An Imprecise but Infinite Fall: Using Linguistic Analogy to Describe Ontologies of Floating-Point Arithmetic

Kelsey Brod
Duke University, Computational Media, Arts and Cultures, Durham, North Carolina, USA
Kelsey.Brod@duke.edu

To calculate large, sometimes infinite, space game engines use a computational methodology called floating-point arithmetic that sacrifices precision in favor of approximation. This imprecision, created by exponential scaling of determined significant digits when needed, creates gaps in information that simultaneously allows the game engine to know and not know the location of a gaming object and for the calculated object to be and not be. In *Intelligence and Spirit* (2018) Reza Negarestani argues that an observer of any given automaton (for example, a game engine) might reconstruct the rational agency of the automaton using linguistic analogy. While this analogy might at first constrain the automaton within the conceptual logic of the language used, Negarestani argues that its careful application might productively reconstruct how the automaton perceives and orders itself and its environment under a different logic. This "virtuous circle of analogy" makes two arguments: first, that language is the only resource available "for representing the intelligible order" (as communicating our conceptual, syntactical relationship to the world) and second, that the interaction of the automaton "instantiates precisely the structures from which our semantic structures have (in part) evolved," or that the act of description surfaces the description's meaning-making structure (149-150). Along with a demonstration of floating-point arithmetic in the game engine Unity, I will propose that using linguistic analogy to describe an ontology of floating-point arithmetic reveals breaks in the linguistic semantic schema that fail to articulate the automaton in its environment. Described only through aporias, such as "to know and not know" and "to be and not be," floating-point

arithmetic illustrates that paradoxes of being are created by schemas used to describe that being. Differing from Negarestani, I will argue that the careful use of linguistic analogy to describe computational ontology functions as a rupture to the structures of meaning-making rather than as a form of its validation. Lastly, following Fred Moten's argument in *Stolen Life* (2018) that the aesthetic experience can create conceptual and political change, I will argue that linguistic inabilities to describe computational ontologies of game engines may create an aesthetic experience for an observer, one in which new articulations of existing ways of being might be formulated.