

should find its place in the burgeoning number of college courses in technology and society. Although of interest to the general reader, the book is designed so that it can be used as a teaching text. It is divided into eight chapters and touches on such subjects as computer crimes, software theft, viruses, hacking, invasion of privacy, and artificial intelligence. Each of the eight main chapters contains a section entitled "Suggestions for Further Discussion." These sections are based on material covered in the chapter and set up scenarios for the classroom or provide the basis for further reflection.

The subtitle describes precisely the authorial strategy: to bring together in one place a list of facts, anecdotes, study results, and surveys that pertain to a general theme, such as computer crimes, and to let these then define the landscape for discussion. There is no attempt here to grapple with ethical issues in a structured, logical fashion. The object is rather to show both the range of social issues within a problem set and inherent difficulties in structuring clear, unambiguous positions. The value of this approach is that it places the computer back into a social structure and makes potent arguments from the sheer mass of assembled evidence. The danger of such a strategy is that it can lack coherence or that the examples chosen may be carefully filtered to reflect the political agendas of the authors.

Within this general framework, the authors also do an excellent job of presenting the problem set and technical language of computers to a nontechnical audience. For example, the chapter "Hacking and Viruses" provides an excellent differentiation among viruses, Trojan horses, logic bombs, and other arcane examples of programming with a malicious intent. The general discussion of software engineering techniques included in the section on unreliable computers should make it possible for the general reader to get a glimpse of some of the problems and difficulties of producing reliable software and hardware (although Tracy Kidder's *Soul of the New*

Machine remains the definitive, if somewhat romanticized, statement on this subject). Similarly, the brief but cogent discussion of the major positions in the current debates on intellectual property, copyright, and patents in the chapter on software theft is noteworthy.

If an agenda is at work here, then it is decidedly democratic, antitechnocratic (not antitechnical), antimilitaristic, and highly skeptical of highfalutin claims, particularly when these are offered as social solutions or make extravagant demands on the public purse. The more egregious claims and some of the epistemological underpinnings of the artificial intelligence (AI) crowd come under particularly sharp attack, as does former President Reagan's Strategic Defense Initiative (SDI), to which the authors devote a separate appendix. While one can certainly disagree with individual points of the authors' political agenda, these are fundamentally social and political issues for which computers provide tools for answers, but computers are not the answers in themselves. This work is largely successful in heightening that awareness and should prove of value to those interested in pursuing the social aspects of computing in greater depth.—*James Coleman, Research Libraries Group, Inc. Mountain View, California.*

Harris, William V. *Ancient Literacy.*

Cambridge, MA: Harvard Univ. Pr., 1989. 383p. alk. paper, \$35 (ISBN 0-674-03380-9). LC 89-7588.

From lead curse-tablets in archaic Greece to graffiti on the walls of imperial Pompeii, from monumental inscriptions to bills of sale, medical treatises, and epic poems, the Greeks and Romans left abundant evidence that writing, once introduced, was quickly adapted to a range of purposes. Assumptions about the level of literacy in this part of the ancient world—the title does not disclose that its subject is restricted to Greco-Roman antiquity—have varied, but have often been optimistic. In this well-documented and thorough study, William V. Harris surveys the evidence for the nature and extent of literacy in the

Greek and Roman world and concludes that overall it rarely exceeded 10 percent of the entire population, though among the elite it was often much higher. Such an assertion, Harris acknowledges, will be "highly unpalatable to some classical scholars," those who have maintained that at their pinnacle Greek and Roman civilization depended heavily on the written word and achieved, if not universal, at least very high levels of literacy.

The author uses the results of recent studies of literacy in early-modern and contemporary societies to define the conditions under which majority literacy can emerge. Among these are urbanization, educational opportunity, an economic system which encourages the use of writing, even the availability of inexpensive writing materials. A chronological review of Greek and Roman society occupies much of the book. In it,

Harris seeks to show that many of these preconditions were never fulfilled sufficiently for anything like mass literacy to flourish. The author's broad familiarity with the primary evidence, including literary texts, papyri, inscriptions, and other archeological sources, is apparent in his discussions of the functions of writing during each period, the availability of schooling, and the probable levels of literacy among different social groups and in different geographical areas.

Harris pays special attention to the reduced access to literacy among women during most periods and to the limited educational opportunities for the rural and urban poor and for slaves. He argues that ancient society rarely achieved much more than what he terms "craftsman's literacy," a state in which much of the elite and a large number of

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skilled craftsmen are literate, while women, the unskilled, and peasants are, for the most part, illiterate. While Harris has certainly taken the relevant evidence into account, many of his arguments by necessity are based on the silence of the sources—the absence of contrary evidence—and his interpretation of some of the remaining evidence will certainly be questioned. He concludes each section of the study with an attempt to estimate the literate portion of the total population and of various subgroups. Although this attempt is admirable, it appears rather futile in light of the paucity and inconclusiveness of the sources.

Among the evidence which Harris considers in seeking to define the levels of ancient literacy is the extent of the book trade and the existence of libraries and collections of written texts. For those interested in the history of libraries and publishing, or the dissemination of texts, his discussion of the uses and functions

of the written word as they changed from archaic Greece to late antiquity provides a useful context. Harris' application of recent studies of contemporary and early-modern societies to the problems of ancient literacy is interesting. He underscores the importance of some basic prerequisites, such as educational opportunity and a widely held conviction of the value of universal literacy, necessary for the high levels of literacy associated with developed countries in the contemporary world.

Accessible, well-written, clearly organized, with a useful index and extensive bibliography, *Ancient Literacy* will likely stand as a basic introduction to its subject matter for some years to come. The fact that some of Harris' conclusions will engender controversy in no way diminishes his achievement in gathering, analyzing, and synthesizing such a vast array of evidence.—Edward Shreeves, *University of Iowa, Iowa City.*