

Brain Waves Aid Study of Language Impairment

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(PhysOrg.com) -- By looking at how the brain responds to different aspects of grammar, specifically nouns and verbs, researchers at the UT Dallas Callier Center for Communication Disorders are hoping to provide a better understanding of the nature of language disorders in children.

Dr. Diane Ogiela, a post-doctoral fellow at the Callier Center and principal investigator of the study, is using brain waves to study the nature of Specific Language Impairment (SLI) in children. Children with SLI have difficulty in [language development](#) while appearing to have otherwise normal [cognitive abilities](#). Grammar is particularly challenging for children with SLI.

“We know that children with a language impairment have difficulty with verbs, which play an important part in developing more complex language skills,” said Ogiela. “By using electroencephalography, also called EEG, we can analyze the brain waves to see how children with language impairment respond to verbs as compared to nouns and to what extent their responses vary from children with typical language.”

To measure the [brain waves](#), the researchers place a cap embedded with sensors on the head of a participant. The participant then listens to recorded sentences that elicit neurological responses to particular nouns and verbs. The researchers then analyze and compare those responses.

“By looking at the neurological response that children have to nouns and

verbs, we can see if the brain processes the two types of words with the same speed, with the same part of the brain and with the same level of consistency in both the children with and without language impairment,” said Ogiela.

Ogiela hopes the information collected from the study will be used to develop more focused therapy strategies for addressing grammar problems in children with language impairment.

“Children with language impairment tend to have difficulty expressing themselves and understanding complex language. But with focused therapy that targets the specific problem, they may be able to learn how to compensate for some of those difficulties,” said Ogiela.

Provided by University of Texas at Dallas

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