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Abram Kaplan* (adkaplan@fas.harvard.edu), 78 Mount Auburn Street, Cambridge, MA 02138. *Between Scholasticism and Scholarship: Figures and Equations in John Wallis' Treatise on Conic Sections.*

The mathematical investigations of John Wallis (1616-1703) exemplify the productive diversity of intellectual traditions characteristic of seventeenth century learning. I discuss the traditions that inform the innovative figures in Wallis' treatise on conic sections (1655). Wallis wrote the treatise as an introduction to the algebraic study of the conics. Wallis' construction of the conic sections and his reduction of the sections to equations reflect his awareness of contemporary traditions of infinitesimal mathematics and symbolic algebra. They also, I argue, draw on the metaphysical disputations of Francisco Suárez and earlier Renaissance debates about the angle of contact. Wallis used arguments about situs (situation) elaborated by Suárez, and measurement techniques employing it developed by the sixteenth century algebraist Jacques Peletier, to establish the priority of symbolic representations of the conic sections over their geometric, in-diagram instantiations. In other works he used erudite scholarship to explain why Greek mathematicians preferred geometry and to extract ideals of mathematical practice. He then used these same ideals to justify his own use of symbols on grounds he claimed to share with antiquity. (Received September 15, 2020)