Starting on the Right Foot*
A review of Marilyn Jager Adams' *Beginning to Read:*
*Thinking and Learning about Print***

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Marilyn Jager Adams has performed a valuable service to all who wish to improve how reading is taught. Her book presents a comprehensive and scientifically responsible treatment of problems of immense social importance—problems that partly because of their very complexity are too often treated cavalierly. This book is required reading for professionals engaged in research on design and assessment of programs of reading instruction and research on diagnosis and treatment of reading disability. It is also a valuable resource for a wider readership in psychology, cognitive science and education. Indeed, anyone who needs a clear-headed synthesis of relevant research findings bearing on the problems of learning and teaching to read can profit greatly from this book. With unusual thoroughness, Adams has reviewed the mass of research literature that bears on the debate between advocates and adversaries of the code emphasis in reading instruction. The tone is always constructive. She avoids the rancor that so often accompanies discussion of these issues. Though even-handed in her treatment, Adams does not wrap herself in the cloak of the eclectic; after sifting the evidence, she draws strong conclusions and states them boldly.

This book originated with a mandate from the United States Congress for a new appraisal of the place of phonics in teaching children to read. Inundated with complaints about the performance of the schools in imparting literacy, and confused by the welter of conflicting voices from the experts, Congress enacted legislation that led ultimately to the U.S. Department of Education's commission of this report. Responsibility for producing the report was placed in the hands of the Center for the Study of Reading, University of Illinois at Urbana-Champaign. Adams, a cognitive and developmental psychologist at the Center's branch at Bolt, Beranek and Newman in Cambridge, Massachusetts, was chosen for the task.

Given Adams' extensive background in investigation of basic reading processes, she was a logical choice and the choice proves to have been an excellent one. Charged with the responsibility for presenting a thoroughgoing clarification of the issues that divide the two sides in what Jeanne Chall has called "the great debate," Adams was given a free hand to shape the report. A panel consisting of well-known reading experts from around the nation was assembled to offer advice and criticism of interim drafts, but the book was written by Adams, not the committee. And to her great credit, the book is highly readable. It has none of the dryness one often finds in a technical report. The book displays a graceful and informal writing style and betokens an uncommon ability to use the language well.

As Adams points out, this book has a predecessor: the task of reviewing the relevant research literature was undertaken in the 1960s by Jeanne Chall whose report was published nearly 25 years ago (Chall, 1967). Appropriately, Adams often refers to the earlier work. It, too, was a praiseworthy review, but time does not stand still. The unprecedented technological explosion in the work place presents ever greater demands on reading skills. Moreover, the crisis in the schools has intensified, consensus on a remedy for the unacceptably high rate of illiteracy in our society seems as elusive as ever.

In the meantime, research activity has mushroomed both in quantity and in variety. An important new development since Chall's book appeared is the rediscovery of reading as a central

problem for investigation by mainline psychology. No less significant, reading and orthography have become major concerns within the fast-growing fields of applied linguistics and the psychology of language. One consequence of the remarkable surge in research on reading is obvious: Anyone who would undertake to review the literature must be prepared to digest and critically evaluate an enormous range of material. Accordingly, heavy demands are placed on a reviewer's knowledge and critical judgment. On the whole, Adams proves more than equal to the task.

The report has five parts. Part I deals with the nature of writing systems, the origin of the alphabet and the place of word recognition in reading. Part 2 presents the rationale for approaches to instruction that emphasize phonics, and it reviews research that attempts to compare the efficacy of this approach with other approaches. Part 3 presents conceptions of reading from the standpoint of laboratory analysis of what skilled readers do. It presents a model of the reading process that encompasses each of the components of reading skill and their integration in the act of reading. Part 4 articulates the goals of instruction in reading from the standpoint of the analysis of the skills of the mature reader presented in Part 3. Part 5 discusses research on the processes involved in learning to read. Part 6 summarizes the conclusions reached from the review of the research literature and discusses the implications for teaching and learning to read.

Adams begins with a discussion of the nature of writing. It is noted that true orthographies, unlike picture writing, represent words, and not meanings directly. This is an appropriate starting point because it underscores the key significance of the word in reading. The importance apprehending each and every word in the text nnot be taken for granted, because it is unfortunately true that some popular programs of beginning reading instruction encourage the novice to skip words or to guess in the search for meaning. Adams leaves us in no doubt where she stands: This is bad advice for a beginning reader or anyone else. "Unless the processes involved in individual word recognition operate properly, nothing else in the system can either (p. 3)." The ability to identify printed words is necessary but not sufficient for reading; it must be backed up by well-oiled mechanisms of language comprehension. Reading depends on a system of skills whose components must mesh properly.

Alphabetic forms of writing are codes on the phonological structure of the language, or more

properly, the morphophonological structure. By using letters to represent the several dozen consonant and vowel sounds of the language, alphabets achieve their great advantages over other forms of writing: First, economy—a small set of symbols is sufficient to represent any and all words in the language; second, transparency—a user who knows how the system works can usually recognize words in print that were previously known only through spoken language. Adams' account notes that these advantages come at a cost that must be borne by the beginner. Every alphabetic system presents its users with a problem of cognitive penetrability. Because vowels and consonants are co-produced and overlapped in time, these abstract phonemic units are not realized in speech as physically separable chunks of sound. That is probably one reason why they are often difficult to apprehend consciously (Liberman, Shankweiler, Fischer, & Carter, 1974). For the purposes of speaking and listening, language users need not attain awareness of phonemes. But to grasp the principle (by which alphabetic writing represents the phonemes and morphophonemes of the language), a would-be reader must first identify the speech units that the letters represent. Consequently, the grasp of the alphabetic principle is a rather sophisticated intellectual achievement.

Because the orthography of English is complex and often irregular, some commentators have overlooked that it is, nonetheless, essentially alphabetic. Adams does not make that mistake. Yet to dwell on the irregularities, as she does at the end of Chapter 2, is to invite a reader who is less than astute to draw the wrong conclusion and to miss the larger point: that there is a system to be learned and that, even in English, knowledge of the orthography is productive.

The chapters that follow present a much needed and thoughtful analysis of the pertinent information on phonics and reading. As for phonics, the term itself has long been a source of confusion. For the most part, Adams uses the term simply to denote instruction aimed at instilling the alphabetic principle. Well and good. But unfortunately the term has other connotations that are hard to shake off: In the minds of some people, phonics denotes an old-fashioned and discredited method of teaching reading by having children attempt to recognize a word by speaking the "sound" of each letter. The method implies that what a reader does is to approach words piecemeal by translating the letters that make up a word into their phonetic equivalents, letter by

letter, as though reading were simply spelling aloud. Thus the term phonics has come to represent an inapt caricature of the reading process. Accordingly, Liberman and Liberman (1990) recommend substituting for *phonics* Chall's term, *code-based approach*.

As Isabelle Liberman (who is cited by Adams on this point) often explained, letter-by-letter encoding is assuredly not what a successful reader does. The word *bat* contains one syllable, not three; the word is not *buh-a-tuh* but *bat*. Yet some beginning readers will say something like *"buh-a-tuh"* when asked to read the word and will never manage to discover that the word is *bat* (Liberman, 1973). In Adams words, "It is as though these children can find no connection between the sequence of sounds they have produced and the highly familiar word which they have 'read.' It is not enough to have memorized the sounds that go with each letter. To make use of those sounds, the child must realize that they are the subsounds of language" (p. 208). Beginners who are stuck in this way can be helped to develop phonological awareness, that is, to become aware of the phonological structure of words, by identifying their phoneme and syllable constituents. Then they are prepared to grasp the alphabetic principle and can begin to build word recognition skills on a solid foundation. As Adams notes, experienced readers parse the letter strings, ordinarily apprehending sequences of letters that correspond to a demi-syllable at minimum. According to laboratory research discussed in Part 3, such sequences constitute the major spelling patterns that experienced readers implicitly recognize as wholes.

Spelling patterns must be not only apprehended but also overlearned to the point that word recognition can become unhesitating and automatic. Speed, as well as accuracy, is important because the fast-fading short-term memory forms the stage for the integration of words into syntactic units. If word decoding routines work poorly, all other aspects of reading will be hampered and comprehension will be correspondingly poor, a point often stressed by Perfetti and his associates (Perfetti, 1985). Thus, although word recognition *per se* is not the goal of reading, getting the meaning of the text depends on it. And word recognition, in turn, depends on accurate identification of the lower-level building blocks: the letters and the spelling patterns formed by letter combinations.

In Part 3, Adams sketches a model of reading that derives largely from the work of Seidenberg and McClelland. The chief characteristic of this model is that information the reader derives from print interacts freely and at every level with stored knowledge. Thus the model contrasts with a hierarchical model in which information flow is largely unidirectional and bottom-up. Other researchers have maintained that an interactive model does not readily account for the important differences between reading and speech perception. Above all, it offers no explanation of the fundamental fact that speech is acquired by every neurologically normal child whereas reading skill is far from universally acquired. For some researchers, a unidirectional model seems dictated by the modular nature of the language apparatus (see Crain, 1989; Fodor, 1983; Shankweiler & Crain, 1986). Of course the question is not whether linguistic input (whether speech or print) must make contact with stored knowledge, but how and when. The modular view supposes that processing within the language module is accomplished before the linguistic input is integrated with other aspects of cognition. On this account, it is emphasized that word recognition by ear is privileged in the sense that it is served by mechanisms that evolved in our species and that form part of a coherent biological specialization for language. In contrast to speech, the alphabet is an artifact. Learning to use it is a cognitive task in a way that primary language acquisition is not. It has been argued that an adequate theory of reading would have to explain the difficulty of reading and the comparative ease of acquiring a spoken language (Liberman, 1989).

After examining the myriad studies comparing programs for the teaching of beginning reading, Adams concludes that the great majority of program comparison studies indicate that approaches that incorporate code-based instruction "...result in comprehension skills that are at least comparable to, and word recognition and spelling skills that are significantly better than, those that do not" (p. 49). This, she notes, is exactly the same conclusion that Jeanne Chall drew 25 years earlier. Code-based approaches that help the beginner to appreciate that words have an internal phonological structure and to recognize that word spellings represent that structure have the edge over programs that pass over these aspects.

While stressing that these program comparisons are essential, and have been highly informative, Adams is sensitive to the limitations of these research studies and in Chapter 3 she knowledgeably discusses the reasons why they so

often yield noisy data. The classroom teacher, who is charged with implementing the program, is often the weak link. Adams' conviction that successful readers must grasp the alphabetic principle and that code-based teaching is the best way to help beginners to grasp it stems only in part from such program comparisons. At least as important are other research findings which are discussed in detail in this book. The pertinent evidence comes from a variety of sources: It includes the findings of research on prereaders, prediction studies seeking to identify those preschoolers who are at risk for reading failure, follow-up studies on the long-term educational consequences of failing to crack the code in the early primary grades, studies identifying the shared characteristics of unsuccessful readers, and finally, the picture of reading derived from research on the skilled reader. Adams concludes that all these lines of evidence converge in underscoring the vital importance of helping children grasp the alphabetic principle from the beginning. This entails giving prereaders adequate preparation for learning to read by instilling phonological awareness (introducing, through well-chosen word games, the fact that words have an internal phonological structure), and by demonstrating to beginning readers, through examples, how the spelling of a word represents its phonology.

Of course, some children will infer the principle with little guidance from anyone and will make rapid progress in word recognition skills. But for a significant minority, which includes some children from highly favorable home backgrounds as well as many from unfavorable home environments, extensive instruction is needed to compensate what appears to be a general weakness in the phonological component of language. Unfortunately, these are the very children who are often deemed unable to profit from such instruction and are therefore denied access to it.

If the case for code-based instruction is unassailable, why, then, is it so often resisted? Adams ponders this question near the end of the book. She is inclined to think that the reason is that it is often poorly implemented in practice.

Implementation, she notes, depends on clarity with respect to goals; the teacher must understand why each activity is included. "It is with respect to principles and goals that I would most strongly fault the major reading curricula" (p. 423). Certainly, one cannot disagree that it is vitally important for teachers to understand what they are attempting to accomplish through their teaching, and that a recipe book or a manual, no matter how logically ordered and detailed, will not impart that knowledge. The problem will not be easy to solve. There is much ignorance concerning the needs of beginning readers both on the part of teachers and teachers of teachers. Adams' book takes many constructive steps toward remediation of ignorance about reading. Let it be read and reflected upon in every place where teachers of reading are taught, and may it shine like a beacon!

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FOOTNOTES