foreword

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In the academic world it is an open secret that a certain percentage of edited anthologies are doomed to sink quickly beneath the waves, never to be heard from again. Often amounting to repositories for well-meaning conference papers, such books are those that fail to gain traction with the reading public, whether through a lack of internal unity of their various chapters or for purely accidental reasons. This three-volume collection now before you is something much better than that, and thus deserves a more glorious fate. Its title, *Virtual Interiorities*, should be read in a surprisingly literal manner, for its chapters discuss nothing less than the possible transformation of our conception of space (and even time) by way of a number of challenging technologies, ranging historically from amusement parks to the latest video game interfaces. In the introductions that follow for each book, the editors give a fine chapter-by-chapter overview of the individual contributions that form this collection. Here I will do something different, providing a general philosophical framework to assist the reader in grasping the possible stakes of *Virtual Interiorities*.

One common way to think of space and time is to view them as stable, empty containers within which things and events are located. At least prior to Albert Einstein and his general theory of relativity, which speaks of the distortion of space and time by mass, the empty container theory was the dominant one in modern physical science. The locus classicus of this concept is the Principia of Isaac Newton, where we find the following emblematic words: "Absolute, true, and mathematical time, of itself, and from its own nature, flows equably without relation to anything external . . . Absolute space, in its own nature, without relation to anything external, remains always similar and immovable."[1] It could be said that the chief philosopher of the modern era, Immanuel Kant, retained this theory in his own system of thought.[2] True enough, Kant treats time and space as universal forms of human subjectivity rather than as objective containers found in the outside world. Nonetheless, both continua remain constant for Kant as well as for Newton: no stretching, bending, or twisting of time or space is conceivable for either of them.

Long before Kant this theory was defended on Newton's behalf by his ally Samuel Clarke in a famous debate with the philosopher G.W. Leibniz that ended with Leibniz's death in 1714.[3] Famously, Leibniz challenged the Newtonian conception of time and space by offering a relational alternative: space and time do not exist independently of the entities that occupy them but are defined by those entities in the first place. Among other rhetorical strategies, Leibniz ridicules the possibility that God might have created the universe ten minutes earlier than he did or one mile further to the west, since neither earlier/later nor east/west could have any meaning at all prior to the creation of the universe. Hence, space and time require a purely relational structure in which all temporal and spatial conceptions make sense only when entities are measured against one another. Given that relationality is highly fashionable in today's intellectual atmosphere, few will resist the chance to snap at the bait of Leibniz's argument. For reasons lying beyond the scope of this foreword, I am inclined to push

1. Isaac Newton, *Philosophiae Naturalis Principia Mathematica*, Book One, trans. Andrew Motte (Berkeley, CA: University of California Press, 1934), 6.
2. Immanuel Kant, *Critique of Pure Reason*, trans James Ellington (Indianapolis: Hackett, 1996).
3. *G.W. Leibniz & Samuel Clarke, Correspondence* (Indianapolis: Hackett, 2000).

back against relational ontologies of this sort. Yet that is beside the point, for more relevant to us here is the implication that far from being stable backgrounds for events—as even quantum theory still assumes—the Leibnizian model entails that our spatio-temporal framework is changeable. It was Albert Einstein who developed this possibility, in both the special and general theories of relativity, in which velocity (special) as well as mass and acceleration (general) play a previously unknown role in distorting one or both of the background continua we inhabit.

But, instead of these famous discoveries in physics, the three books of *Virtual Interiorities* discuss the possible role of technology in warping our usual sense of space and time. In a sense, this far predates what we think of modern technology. Ancient empires are known to have used gigantic statues and related techniques to terrify their enemies. Indeed, architecture itself might be viewed as a method of distorting natural space into something more emphatic or even psychedelic, with torch-lit inner chambers or distressing pyramids and ziggurats bringing a disoriented awe to those who visit them. The present work, however, focuses on more recent history, beginning with the pioneering amusement parks of the early twentieth century. Other chapters focus on advances in video game technology, including certain engines that allow players to explore worlds where the customary laws of physics are violated. While there may be limits to how much space and time can be modified without neurosurgical tampering, the still-young field of virtual reality is already capable of producing vertiginous effects in its users.

It was the great merit of Jakob von Uexküll to explore in empirical detail how the environment of each animal is determined by the limits of what it is able to perceive.[4] Although his most famous example is that of the tick, I am even more struck by his observation that different animals are capable of seeing the same flash of light a differing number of times per second. For instance, a snail is able to see just three or four flashes per second; more than that and it sees a steady light instead. A human is capable of seeing more than three times as many flashes per second as

4. Jakob von Uexküll, *A Foray into the Worlds of Animals and Humans: With A Theory of Meaning*, trans. Joseph O'Neil (Minneapolis: University of Minnesota Press, 2010).

snails, but fighting fish turn out to be even more gifted in this respect.[5] Of course, it is well-known that dogs hear in different registers from humans and that many animal species feel storms coming even while humans experience nothing but the blue sky above, however, the coming technologies might eventually put these animal talents within human reach. In his interesting book *Discognition*, Steven Shaviro further explores the cognitive difference between humans and such exotic creatures as slime molds,[6] but theorizing such topics in books is one thing and enabling journeys into these theorized alternate worlds is quite another. What the contributors to *Virtual Interiorities* succeed in doing is making us feel closer than ever to a technological era in which such questions as Thomas Nagel's famous query "What is it like to be a bat?" are not just philosophical thought-experiments but possible advertising slogans for products that enable customers to find out for themselves.[7] If there is anything I envy in the young, it is the fact that the power of space-time manipulation might be technologically within reach during their lifetimes, though probably not in my own. *Virtual Interiorities* improved my imagination by giving an early sketch of how such a thing might happen.

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5. See Graham Harman, "Magic Uexküll," in *Living Earth: Field Notes from the Dark Ecology Project 2014-2016*: 115-130 (Amsterdam: Sonic Acts Press, 2016).
6. Steven Shaviro, *Discognition* (London: Repeater, 2016).
7. Thomas Nagel, "What is it Like to Be a Bat?," *The Philosophical Review* 83, no. 4 (1974):435-450.

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