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Review by: Charles Read

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Development of Orthographic Knowledge and the Foundations of Literacy: A Memorial Festschrift for Edmund H. Henderson

Edited by Shane Templeton and Donald R. Bear. Hillsdale, NJ: Erlbaum, 1992. xi + 369 pp. Cloth, \$59.95.

Teaching the Lexicon to Spell and Read

Edmund Henderson was a reading teacher, clinician, researcher, and theorist who built an extraordinarily close-knit program at the University of Virginia, centered around a reading clinic and a statewide outreach program for teachers that should serve as a model for other states. Posthumously, Henderson was awarded the Outstanding Teacher Educator in Reading citation by the International Reading Association, but his research has received less attention and acclaim than his work as a teacher of teachers. This *Festschrift* challenges that relative neglect.

The book is one answer to the question, “What sort of reading research would be conducted (without a major grant) by a group of people who do not claim to be cognitive psychologists, but who are guided by a rich and articulate theory of the development of reading, and whose roots are firmly in the elementary-school classroom and reading clinic?” Henderson originally planned the volume as a report of a decade of research growing out of his program. The body of the book comprises 10 chapters by some of Henderson’s former students, framed by a foreword by James Deese, an introduction drafted by Henderson himself, a commentary by Linnea Ehri, a summary by the editors, and an afterword by Frank Vellutino. With all that framing and the cohesion of the Virginia group, the book is considerably more coherent than most *Festschriften*.

Themes

The keynote is sounded in Henderson’s chapter: “Verbal learning research of the past 20 years has made it altogether clear that reading is a knowledge game not a guessing game” (p. 18), a rebuke to one of the slogans of the “whole-language” view which guides most reading education and curricula today. Whole-language theorists would respond in chorus that it is indeed knowledge which guides the reader’s search for meaning—knowledge of the world, of the social and textual context, of the task, of the illustrations, and even, they would concede, of the print. The knowledge that Henderson

has in mind, however, is much more specific. The theme of this book is that development in reading and spelling is stimulated and controlled by growing knowledge of the structure of the *words* of the language, both their orthographic and their morphological structure. Although written by educators, the book is built on linguistic analysis.

This theme carries some corollaries. If both spelling and reading are guided by one's developing lexicon, then spelling and reading are more nearly parallel than their superficial differences suggest. Contrary to several writers, myself included (Read, 1981), this book asserts that the obvious differences between spelling and reading are merely the effects of boundary conditions on the tasks (e.g., that in normal reading, one knows that the target is a real word, and that in spelling, one must produce all of the letters in sequence in order to be correct). These constraints make reading appear generally easier and more advanced than spelling, obscuring the basic unity of the process. In this view, spelling experience is central, both as material for reading development and as a window on the lexical development on which both are built.

A second corollary, by no means a necessary consequence, is that spelling and reading develop in stages. In fact, the Virginia theory is that all readers, good and poor, pass through the same sequence of levels. As Vellutino points out (p. 354), this strong claim is difficult to defend for a process with as much variability as reading and spelling. However, advancing strong claims is arguably good science. Noam Chomsky advises his students to put forth the strongest testable claim that has any chance of being right and see how it survives the criticism that is sure to follow. On the whole, this advice has been good for linguistics. The Virginia stage theory is certainly strong, it is more testable than many claims in the field, it surely presents an inviting target, and it may well be right, in some form.

Research

Most of the research reported here focuses on one or both of these two propositions. On "stage-like" development, Robert Schlagal analyzes patterns of error in spellings from dictation by children in Grades 1 to 6. The word lists that he developed to test for specific kinds of error have become a standard in the Virginia studies. William Barnes reviews children's growing knowledge of "silent" letters, noting developmental distinctions among different kinds of spellings which do not represent phonemes. Jerry Zutell assesses correlational relations between the Virginia stages of spelling development and conceptual development, on the one hand, and oral reading fluency and accuracy, on the other. Carol and James Beers examine the development of children's spellings of inflectional suffixes, namely regular plurals, past tenses, and progressives (letter doubling before *-ing*). Because two of these inflections are central instances of the claim that English spelling does not normally reflect predictable phonological variation, the emergence of their standard spelling is an important test of the proposition that spelling can reveal growing morphological knowledge. Finally, Shane Templeton reviews children's pronunciation and spelling of derivationally related forms

(e.g., *defame/defamation*) in the context of vocabulary development and reading. He proposes a unified curriculum in spelling and vocabulary, complete with a scope-and-sequence chart for Grades 5 to 8.

The chapters by Thomas Gill and Marcia Invernizzi explore the relationship between word reading and spelling, finding greater similarity in development than would be predicted on the assumption that the two kinds of performance are fundamentally distinct. They propose that a unitary underlying word knowledge can account for both. They emphasize the explanatory value of that knowledge as opposed to word attack skills, visual memory, and processing accounts in general. Invernizzi focuses on "the vowel and what follows it" in monosyllables; this unit is not identical to the rime, which has received attention recently. She manages to distinguish between the *re* and the *es* of *press*, for example, as units in the development of word recognition and recall.

Three chapters, considered in slightly greater detail, help to illustrate the nature and range of the research. Darrell Morris reports three studies, correlational and longitudinal, of the emergence of "concept of word," the recognition that the units framed in print by spaces correspond to spoken words. A child with a concept of word can point to the words in a printed line of familiar verse while saying each word in synchrony. Given "Sam, Sam, the baker man," a child with this concept avoids the trap of saying "ba-ker" while pointing to "baker man." In the Virginia stages, this concept is a developmental crux, essential to progress in reading but usually hidden from observers. Morris infers that the emergence of this concept precedes the nascent awareness of phonemes and their correspondence to spellings, another critical issue. He argues eloquently for naturalistic and observational studies in education (p. 72).

Donald Bear studies the relationship between prosody in reading aloud (defined as pauses, rate, and intonation) and the postulated stages of word knowledge, as reflected in spelling. Again, there is a pedagogical basis: Teachers and parents typically use a child's fluency in oral reading as an indicator of reading ability and comprehension. Like Gill and Invernizzi, Bear finds a relationship between reading and spelling development, at least a correlational one, but the precise sequencing is less clear, especially at the middle stages. (In my copy, this chapter contains a disruptive production fault: Pages 155 to 162 should be read in the sequence 155, 160, 161, 156,)

Mary Abouzeid presents case studies of 10 children, ages 7 to 10, who suffered from various kinds and degrees of reading disability. She develops a set of indices, based on word recognition and recall, that help to characterize the type and severity of the disability. She concludes that on the whole, these subjects follow the same sequence of stages of word knowledge as normally developing children, but more slowly. There are qualitative differences as well, however, particularly in the one subject whose reading difficulty began with a traumatic head injury. In addition to its importance for the question of stages, this chapter is valuable to the researcher who seeks greater familiarity with the variety of symptoms seen in a reading clinic.

Evaluations

Linnea Ehri's chapter, which is essentially a built-in review, focuses on the proposed stages of spelling development. Ehri takes up problems in defining stages, relationships between spelling and reading words, relationships between spelling stages and tasks of word analysis and memory, and the differences between Henderson's stages and her own proposals (Ehri, 1986, 1989). She does not shrink from concluding that her final stage of development appears to be too broad. Succinctly and constructively, Ehri articulates significant questions about the methodology and analysis in some of the studies, posing several interesting questions for further research.

The cohesion within the book is not insularity. Unlike the whole-language theorists whom they quickly dismiss, these writers are keenly interested in what has been going on in the rest of the reading research business. They build on Stuart and Coltheart (1988) on stages of development, as well as on the work of Ehri (e.g., 1989), Vellutino on dyslexia (1979) and word recognition (1982), and my studies of children's invented spelling (e.g., Read, 1986). There is also reference to the processing studies by Perfetti (e.g., 1985), Gough (e.g., 1984), and Rayner and Pollatsek (1989), for example, as well as recognition of the significance of Treiman's studies of the role of syllable structure (e.g., 1985).

Widely informed though it is, the research underlying these reports has a style of its own, one which will not appeal to every cognitive psychologist. Given the emphasis on stages, there are as many Guttman scales as analyses of variance. The reports typically include complete lists of words used as stimuli and of children's spellings and how they were categorized, for example; in that sense, the research is replicable. But in some cases, precisely what a task entailed or how it was conducted is less clear.

More centrally, the book raises the question of just how "cognitive" reading is. Templeton and Bear describe as a "bombshell" Henderson's statement that reading and writing "are incredibly complex but only *subtly* cognitive behaviors" (emphasis added by Templeton & Bear, p. 335). This statement seems to contradict Henderson's assertion, noted above, that "reading is a knowledge game not a guessing game" (p. 18). In part, it is intended to deny the centrality of *metacognitive* accounts, which emphasize the superstructure of texts. On the contrary, Henderson says, work like "Gough's early and vigorously bottom-up design (1972) . . . together with the new eye-movement data . . . led me to abandon the belief that reading is thinking and embrace the belief that reading is reading, that is, identifying written words so that they may map language" (p. 19). He believed that this mapping is relatively shallow, autonomous, and at its best, automatic. He suggests that his chapter might have been titled, "Teaching the Lexicon to Read and Spell." Given the richness of the orthographic and linguistic knowledge that supports word recognition, however, the process may be rapid, automatic, and unconscious, but it cannot be simple, as Henderson acknowledges. His descriptions of this knowledge do not pretend to explicate the process:

My guess is that the lexicon is composed within a felt-like system of filters with

semantic networks like a Chinese dictionary and phonological networks reflecting the rules and analogies of the orthographic system. But, of course, what I write is pure metaphor; the device is doubtless more subtle than that. (p. 17)

There remains a need to articulate more precisely what lexical knowledge consists of and to test its specific roles in the recognition of written words. This is not merely a process of elaborating what Henderson meant, but one of refining the theory, making it more specific, and testing the process which it holds to be at the heart of reading.

There is also a need to explicate more fully the model of development on which this group concurs, not only by defining more precisely the putative stages, an issue to which Ehri does justice, but also by elaborating some tantalizing suggestions about what drives development. The rather Piagetian assumption is that at each stage, children encounter contradictions between their current word knowledge, reflected in their own spelling, and the structure implicit in standard spelling, which they experience through reading. The rich observational basis of this work favors anecdotal rather than schematic descriptions of development. There is a bit of a paradox here: A healthy recognition of the richness and variability in children's experiences with reading and spelling, all too rare in the literature, is yoked to the effort to define distinct, though by no means discrete, stages.

The real world

Virtually every chapter of this book begins, at least implicitly, with substantial observations from the classroom or clinic, and ends with inferences for teaching and intervention. These suggestions are more specific and plausible than the lip service customarily inserted at the ends of reports of research on reading and writing processes. This grounding in the real world recommends the book to those who train teachers and plan curricula, but it is also important to psychologists, at least those who would like their work to stay in contact with what really happens in schools, reading clinics, and homes every day.

Ehri points out (p. 330) that research is still needed on the effectiveness of instruction whose organization and content are based on the picture of development painted in this book. Even so, the specificity and vividness of that picture make it uniquely valuable to anyone seeking ways to conceive of the messy business of learning to read and spell, especially to one who recognizes the messiness but refuses to surrender to the fashionable but ultimately irresponsible view that the development of literacy is the ineffable interaction of all knowledge with all experience.

As James Deese in his foreword says of this work, "The methods are sound—they ooze ecological validity; they are ingenious, and they deal with important problems" (p. xi). It will be a great pity (and irony) if those very qualities lead psychologists to overlook this book as not really participating in the experimental dialogue at the heart of their professional lives. It is true that the research does not come out of the canonical mold; that is part of its genuine value.

Charles Read
Department of Linguistics
University of Wisconsin
Madison, WI 53706

Internet: cread@macc.wisc.edu

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The Handbook of Emotion and Memory: Research and Theory

Edited by Sven-Ake Christianson. Hillsdale, NJ: Erlbaum, 1992. 507 pp. Cloth, \$45.00.

A Handbook That Is Really a Handbook

Few books entitled *The Handbook of . . .* deliver all that they promise. *The Handbook of Emotion and Memory: Research and Theory*, edited by Sven-Ake Christianson, is a pleasant exception. This book covers the general theoretical and methodological issues from the cognitive literature that we would expect in such a volume, such as in the most obvious comparison text by Kuiken (1991). But unlike Kuiken's book, *The Handbook of Emotion and Memory* also includes five chapters on biological aspects of emotion and memory, and six chapters drawing from clinical sources that pertain to