

# Linguistics and Reading

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## PART II

Part I of this article, which appeared in Vol. 1, No. 2 of the *Journal*, outlined some basic concepts of structural linguistics and considered the applications that Leonard Bloomfield, Charles C. Fries, and Carl Lefevre have made of these to the teaching of beginning reading. Part II explores some research related to linguistic approaches to reading teaching and attempts to assess the present place of linguistics in the reading programme.

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### **What Experimental Evidence Exists as to the Values of Linguistic Approaches to Beginning Reading?**

Reading materials have reflected some intuitive use of phonemic principles since the day of McGuffey, while "sentence" and "experience methods" have emphasized some of the approaches underlined by Lefevre. Present directions, however, embody the first significant attempts to apply linguistic principles directly to materials and methods of teaching reading in the public schools, and as yet there is no real body of experimental evidence as to their effectiveness. Below, are summaries of some studies pertinent to the linguists' views of reading.

The linguists quoted earlier all raise implicitly the question of reading readiness when they state that the child is ready to read when he has audio-lingual mastery of his native tongue. This mastery they impute to the average age of four or five, with three and seven as outside limits. In a 1962 article, Holmes<sup>1</sup> raises two questions: "When can the child learn to read, and when should he learn to read?" The second question lies within the fields of values, psychology, and sociology; on the first question Holmes pulls together much research in the field. As his frequency graph reproduced below indicates, the age at which children can be taught *productively* to read appears to be a function of the variables of mental age, teacher-pupil ratio, and methods and materials used.

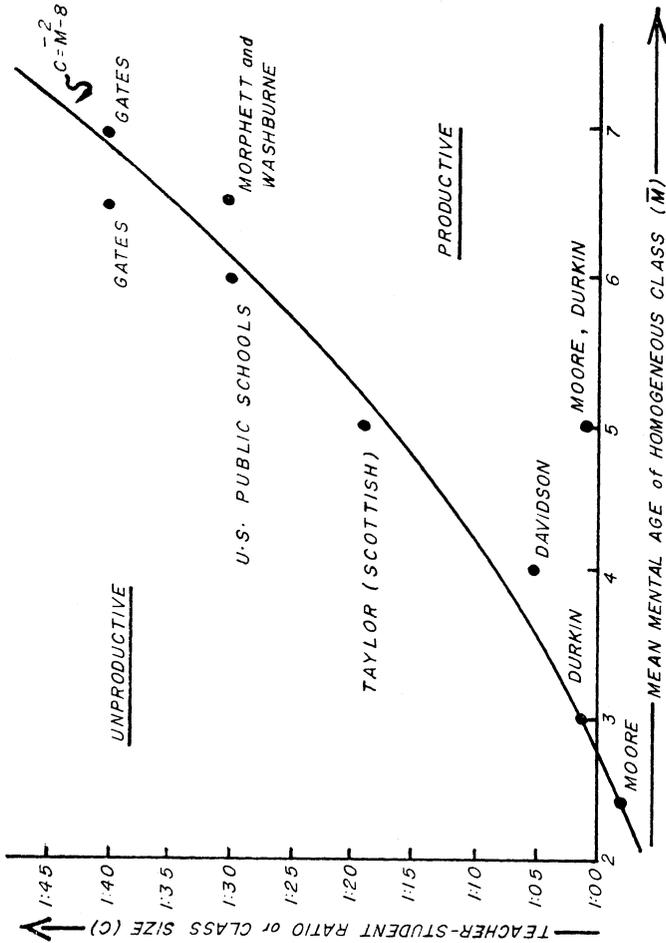


Fig. 1. The curve conservatively divides unproductive from productive teacher-student ratios for beginning the teaching of reading to homogeneous classes of varying mean mental ages. For Moore's two to three year olds, it appears as if a teacher plus an electric typewriter, projector, and tape recorder for each pupil is equivalent to a two-to-one teacher-student ratio!

(Graph reprinted with permission of J. A. Holmes and the International Reading Association.)

Gate's early criterion of a mental age of 6-6, established in terms of the 40-to-1 pupil ratio of the American public school classroom of the day, contrasts with Durkin's results with three-year-olds in a two-to-one pupil teacher situation, and Moore's work with electronic equipment with two-and-a-half year-olds. Research has yet to show the suitability of present linguistic materials and methods for the teaching of reading at specific age levels.

### **Linguistic Soundness of Current Basal Reader Materials**

Lefcourt<sup>2</sup>, analysing five basal reading series published between 1959 and 1962, suggests that vocabulary control and meaning content are the main criteria of their reading matter. She makes a plea for more linguistic insight into sentence patterns and structure in future texts. This is echoed in Strickland's<sup>3</sup> studies of children's spoken language in relationship to sentence structure of basal readers.

Clymer<sup>4</sup> uses four "widely-used" but unnamed basal series to point out linguistic inconsistencies in phonic teaching, both among and within series. Analysis of forty-five most commonly presented syllabication and pronunciation generalizations show that only twenty-three of these can be applied with 75% consistency to basic reader vocabulary. For instance, the widely-drilled "rule" that in a vowel digraph the first vowel is long and the second silent tests out at only 45% consistency. Wardhaugh<sup>5</sup> further illustrates linguistic weakness of current word attack procedures. Using syllabication principles, the child arrives at /mit' + tenz'/ as the pronunciation units of the word *mitten*s, where normal pronunciation is /mit'enz/. There appears to be a real need for the assistance of linguists in structuring reading materials.

### **Role of Grapheme-Phoneme Correspondence**

Studies of many types exist on the role of grapheme-phoneme correspondence in the reading process. Exploratory team studies at Cornell University<sup>6</sup> have led to a whole sequence of investigations of the perceptual aspects of word-recognition. Gibson<sup>7</sup> and others, using lists of pronounceable and unpronounceable letter combinations with adult subjects, suggest that the most productive unit of word-perception for the skilled reader is a spelling pattern within a word that has a fixed grapheme-to-phoneme correspondence, rather than single letters or whole words. The authors conclude that emphasis on such patterns may facilitate learning to read. Under the same Cornell study, Levin and Watson<sup>8</sup> explored Bloomfield's assumption that the teaching of reading should begin with graphic units with only one phonemic response to a letter and proceed by stages to semi-regular and irregular graphemic units. They assumed

the negative hypothesis on the grounds that better transfer to uncontrolled reading materials could be expected if irregular elements appeared from the start. Artificial orthography was used with children (at the Grade Three level) to avoid interference from previous learning. Results showed no significance in the transfer test between subjects trained on regular and variant words. The authors, however, interpret data from the training exercises to indicate a significant difference in number of learning trials and errors in favour of the group trained on variable words.

Tensuan and Davis<sup>9</sup> report a large scale controlled experiment in Philippine schools, comparing "cartilla" method (essentially phonemic) with a combination method using sight approach supported by phonic analysis. Mean differences favouring combination groups were statistically insignificant, and the conclusion drawn that even in a language of very high phoneme-grapheme consistency (Tagalog), there is no superiority in a strictly phonic method of initial teaching. In the "cartilla" group, there was a higher mean correlation between MA and achievement than in the "combination" group.

Studies of school practices by Henderson and by Morgan and Light<sup>10</sup> suggest the need to follow through longitudinally on growth in reading and to measure in terms of long-term objectives before assuming the superiority of methods or materials. Studies of groups entering Grade Four indicated that apparent gains in mean achievement attributed to intensive training in phoneme-grapheme correspondence in Grade One had largely disappeared.

### **Studies of Direct Linguistic Approaches**

In a recent doctoral study, Dolan<sup>11</sup> compared reading achievement of Grade Four pupils whose reading programme had been supplemented through four years of instruction with intensive phonemic training on the Bloomfield pattern, and a control group taught entirely by standard "developmental" materials. Significant differences in most reading skills (and especially in word recognition) were found in favour of the experimental group. Since no experimental controls of the teaching situation had been established, however, the writer suggests that differences may not necessarily be due to the phonemic nature of the supplementary materials. A more clearly defined and systematic application of principles of learning in the word-recognition programme and the provision for teachers of supplemental materials and exercises may have provided for greater teaching efficiency for the experimental groups.

Ruddell<sup>12</sup> has reported on the first stages of a demonstration study carefully designed to control population and Hawthorne effects of novelty of materials and teacher stimulation. Achievement

is compared for four groups: one taught with standard basal reader materials; one with linguistic materials controlled for grapheme-phoneme correspondence; one with the basal reading materials supplemented by lessons in intonation, sentence patterns and word-function; one with the phonemic materials similarly supplemented.

Results at the end of the Grade One year showed significantly higher achievement in word reading and *regular* word-identification for groups using the phonemic materials over those on basal reader programme. Contrary to hypothesis, however, no significant differences appeared between these two groups in *irregular* word identification. Comparisons of achievement in paragraph reading showed significantly higher means for groups on basal readers over those using the basal readers supplemented with the sentence-structure materials. On the other hand, significant differences in the same skill favoured the phonemic programme supplemented with the structural materials over the same programme unsupplemented.

Data of this study were considered interim, awaiting longitudinal development of the experiment. Mean tendencies factored out of the study suggested hypotheses for further investigation of the effectiveness of the differing programmes in terms of the sex and level of M.A., C.A., and socio-economic background of pupils. A question that undoubtedly needs to be asked in evaluating reading materials and methods (linguistic as well as others) is, "For what particular groups or individuals may these be most valuable?"

## **Conclusions**

Little conclusive evidence is available at the moment as to the values of linguistic approaches to beginning reading. Much interdisciplinary exchange seems necessary to place the proposals of the linguists in a framework of learning theory and proved practice. For this reason, schools need to suspend verdict, neither rejecting basic premises because materials are currently weak or limited, nor plunging into linguistic reading programmes without careful assessment and try-out.

Structural linguistics as a science has found its place in the disciplines and in the teaching of foreign languages. Its possibilities for helping elementary school children learn to read in the native tongue need to be fully explored and exploited along the excellent principles laid down by Strickland<sup>13</sup>. She proposes two lines of action to be carried through on the basis of rigorous research: the first covers the work that the linguists need to undertake to provide the schools with the understandings and background necessary for sound linguistic approaches; the second suggests the specific interdisciplinary research necessary at this point to explore and test out

theory, materials, practice. Healthy indication of the beginning of such research is evident in the literature.

The writer would suggest that the great contribution of linguistics to the teaching of reading may not eventually lie in reading methodology *per se*, but in broader and deeper insights into the nature and process of language on the part of both pupils and teachers. Such understanding may lead to the integration of the elements of language arts programmes in the schools, so that interrelated learning of reading, writing, oral and written language becomes a reality rather than a pious hope.

The problem of sound curriculum for the preparation of teachers going into elementary school is a knotty one. The secondary teacher needs a grasp of the structure and content of his own field, a foundation in learning theory and psychology, and experience in building method and techniques in the framework of some consistent philosophy. What are the needs of the elementary teacher who must lay the groundwork with young children for all the subject disciplines under present school practice? New programmes in elementary school mathematics have shown too clearly the needs of the elementary teacher in subject background. Of how many subjects can he have reasonable mastery?

If, under present practice (and this is another field of investigation) priority can be assigned anywhere, it must go to developing understanding of the principles of language and language learning. The mastery of communication in the native tongue in all its aspects is a major goal of the elementary school.

It will be necessary, then, to find ways of introducing background in linguistics into the teacher's undergraduate training. Whether or not linguistic approaches become part of the school curriculum, the grasp of the most fundamental principles of the structure and process of English is essential if the teacher is to become anything but a recipe-follower of the prescription of manuals and teaching guides. Most programmes for elementary teachers already provide some form of course in language and composition. Building these courses on a sound linguistic basis, and introducing the basic concepts of phonemics, morphemics and modern syntax is the first step toward sounder language teaching. As high schools move further into linguistic programmes in English, the needs for further study can be investigated.

What of linguistics in curriculum and instruction courses in reading? This paper has produced no evidence to suggest that the broad developmental concepts of reading teaching should be abandoned. These, and their implementation should continue to be the core of such courses. Specific linguistic approaches should be exam-

ined and evaluated, along with all other important innovations, as directions which may add new insights and techniques that will help to meet the many and varied needs of children.

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