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“Force, Absolute Motion, and the Threat of Circularity in Leibniz”

The concept of living force (*vis viva*) enters into Leibniz's account of motion in two basic ways. In the first place, living force serves as the metaphysical foundation of all real and absolute motion. Thus, although motion is in itself only imaginary, it rises to the level of reality insofar as it is grounded in---and therefore derives some measure of reality from---living force, which is real *per se*. Similarly, though in itself change of place can correctly be ascribed to bodies only relative to a frame of reference, the fact that some changes of place are grounded in (or caused by) living force renders motion absolute, since on Leibniz's view being caused by force suffices to make a change of place the true, absolute motion of a body. In addition to these metaphysical contributions, though, living force also plays an important epistemic role in Leibniz's account of motion. For on his view we can never tell merely from a consideration of the phenomena which changes of place are the true motions of bodies, because we always confront an “equivalence of hypotheses” about motion, that is, a multitude of assignments of motions to bodies all of which are consistent with what we observe. Nonetheless, he does think we can discover the forces in bodies, and since the true motions are those grounded in force, he concludes that force allows us to discover the true motions of bodies despite the equivalence of hypotheses.

In this essay I want to focus on the epistemic role of force in Leibniz's account of motion, and in particular on a certain circularity that appears to arise in connection with it. Briefly stated, the circularity is this. Leibniz, as I have noted, believes that force holds the key to discovering the true subjects of motion. However, he also maintains that the correct way to estimate force is by its effects, for instance, by how high it can raise a body of a given mass. For reasons that will soon become clear, though, we evidently

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cannot estimate the effect of a force unless we first know the true motions of bodies. So in short, we can't know the true subjects of motion unless we first know which forces to ascribe to bodies, but we can't know which forces to ascribe to bodies unless we first know which bodies are the true subjects of motion. Clearly if Leibniz's view were circular in this way, then it would commit him to the position that we can never discover either the force in nature or the true motions of bodies. But this is problematic, because he insists that knowledge of force is within our reach, and he at least appears to hold that we can discover the true motions of bodies.

In what follows I argue that this epistemic circularity is merely an apparent problem for Leibniz, one that arises only on a certain construal of his view that we are likely to find tempting but that is nevertheless inaccurate in an important respect. I will do so by first explaining in detail why Leibniz's own statements seem to suggest this inadequate construal, and then proposing a novel understanding of the epistemic role of force which is textually well-supported and on which the circularity does not even arise. The key to this proposal will be to recognize the importance of considerations of intelligibility to Leibniz's understanding of how we discover the forces, and therefore the true motions, in nature.