alike (M8).
20. No two beings in nature are exactly alike; each has some internal difference from every other (M9). [This principle is known as the Indiscernability of Identicals.]

OK, so now we know something about the fundamental components of the universe. But there must be more.

The universe consists of zillions of monads—really, infinitely many, since each is infinitesimally small. Each one of these monads cannot be altered by anything outside itself (except God). And at the same time, we see there is a great deal of diversity and change in the universe. So all change and diversity in the universe must ultimately be explained by something within the monads themselves, a sort of internal programming that makes each monad behave as it does, which Leibniz calls a "multitude" of "diversity" within each and every monad:

21. Every created being (i.e., everything besides God) is subject to continual change (M10).
22. So, a monad's changes must come from an "internal principle" (i.e., from within itself) (by 11, 21) (M11).
23. All natural change happens by degrees: something changes and something remains within the thing that changes (M13).
24. So, there is a diversity of qualities/properties in things that change (M13).
25. So, there is a multitude of diversity within each monad—despite its having no parts—because each continually changes (by 21) and they do not naturally come into being or perish (by 6, 7) (M12, 13).

Now Leibniz takes a closer look at this diversity within each monad—its "internal principle," which we can think of as its internal programming. He starts with some definitions:

26. Defn: perception = "the passing state which involves and represents a multitude in the unity or in the simple substance" (M14); i.e., when a monad (e.g., your mind) experiences a change.
27. Defn: apperception = consciousness (M14).
28. Defn: appetition = the action of the internal principle which brings about the change or passage from one perception to another (M15); i.e., that which causes each monad's perceptions to change.

Think of it this way, using your own mind as an example: change is happening from one moment to the next; you have one perception, then another. So, each perception you have is, as Leibniz describes, it, a "passing state." You are conscious of some of your perceptions; that is, you have

some "apperceptions." And there must be some cause for why you experience one perception after another, some cause of why you move from one to the next. That cause is "appetition."

Leibniz mysteriously says that perception "involves and represents a multitude." This will be explained more later.[1]

But he wants to make a couple of other points first. He knows that many of us believe two things about perception:

> a. We think we perceive things by means of our senses. That is, we (like Descartes) believe things outside us stimulate our sense organs and this, in turn, causes us to have perceptions.
>
> b. We also believe our perceptive apparatus is a sort of machine: we have nerve endings that stimulate the brain, and the brain itself is a complex (composite) organ with many parts doing lots of things that help generate our perceptions.

Leibniz obviously must reject (a), because it assumes that one thing can affect another. According to him, none of the fundamental components of the universe (monads) *ever* affect each other, so things outside the mind cannot cause the mind to have ideas. Also, he agrees with Descartes that the mind is indivisible; thus it, too, is a monad (M14).

That's why Leibniz argues the way he does in M17. Here he says it is wrong to believe perceptions come from our minds being composites that behave like machines. If you imagine the mind as a machine, try imagining that it's big enough to walk around inside and look at all the parts. If you examine it, you'll just see parts pushing each other, but no perceptions. Imagine stepping inside a big brain: you'll see lots of cells and vessels and stuff, but nothing there that looks like, for example, your idea of your mother. So no composites (including machines) perceive; perceptions belong only to monads.

[1] We have a hint of his meaning in M16, where he says "We ourselves experience a multitude in a simple substance when we find that the least thought we ourselves apperceive involves variety in its object." Think of it this way. Leibniz believes (somewhat similar to Descartes) that your mind is a simple (indivisible, unextended) substance. So Leibniz holds that your mind is a monad which has perceptions, apperceptions, and appetite. Notice that any thing you think of has some "variety" in it: for example, think of a triangle and it has 3 sides, 3 angles, a certain size, etc. Think of just one of the sides and it has two ends, a certain length—even in this "one" thing there are really several things. Now consider how many thoughts you have. There is, then, tremendous "variety" in the monad that is your mind, and that's just the variety you are aware of, by apperception. Leibniz thinks you have many more "perceptions" which you are not aware of. This, then, serves as a sort of model for how there can be a multitude even in a partless monad.