

## Reply to Ohad Nachtomy

I am very grateful to Ohad Nachtomy for his extremely generous review of my *Leibniz*, to which I will respond correspondingly briefly.

First a few words on the intended audience: it was commissioned for Polity Press's Classic Thinkers series, the mandate for which was to give a brief introduction that would "situate thinkers within their social and historical contexts, showing how their work emerged from a particular setting and addressed some of the concerns of their time". Nachtomy is somewhat skeptical "whether the book will become popular among students without much background in Leibniz". I understand his point. It was a huge challenge to try to encapsulate Leibniz's incredibly rich thought in a mere 200 or so pages, and there is no doubt that the result is a very condensed argument (I had to jettison a considerable body of text in face of an initial word limit of 80,000 words). And even graduate students in philosophy will perhaps have difficulties with some of the material on Leibniz's mathematical philosophy and dynamics in chapters 4 and 6. However, it was not intended just for philosophers, but also interested colleagues in a wide variety of disciplines—from linguistics, law and the life sciences to mathematics and physics—and I like to think that they might all find something of interest in it.

So it is not really intended as a summary of my own interpretative efforts, so much as a fresh presentation of why I think Leibniz was such a great and innovative thinker. In writing it I depended heavily on the work of other scholars, especially for those areas of his thought on which I had not previously concentrated: language, logic, jurisprudence, the life sciences, theology and morals. This was very rewarding, and it gave me a renewed appreciation for the wonderful quality of contemporary Leibniz scholarship. Still, I had to express all this in ways that made sense to me, and I will be curious to see how some of my readings are received by other scholars, particularly my interpretations of Leibniz's accounts of contingency and free will, of the thorny question of the relation of his metaphysics to Spinoza's, and of the connection of his dynamics to his theory of substance.

One scholar from whose work I profited is Ohad himself, especially his insights about programs and the functional characterization of natural machines in Leibniz. He approves my writing that

“it is the internal law governing the unfolding of the states of a substance that accounts for it having a genuine unity, as opposed to the accidental unity of an artificial machine (73)”, but suggests that there is “a slight vacillation here between seeing the notion of natural machine as applying to the *body* of an individual substance, the animal, or to the individual’s substance, or the animal itself.” I confess I do not see such a vacillation on Leibniz’s part. On my reading, living things for Leibniz are embodied (and therefore corporeal) substances; their bodies are machines; the unity lies in the substance, not in the machine (since, for instance, the outer body of the caterpillar is cast off as it develops into a butterfly, but the substance of the creature remains the same, existing in a smaller organic body during the transformation). The internal law governing these changes, together with the appetitive principle actively producing them, is what constitutes the unity of the substance.

Nachtomy closes with some interesting speculations about other senses of infinity in Leibniz’s philosophy not included in my analysis. He suggests that there is a sense of infinity distinct from both the syncategorematic infinite that applies to matter, and the hypercategorematic infinite that applies to God, a non-quantitative sense that also applies to created substances. I would respond that each of the infinitely many created substances is finite, but that the infinity enfolded in each one (whether of perceptions within perceptions in any of its states, or of parts within parts of its body) is always a syncategorematic one. But perhaps there is a hidden connection between this topic and that of the previous paragraph. For at the end of his “Leibniz on Artificial and Natural Machines...”, Nachtomy asks: “Does the same kind of infinity apply to both natural and artificial machines? And, if not, what kind of infinity applies to natural machines and what kind to artificial machines?” (2011, 80). Again, I believe that the same kind of infinity applies in both cases, the syncategorematic. And I say this while agreeing with Ohad’s analysis of the difference between the two kinds of machines: natural machines, he writes, “are defined and informed by a single rule of generation, compatible with their having an infinitely complex structure such as an infinite series or a fractal-like structure” (77), whereas an artificial machine expresses only the external ends of its designer, and has a correspondingly finite machinic structure: it is not a machine in all its parts to infinity, despite its being divided into an actual infinity of parts. But I do not think that this makes a difference in kinds of infinity. And I

suspect that the source of our disagreement here (and perhaps in the previous paragraph too) is that I do not agree that the machinic nature of an organic body makes it into a true unity or substance.<sup>1</sup> The organic body, I believe, is not itself a substantial unity; rather it contains something having substantial unity, namely the monad. The spatial unity conferred on a body by its being ordered into a system is accounted for by the correspondence or cooperation of the various monads; but this consists in an agreement in relations only. The law of the series in the dominant monad constitutes the reason for all the various stages of the body of a living creature being embodiments of the same creature, thus accounting for the living creature's being indestructible. This gives a unity in the sense of threading the various body-stages through time, but it does not produce a real union of the constituents making up a substance's body at any instant.

But I will present my arguments for this interpretation in full in a forthcoming work, *Ariadnean Threads*. So let me end here, in the hope that we have opportunities for continuing this debate elsewhere. Many thanks again to Ohad for such a generous and supportive review.

#### Reference

"Leibniz on Artificial and Natural Machines: Or What It Means to Remain a Machine to the Least of Its Parts", pp. 61-80 in J. E. H. Smith, O. Nachtomy (eds.), *Machines of Nature and Corporeal Substances in Leibniz*, Dordrecht: Springer, 2011.

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<sup>1</sup> Cf: "As Fichant observes, the central characteristics of a natural machine are (1) that its composition extends to infinity and (2) that it is a true unity" (Nachtomy 2011, 70-71); "On this model, it seems, we can maintain Leibniz's point that the distinction between artificial machines and natural ones coincides with the distinction between a true unit – that is, a substance – and, a collection of them – that is, an aggregate." (75)