

PATRICIA CLINE COHEN. *A Calculating People: The Spread of Numeracy in Early America*. Chicago: University of Chicago Press. 1982. Pp. x, 271. \$22.50.

Although England contained only a relative handful of "mathematically minded" men in 1700, Americans by 1840 had become inveterate, if often uncritical, consumers of numbers. How and why this came about and what the change reveals about American society is the subject of Patricia Cline Cohen's path-breaking and insightful book. Lacking a simple index of "numeracy," such as the ability to inscribe one's name on a form, which students of literacy have employed, Cohen has perforce to broaden her definition and her sources. By numeracy she means not higher mathematics but, on the one hand, the ability to perform basic arithmetic calculations and the belief that the study of mathematics was important and suitable for children, and, on the other hand, a delight in numbers and a fascination with quantifiable social facts. Her method is to analyze deeply certain episodes that she takes to be emblematic, such as the smallpox inoculation controversy in Boston in 1721 and the scandalous overestimate of northern black insanity in the 1840 census, as well as to examine changes in arithmetic texts, reference and accounting books for tradesmen, and governmental data gathering from seventeenth-century England through eighteenth- and early nineteenth-century America.

Cohen's subtle and complex arguments about the relationship between the development of capitalism and numeracy may unsettle some economic historians. Medieval and early modern capitalists managed with Roman numerals and abacuses; early mercantilist governments in Britain collected only vague and scanty figures on colonial economies and trade; and nonuniform English weights and measures, by necessitating continual conversions between unwieldy units, inhibited the expansion of knowledge of arithmetic among clerks and small businessmen, and therefore made accurate calculations of profits both extremely difficult and probably rather unusual. It was only when governments standardized currencies and other quantities in self-conscious efforts to simplify and democratize measurement; when the confident new republic's teachers came to believe that average boys could learn arithmetic; and when local governments began setting up common schools that the basic mathematical competence and desire necessary to compute profits and to collect aggregate statistics became widely diffused. If capitalism depended on information and information, on numeracy, numeracy depended on the state.

Collective action, in turn, depended on the acceptance of the often false equation of numbers with precision and objectivity. "Political arithmeticians"

from the followers of Sir William Petty in the 1690s to James Madison a century later pressed, by no means always successfully, for government collection of aggregate statistics to supply a rational basis for policy. More speculatively, Cohen suggests that the chaos due to the Protestant Reformation, the price revolution, and other crises of the sixteenth and seventeenth centuries encouraged the substitution of the apparent certainty and exactitude of quantification for that of a no longer universally agreed on faith. Cohen's explanation for the extension of numeracy, then, is less a functionalist or simple economic determinist one than an intellectual one.

Based almost entirely on "literary" sources, Cohen's arresting generalizations should receive further examination from historians of early America, as well as extension to other countries, other subjects, and other times. When and why did French, Prussian, or Italian arithmetic textbooks begin to stress systematic understanding instead of mere rote memorization of rules, as Warren Colburn's did in the 1820s in this country? Did the philosophy of teaching grammar, literature, and various sciences go through similar stages of development as those in mathematics, and what explains any differences from one area of knowledge to another? Has the evolution in each been basically linear or cyclical, and why? Innovative, entertaining, and well-written, Cohen's book deserves the attention of cultural, economic, and especially of educational historians, as well as that of teachers of the first half of the American survey seeking descriptions of fascinating and hitherto obscure episodes with which to spice up their lectures.

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