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What Does "Aligning" Mean? Practices of Justification across Chinese Logic and Mathematics

Mainstream philosophers of mathematics argue that philosophy should be concerned with the construction of mathematics from logical concepts alone. In this paper, I reverse the direction of construction, suggesting that the Mohists, ancient Chinese logicians, borrowed from mathematical practice to develop their systems of logic. I argue that the Mohist Canon, the logical text of the Mohists, helps to clarify the long-known developmental connection between Chinese astronomical and mathematical practice, by showing how a mathematical concept developed from its astronomical instance. Besides sharing concepts in common, ancient Chinese astronomers and mathematicians also shared models of justification or explanation. I summarize Karine Chemla's account of the practice of justification in Chinese mathematical texts and compare it with astronomical and logical practices of explanation. I conclude that these practices are similar, and that it is probable that the Mohists modeled their non-mathematical logic on the practices of mathematical justification available to them.