Book Reviews

THE PSYCHOLOGY OF LITERACY
by Sylvia Scribner and Michael Cole.
Cambridge, Mass.: Harvard University Press, 1981. 335 pp. $25.00.

Sylvia Scribner and Michael Cole begin *The Psychology of Literacy* with the observation: "The notion that literacy introduces a great divide among human societies runs deep in contemporary social science" (p. 4). They further note claims going back to post-Homeric Greece concerning the psychological repercussions of literacy: "As literacy shapes culture, the argument goes, so it shapes human minds" (pp. 4–5). In its weak form, this argument refers to the progressive accumulation of knowledge from generation to generation made possible by the relative permanence of written texts.

Scribner and Cole are less interested, however, in the claim that literacy shapes the mind by allowing it to assimilate new information in written form than in the idea that mastery of a written language affects the very "processes of thinking—how we classify, reason, remember" (p. 5). This is the strong form of the argument. Essentially, their book is devoted to an exploration of this latter claim, using methods that join psychological with cultural analysis.

Theories concerning the cognitive impact of the written word can be found in the writings of the ancient Greeks. For example, Socrates argued, in Plato's *Phaedrus*, that writing might weaken memory by making the reader dependent on external memory aids while Plato, in *The Republic*, saw written communication as a way of promoting reason rather than emotion in human thought. However, neither possessed the empirical methods necessary to demonstrate scientifically the validity of his hypothesis. In modern times, Havelock (1963) provided evidence for Plato's views through a comparison of Homeric poems and Platonic dialogues, and Goody and Watt (1963) used historical analysis to posit a causal link between literacy and logic. Even in the latter study, the method of investigation is analysis of written texts, the products of literacy; the link between these products and individual cognitive processes required to produce or consume them must of necessity be assumed rather than tested. The empirical methods of psychology were required to supply this missing link.

The first to attempt to provide this linkage was the Soviet psychologist Alexander Luria, who drew upon the theory of his compatriot Lev Vygotsky. Working in the 1920s and 1930s, Vygotsky attempted to provide a unified account of cultural and psychological change. His general thesis—presented in major English texts in 1962 and 1978—was that sociocultural changes form the basis for the development of higher memory and thinking processes. He had been strongly influenced by Marx's idea that there is no fixed human nature—that human beings continually make and remake themselves and their consciousness through productive activity: the use of tools transforms human nature. For Vygot-

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sky, literacy was an important intellectual tool with the power of transforming the higher psychological processes. In the 1930s Luria tested Vygotsky's ideas by studying peasants in Central Asia who were undergoing a period of rapid change as a result of the Russian Revolution. Although his experiments were done before Havelock and Goody-Watt began their work, they were not published until 1976.

As Scribner and Cole relate, Luria "compared groups of traditional nonliterate farmers with other residents of the same villages who had gone through brief literacy courses or who had participated in short teacher-training programs" (p. 10). In a variety of experimental tasks dealing with perception, conceptualization, classification, and reasoning, he found consistent differences between the groups: the educational programs were associated with an abstract approach to problems and the ability to use techniques of formal logic. However, it was impossible to isolate the precise role of literacy in these group differences, for literacy was confounded with age and such cultural changes as collective management and agricultural planning.

Scribner and Cole see my work and that of David Olson as the next logical steps leading to their own. In my research in Senegal, carried out well after Luria's but published some ten years before, I had the opportunity to compare children from an oral culture with and without formal schooling (Greenfield, 1966; Greenfield, Reich & Olver, 1966; Greenfield & Bruner, 1969; Greenfield, 1972). Unlike Luria's groups, mine contained children who were the same in age and all other aspects of their background. However, despite the control of these background factors, one could not know to what extent the dramatic effects that resulted from schooling were caused by learning to read and write or by other aspects of formal education. David Olson's (1977) research was subject to yet another version of this problem. He drew his conclusions by comparing preschool children with school children of various ages and with educated adults. As a result, literacy effects could not be separated either from the effects of age or amount of schooling.

In Liberia, Scribner and Cole were able to isolate the effects of literacy because of the Vai, a people that invented and maintains its own writing system outside the context of formal education. The Vai made it possible, for the first time, to study the psychological effects of literacy independent of the effects of formal education. Further, the Vai provided a natural experiment, for within their single culture, three different literacies are to be found, each with its own particular set of learning conditions: Vai writing, mastered through informal means; Arabic, learned in the Koranic school; and English writing, acquired in European-style schools. Thus, through the Vai people Scribner and Cole had the opportunity to assess the psychological consequences of different conditions of literacy learning.

Not even this set of conditions, however, would have sufficed to answer the fundamental question concerning the impact of literacy per se if the Vai had not also provided their own control group—a majority of the population who have not acquired any form of literacy. Unlike the situation in our society, illiteracy among the Vai carries no stigma, does not hamper everyday life or basic socialization, and, most important for the research, is not inextricably linked with any other social or psychological condition that would affect cognitive skills.

Scribner and Cole's genius was to find the Vai and to realize their potential for answering previously unanswerable questions about the psychological impact of literacy. But in order to realize this potential, Scribner and Cole had to muster an impressive array of psychological, linguistic, sociological, and anthropological tools; very few psychologists would have been equal to the task.

The authors began the experimental portion of their project by administering tasks designed to test the "great divide" theory of literacy. This theory presupposes, on the psychological side, the existence of highly generalized cognitive skills such as abstraction, classi-

fication, memory, and logic. Support for the theory would have been indicated by a pattern of results in which all literate groups did better than illiterate groups on tasks designed to assess one or more of these generalized skills. However, this was far from the pattern of results that actually emerged. In fact, there was not one measure designed to manifest a "great divide" between literates and illiterates on which all three types of literacy contributed to improved performance. If literacy in general did not create the "great divide," did any particular literacy have this effect? The answer was again negative: no single literacy made a positive across-the-board contribution to performance on this same set of tasks. The one effect that did emerge at this stage of the research was the positive impact of schooling on the general skill of verbal explanation. In the various experimental tasks, the topics to be explained were very diverse, ranging from reasoning about syllogisms to playing a board game. The authors conclude that it is not English literacy per se that fosters the generalized skill of verbal explanation, but rather other aspects of schooling. In particular, they ascribe importance to "teacher-pupil dialogue in the classroom. Teachers ask questions very much like those we asked: 'What made you give that answer? How do you know? Go to the board and explain what you did' " (p. 255).

Thus, the most generalized skill that emerged in the Vai research, the ability to construct verbal explanations, seemed to be a product not of literacy itself but of the verbal interaction that goes on in schools between teacher and pupil. Clearly such interaction is not limited to a particular medium of instruction. Indeed, it can form the social context for any medium. This fact has great educational significance, particularly as it relates to the role of electronic and other nonprint media in school instruction. The implication is that what is done in school—for example, the teacher's demand for explanations—is more crucial to learning than what medium is used to impart information. This hints that, in the educational process, print may not be a privileged medium of instruction. If there is a "great divide," it is created by schooling, not literacy.

In the face of their failure to find general literacy effects, the authors shifted strategy in the middle of their fieldwork. Instead of deriving hypotheses "from general abstract characterizations of literacy" (p. 158), they looked to "the functional uses of literacy among the Vai" (p. 159) as a source of hypotheses. This was an attempt to derive the cognitive consequences of literacy from knowledge of how literate Vai used reading and writing in everyday life. However, it often seems more accurate to characterize their new strategy as a switch from searching for instances of broad generalization of literacy skills to searching for instances of narrow generalization from the reading process itself. For example, the fact that Vai literacy, unlike Arabic or English, is based on a syllabary—symbols stand for syllables rather than sounds—was reflected in the finding that Vai literacy, but not Arabic or English, promotes the ability to integrate auditorily a series of separate syllables into a meaningful sentence. This effect is an instance of narrow generalization, because syllable integration is so closely related to the very process of reading Vai.

Another example of narrow generalization involved a cognitive process intrinsic to all three writing systems. This process was the auditory integration of separate words into a meaningful sentence. It must be carried out whether one reads Vai, English, or Arabic. Skill in auditory integration was measured by the comprehension of words spoken at an even pace and without intonation. On this task comprehension was positively affected by each of the three literacies.

In all these tasks, performance reflected a skill involved in the very acquisition or process of reading itself. Where that skill was part of only one literacy, task performance was promoted by that literacy alone. Where it was part of literacy in general, task performance was fostered by all three literacies.

There is, however, one skill area—communication—where Scribner and Cole go beyond the effects of reading-writing processes

to explore the consequences of how a particular literacy functions in a particular society. In one of the communication tasks, the subject had to dictate a letter giving directions on how to play a new board game. The functional source for this task lay in the observation that the Vai syllabary is frequently used for letter writing. Indeed, Vai reading scores turned out to be a strong predictor of total information provided by subjects in their dictated letters. But the rub was that schooling was an even better predictor of these skills than Vai literacy. However, this finding may fit with the functional approach better than the authors realized. Although they had started with the hope that each of the three literacies would have a distinct set of functions, their background survey in fact indicated very similar functions for English and Vai. Specifically, English turned out to be used as much for letter writing by people literate in English as was Vai by people literate in Vai. Arabic, in contrast, was generally not used for letter writing. If letter-writing is functionally related to the communication task, as the authors hypothesize, then one would expect a positive contribution from both Vai literacy and English schooling, but not from Arabic literacy. This is precisely the pattern that emerged.

The Psychology of Literacy conveys more than important theoretical issues and substantive findings. Equally important are the methodological principles and techniques it presents. One notable feature is the use of ethnographically sensitive surveys to provide background information that is then used, through regression analysis, to assess the effects of many additional factors besides literacy status. Although regression analysis is a statistical technique from the discipline of psychology, the surveys, constituting Scribner and Cole's main tool of cultural analysis, integrate methods from sociology and anthropology. The experiments themselves involved techniques from both psychology—for example, the communication tasks—and linguistics—for example, phonological analysis. Such a combination of methods will be extremely useful for other researchers planning to investigate the impact of broad and complex sociocultural factors on individual cognitive or linguistic performance.

The Psychology of Literacy makes an important contribution on many levels. Theoretically, it develops the notion of socially organized practices as the mechanism by which a cultural skill affects cognitive processes. Here, Scribner and Cole provide a valuable addition to the Vygotskian theoretical framework for describing development. Empirically, the book contains a fascinating and rich set of findings. Methodologically, the research breaks new ground in combining the techniques of experimental psychology, linguistics, sociology, and anthropology. The result is a series of studies that are exact and yet sensitively adapted to their cultural context, both in procedure and interpretation. This book is also valuable methodologically because it shares with the reader the zig-zag road to knowledge and discovery that is so often covered up by a straight-line account in final publication.

Philosophically, *The Psychology of Literacy* should rid us once and for all of the ethnocentric and arrogant view that a single technology suffices to create in its users a distinct, let alone superior, set of cognitive processes. Educationally, we find that the development of cognitive skills demands more than the imparting of a particular technology, even if that technology is literacy; it depends crucially on how a particular technology is used and the web of practices and functions in which the technology is enmeshed.

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EDUCATION AND POWER
by Michael Apple.
Boston and London: Routledge & Kegan Paul, 1982. 218 pp. $17.50.

As a set of hypotheses and ideas about capitalism and history, Marxism has been very useful for generating insight in many of the social sciences. During the 1970s applications of Marxist theory to the structure and function of schooling gave a distinctive character to the "new sociology of education," predominantly in France, Great Britain, and the United States.

This brand of sociology of education has now established a firm position in the marketplace—if I may be forgiven the metaphor—of academic theory and research, producing an ever-increasing number of publications and conference papers. Still, the new sociology has not supplanted the older and less radical democratic liberalism that characterizes the cynosure of sociology of education, curriculum theory, and philosophy of education. At least this is so in the United States, where it will continue to be the case as long as Mrs. Grundy thinks Marxism means communism and communism means what the Russians learned from Stalin.

What Mrs. Grundy would think of Michael Apple's *Education and Power* I don't know, but I am sure that many readers familiar with neo-Marxist sociology of education will find the book valuable as a clear and substantial statement of transition in the tradition of Marxist-oriented scholarship. In this book, Apple amplifies themes from several of his recent papers, offers a critical reassessment of his widely read *Ideology and Curriculum*,[1] and proposes a research program that he calls "Marxist ethnography." His proposal focuses on empirical investigation of individual responses to the pressures of economic, political, and cultural organization both inside and outside the schools. Apple's proposal has three potential effects that to my mind are very important: first, a convergence of the two broad paths in the new sociology—the empirically thin theoretical emphasis on ideological reproduction and the theoretically thin classroom ethnographies; second, a foundation for a psychologically credible Marxist interpretation of "lived culture"—credible because it emphasizes individuals as well as class, race, and gender; and third, the first steps toward a reconceived left-liberal coalition for progressive educational reform. These are potential effects that I see from my liberal democratic point of view, but I am not sure Apple would agree.

Forceful and fundamentally optimistic, Apple argues for a more sophisticated under-

[1] *Ideology and Curriculum* (London and Boston: Routledge & Kegan Paul, 1979).