

Reading Without Sound: The Linguistic and Neural Processes of Reading in Deaf Readers



Zed Sehyr, Ph.D.
San Diego State University

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BioScience Center**

Deaf readers experience poorer reading skills relative to hearing readers but the reasons for the discrepancy continue to be debated. Theories of reading do not effectively account for the nature of the linguistic experiences and processes that support optimal reading development in deaf readers. Many deaf readers nevertheless attain good reading skills by adulthood. Thus, an open question is, how do they accomplish it? Using statistical modeling and event-related potential (ERP) methods, we examined the unique linguistic and neural processes involved in reading and word recognition in adult deaf skilled readers. Our findings suggest that deaf readers may develop alternative routes to reading that are different from those of hearing readers. Specifically phonological awareness, which is a critical predictor of reading comprehension in hearing readers does not appear to contribute to reading comprehension in deaf readers. Further, deaf readers show distinct early neural responses to written words compared to hearing readers, suggesting that their brains have adapted to the visual nature of written language compared to the auditory nature of spoken language. This may be one reason why deaf readers can achieve good reading skills despite the absence of phonological awareness. Finally, I will consider evidence that fingerspelling may play an assistive role in reading development for deaf adults who use American Sign Language (ASL). The visual and manual nature of fingerspelling could support the development of visual and orthographic skills that are important for reading. Overall, this research has important implications for understanding the complex factors that contribute to reading skill in deaf readers. By better understanding the unique linguistic and neural processes involved in reading for deaf readers, researchers and educators may be able to develop more effective reading instruction and remediation programs for individuals who struggle with reading.

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