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Editorial: Short Term Memory, Morphology, and Reading

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Short Term Memory, Morphology, and Reading

The policy of the *American Annals of the Deaf* is to publish manuscripts in the order of acceptance—there is no attempt to “balance” the mix of research/scientific articles or practical/applied articles. Over time, the content and mix tend to even out and trends in the research-to-application process become clear. On several occasions, I have addressed in editorials and articles what seem to me to be important developments and have tried to integrate implications for research and practice. Typically this is done over a few issues of the *Annals* or even over several years.

Occasionally, serendipity strikes and relationships can be seen across two or more articles in the same issue. This is the case in the December 2002 issue, which included articles on short-term memory capacity of deaf individuals and its relationship to reading (Miller, 2002), morphological knowledge applied to printed English (Gaustad, Kelly, Payne, & Lylak 2002), strategies to prevent students from becoming “low-functioning” adults (Bowe, 2002), and perspectives of urban parents of deaf and hard of hearing children (Freeman, Dieterich, & Rak, 2002).

Because of space limits, my discussion of the articles will be brief and just touch the surface. I recommend that readers go back to the original sources for more in-depth discussion and literature reviews. I would also welcome alternate interpretations of the implications of the reports, especially from the authors themselves.

Miller investigated questions of short-term memory and reading in deaf students, with attention to the possible influence of phonological processing. These of course have been areas of interest and contention for decades and results, to put it mildly, have been mixed. Miller used 39 hearing and 49 deaf Israeli schoolchildren in his study. Israeli Sign Language was the preferred mode of communication for 22 of the deaf students and spoken Hebrew was preferred by the other 27 deaf students. Miller reported no differences between the hearing and deaf students, or between the two deaf groups, in memory for nouns or in re-

calling the order of nouns, with the exception in one measure where scores of the oral deaf students were inferior to those of the hearing students. In contrast to the findings on short-term memory, Miller reported that the hearing students performed significantly higher than both deaf groups in a measure of reading proficiency. He concluded that phonological coding, per se, did not provide an advantage to deaf students and that the arguments in its support may be too simplistic. Instead, referring to the work of Marschark and Everhart (1997), he argued that deaf students may not have as much access as hearing students to the general and linguistic knowledge (particularly syntactic) that facilitates retention of certain kinds of information.

Gaustad et al investigated the ability of deaf and hearing students to discern and apply knowledge of printed morphology. Subjects were deaf college students ($n = 43$), hearing college students ($n = 33$), deaf middle school students ($n = 27$), and hearing middle school students ($n = 25$). The authors reported that on measures of ability to discern and apply morphological knowledge of printed English scores of hearing college students were significantly superior to the other three groups, deaf college students and hearing middle school students attained similar scores, and all three groups had significantly higher scores than deaf middle school students. They concluded that deaf students typically have low morphographic knowledge and skills—the ability to extract meaning from the morphemes of printed English, especially bound morphemes. There was a marked decline in scores for deaf students as they moved from more common bound morphemes (e.g., *-ed*, *-s*) to more complex morphemes (e.g., *multi-*, *bio-*, *-itis*). They concluded that the processing of whole words is not the problem for deaf students; word parts are. Citing research (Moore & Sweet, 1990) that reported high correlations between reading achievement and a test of English morphology, Gaustad et al argue that deaf students can access meaningful word elements through vision without mediation through the phonological connection to print and that phoneme/grapheme

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(vocal/writing correspondence) is unreliable for deaf children who do not have direct access to spoken language, and should therefore be bypassed.

Gaustad et al offer recommendations for more effective instruction in morphographic analysis. It should be noted that they are aware of some of the difficulties facing such an orientation. They cite research (Kluwin, 1981) reporting systematic deletion of grammatical morphemes in signed English conversations leading to gaps in morphemic knowledge. These, of course, often are the same morphemes not available through speechreading or small amounts of residual hearing.

Bowe's article was not based on a research study but also focused on the issue of reading. Referring to research that indicates one-fifth of deaf students leave school testing at the second grade or below in reading (thus receiving the label of "low-functioning" individuals, leading to an inability to obtain gainful employment), Bowe discussed two new federal programs, Reading First and Early Reading First. These early intervention programs are mandated to implement "scientifically based reading research" with emphasis on active learning opportunities. Bowe argues that if educators identify and implement effective techniques with young deaf children then the numbers of deaf adults with minimal reading skills will be reduced significantly. Clearly, the earlier deaf (and hearing) children receive effective instruction in literacy, the more productive

their lives will be. The early years are the time when the implications of the work of Miller and Gaustad et al should be investigated and, if successful, implemented.

This brings us to the article by Freeman, et al on the perceptions of urban parents and the struggle for language by their deaf children. The study documents the additional systemic barriers faced by urban parents of deaf children in their efforts to obtain appropriate educational services. Of immediate concern here is the difficulty that parents had to get a diagnosis of hearing loss and to obtain follow-up services. Parents of six of the eight children involved reported that they knew that their children had a hearing loss but were frustrated by the lack of cooperation of medical professionals. Of the two children who were diagnosed at an early age one family had a history of hearing loss and the other child had physical complications at birth. We know that most states now require neonatal hearing testing, but we also are aware that children who are not tested tend to come from poor and/or minority backgrounds. If we are really to provide a free appropriate public education to all children, then it is imperative that all are diagnosed as soon as possible and services are provided immediately.

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