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The role of typographical fixity in the acceptance of algebraic symbolism in sixteenth-century Europe

THE PRINTING PRESS dramatically affected the circulation of mathematical knowledge in sixteenth-century Europe. With the emergence of printed books, our collective memory was completely transformed. Arithmetical and algebraical problems became available in printed form with their solution methods for everyone to read and study. Mnemonic aids became less relevant for the solution of problems and problem solving was not longer the main vehicle to convey algebraical knowledge.

A second, less appreciated effect of the printing press on the circulation of knowledge was coined by Elizabeth Eisenstein (1979) by the term typographical fixity. In contrast with the textual drift in manuscript copies, form and contents of algebraical expressions became irreversible materialized by cutting type fonts for classic symbols. Problems and their solution methods got more standardized. Manuscripts often contain corrupted problems that can not be truly solved with the given formulation. Once algebra got into print, it was better formulated and understood. This preservative power of printed books is for Eisenstein a basic prerequisite for the rapid advancement of learning.

Francois Viète (1540–1603) is generally considered as the father of symbolic algebra as, in his *In artem analyticem isagoge* of 1591, he introduced vowels for the representation of unknowns and consonants for constants and coefficients. However Viète depended on an important corpus of algebraic texts, which presented to him all the necessary ingredients for his new symbolism. We will demonstrate how typographical fixity contributed to the irreversible process of the acceptance of symbolism as it was previously introduced in the works of Christoff Rudolff (1525) and Michael Stifel (1544).

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