

Breaking Barriers in Communication: New Research Could Improve Communication for Patients with Parkinson's Disease | CEHS

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Dr. Stephanie Borrie, an assistant professor of speech-language pathology, has been awarded a \$300,000 National Institute of Health grant to study “conversational entrainment.” This study could lead to better treatment of speech disorders associated with Parkinson's disease.

The term “entrainment” refers to the rhythm and the flow of a conversation between two people. As we communicate, most of us adjust our speaking patterns, such as our rate of speech, to closely match the other person. “When we entrain, we’re more likely to enjoy the conversation, develop personal rapport, and have enhanced comprehension,” Borrie said.

While speech disorders associated with Parkinson's disease are relatively well-understood from the speaker perspective, less research has been done on how this type of disorder affects the way two people engage in conversation. Those with dysarthria (a motor speech disorder seen in patients with Parkinson's disease) may experience entrainment deficits which lead to breakdowns in conversation.

Borrie's research will focus on developing and evaluating an automated method for the study of entrainment. That method will allow Borrie and her collaborators at Arizona State University to study the acoustic rhythms of a

conversation and quantify the degree to which entrainment is occurring between conversational partners.

The method will analyze a comprehensive list of speech rhythm features and will be built on interactions between two healthy adults. Researchers will then look at which features are most important to a successful conversation. The result will be a method to objectively quantify entrainment, as well as a model to predict conversational success.

In the final year of the grant, Borrie will apply the method and model to conversations involving people with dysarthria and Parkinson's disease.

The findings of this research could have impacts beyond speech-pathology, however. Anyone who has walked away from a conversation thinking it was awkward or that there was more misunderstanding than there should have been could have experienced a lack of entrainment.

The long-term goal of this work, Borrie said, is to “develop a clinical tool to assess entrainment deficits and identify potential treatment targets for people who frequently experience conversational breakdowns.”

For more information, visit the [Human Interaction Lab](#).