

1106-01-1863 **Bruce J. Petrie*** (b.petrie@mail.utoronto.ca). *Natures of curves in the early modern period and the emergence of transcendence*. Preliminary report.

Comparing the classification rules of René Descartes and Leonhard Euler reveals the changing significance of nature to mathematical study. Early modern algebraic and transcendental classifications were intended to describe a mathematical object's nature. This nature was useful to determine which objects were appropriate for geometrical study especially when applied to curves. The development of calculus provided the tools necessary for algebraic analysis to uncouple the study of curves and geometry effectively removing the transcendental barrier. The geometrical purpose of the transcendental classification was rendered obsolete and was replaced by focusing on functional relationships between variables. The nature of mathematical objects inherited this algebraic purpose. (Received September 15, 2014)