

The White Stuff



Stephen Krashen questions neuroscientific support for a meaningless theory of reading

The white matter of the brain serves to connect one area of the brain with another. In a recently published series of studies, the claim has been made that efficiency of white matter in certain parts of the brain is related to reading ability (Klingberguill, Hedehus, Temple, Salz, Gabrieli, Moseley, and Poldrack, 2000; Nagy, Westerberg, and Klingberg, 2004; Deutsch, Dougherty, Bammer, Siok, Gabrieli, and Wandell, 2005; Beaulieu, Plewes, Paulson, Roy, Snook, Concha, and Phillips, 2005; Ben-Shachar, Dougherty, and Wandell, 2007).

The results of these studies, however, may have little or nothing to do with learning to read for meaning.

Reading experts distinguish between “decoding” and “comprehension.” Decoding means pronouncing words out-loud, while comprehension refers to understanding what is read. The white matter research, thus far, has examined only the relationship between white matter efficiency and decoding. This has been the case with all recent research attempting to link neuropsychology with reading (Coles, 2000; see especially Coles’ chapter seven, “Brain Glitch”).

It is often assumed that children have to learn to decode as a necessary step in learning to read, but there is a great deal of evidence challenging this view.

The competing position, introduced independently by Frank Smith (Smith, 2004) and Kenneth Goodman (see Flurkey and Xu, 2003) decades ago, is that we learn to read by reading, by understanding what is on the page, not by first learning how to decode.

The Smith-Goodman hypothesis is supported by research showing that many children who don’t decode well learn to read at high levels (Krashen, 2001a), that intensive instruction in decoding leads only to better decoding, not to better reading for meaning (Garan, 2001; Krashen, in press), and that children who read more read better (Krashen, 2001b, 2004).

To my knowledge, not a single study of white matter efficiency and “reading” has included measures of reading for meaning, an omission that is easy to deal with.

Note

One study, Deutsch et. al. (2005) included a measure of reading for meaning (the Woodcock Paragraph Reading sub-test) but there is no indication in their paper that they attempted to correlate the results of this measure with measures of white matter efficiency. **X**

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