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Geometry's Indisputability: From Hero to Hobbes.

In the first and second centuries, Hero of Alexandria and Claudius Ptolemy claimed that geometry was indisputable. Although philosophers had prized mathematics highly for centuries, Hero and Ptolemy cast geometrical proofs as superior to the work of philosophers. According to Hero, the statesman must employ geometry in order to distribute land precisely. According to Ptolemy, philosophers may seek knowledge but only mathematics can provide sure and incontrovertible knowledge to its practitioners. Moreover, the mathematical proofs that convey this knowledge are indisputable. After Ptolemy, only ten cases in the Greek corpus echo this claim to geometry's indisputability, but I argue that it had an overlooked and long-lasting effect. Proclus, the fifth-century Neoplatonist, appropriated it, and I argue that he took it one step further. While Hero and Ptolemy used it to position mathematics as superior to philosophers' discourses, Proclus employed it to transform them. He constructed his Elements of Theology and Elements of Physics in the style of a geometrical proof, and early-modern philosophers followed Proclus' lead. In this paper, I trace the influence of Hero and Ptolemy's portrayals of geometry's indisputability to the work of Descartes, Spinoza, and Hobbes. (Received September 18, 2015)