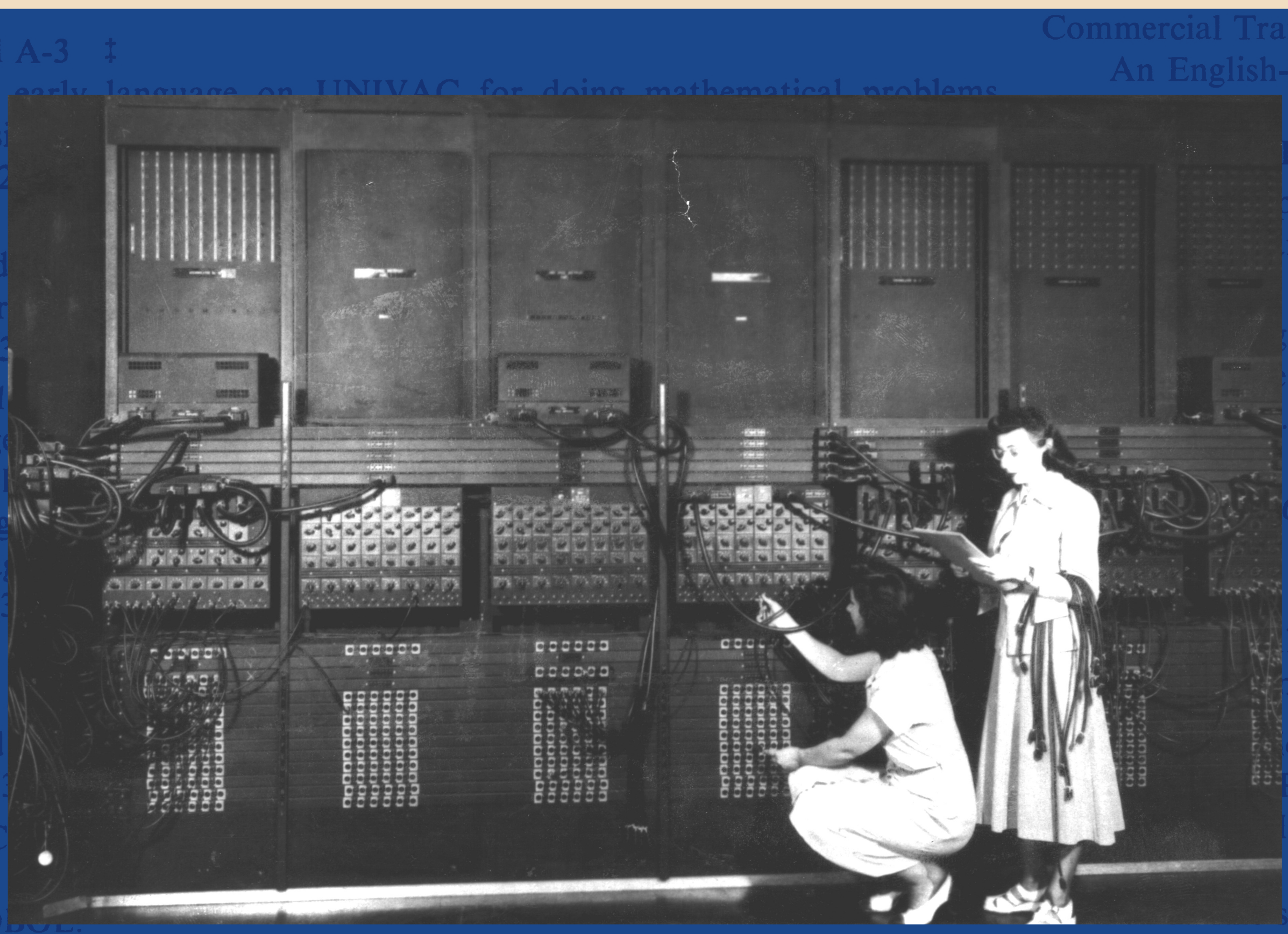
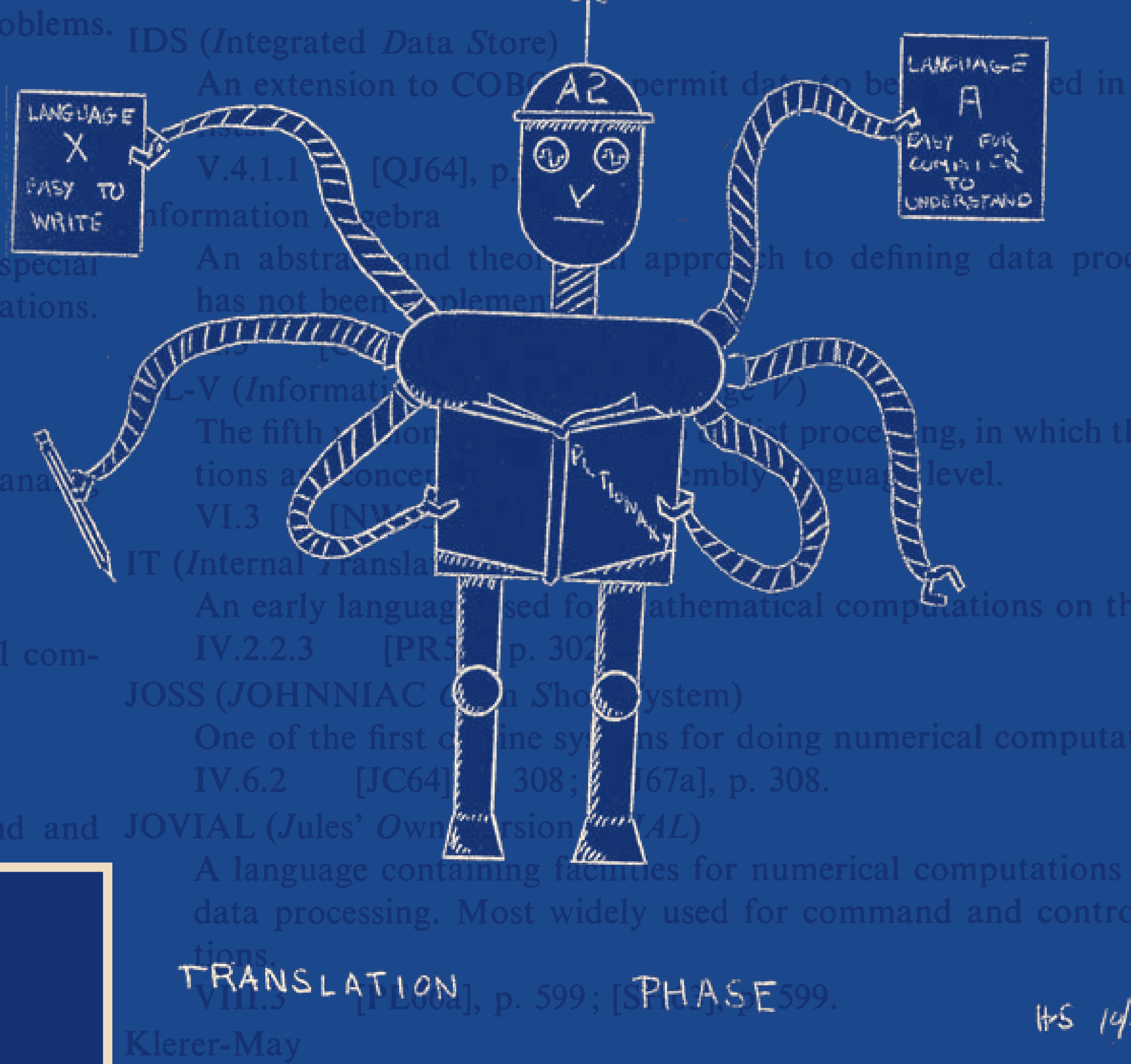
The invention of a programming language

The idea that a programming language is a standalone object independent of a specific computer came about from the meeting of three cultures of programming.



Hacker culture

Hackers have been inventing tricks to make programming easier since the ENIAC computer (1945). Early automatic coding systems A-0 and Short Code translated a limited form of symbolic notation to machine code.



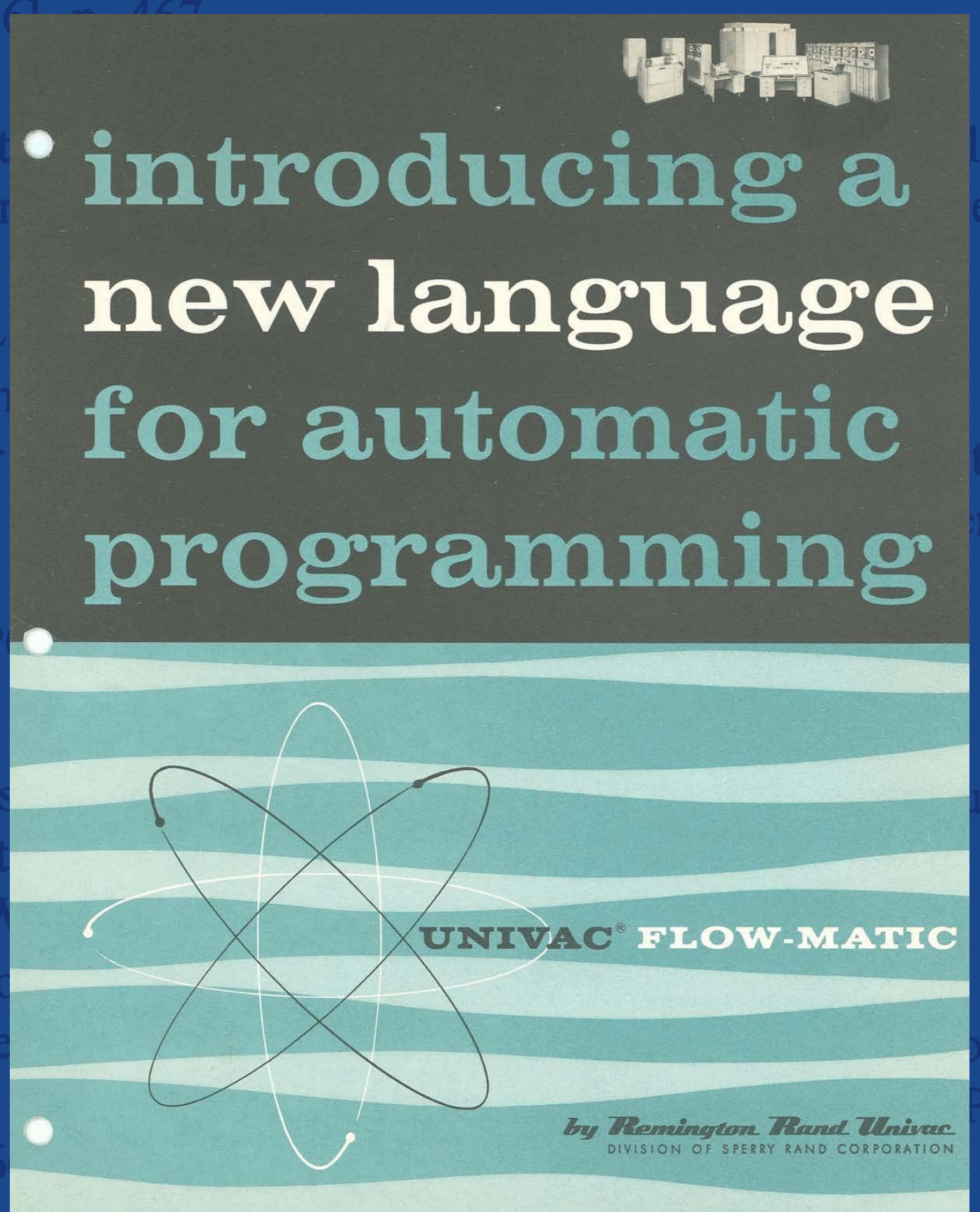
Mathematical culture

By the early 1950s, the central metaphor for thinking about programming became translation. Proponents of the mathematical culture turned to formal logic and linguistics and adopted formal grammars as a method for specifying the syntax of programming languages.

The hacker culture provided the necessary implementation tricks, the managerial culture had a practical need for the idea, and the mathematical culture provided the necessary formal language description tools.

Managerial culture

Computer installation managers wanted cross-machine compatibility of programs. They realized that a common or universal notation would enable the exchange of programs among and within organizations.



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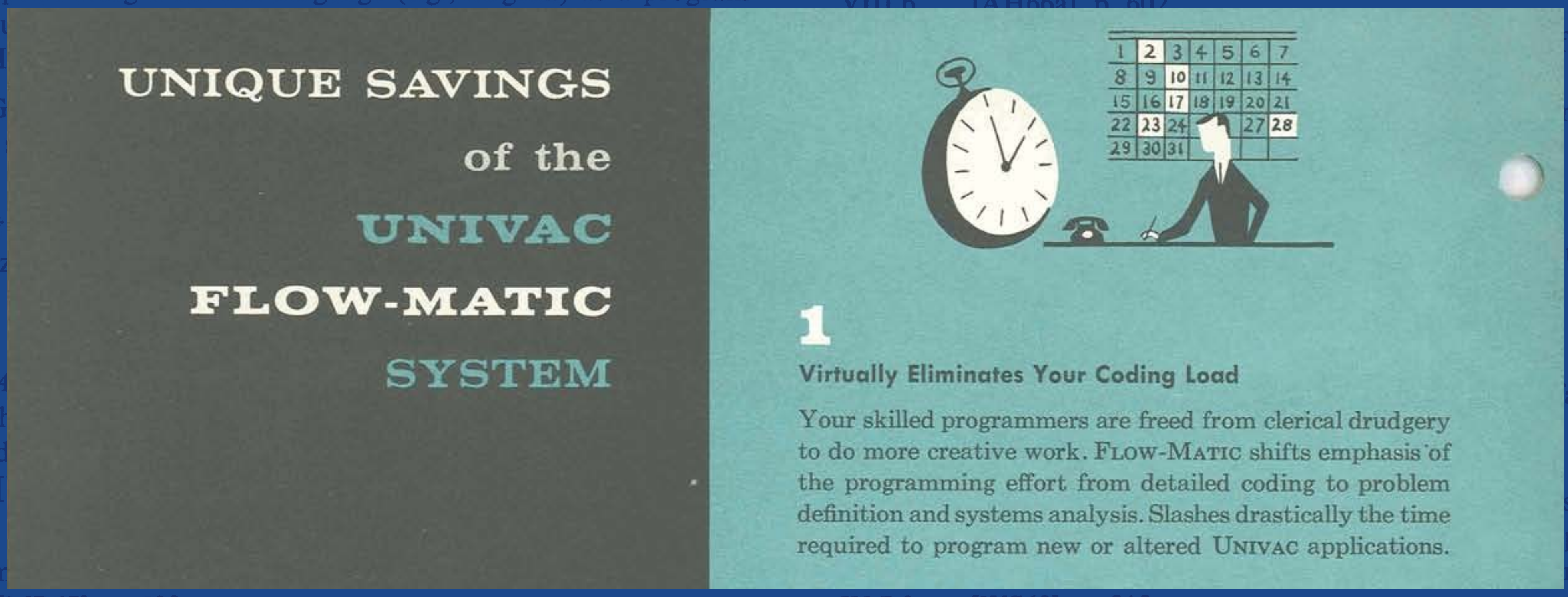

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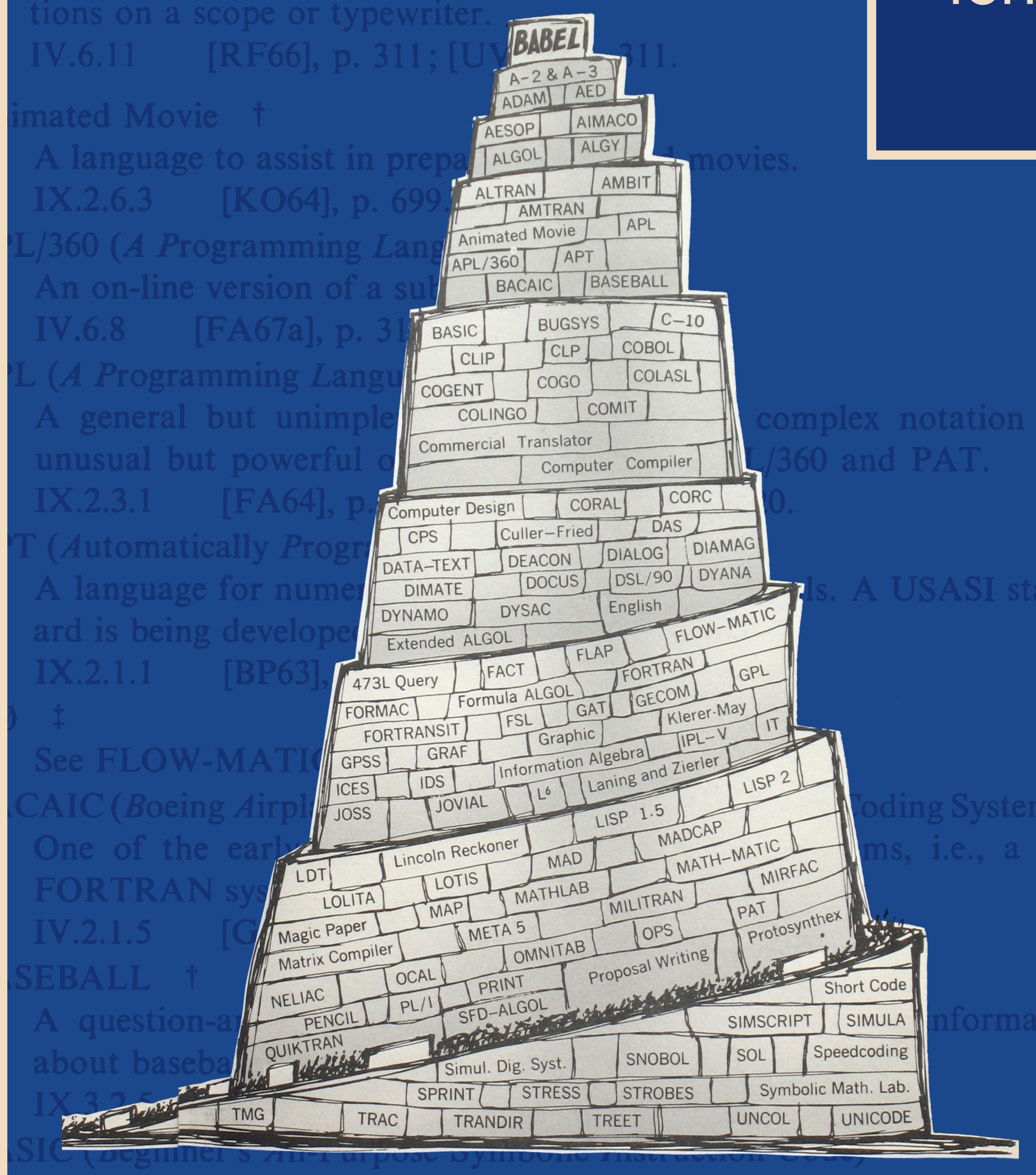

Rise of programming languages

Illustration from a book documenting the growth of programming languages by Jean E. Sammet, published in 1969.