

## Computerized analysis of conversational trouble and repair in people with dementia and their carers

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Smartphones, the growth in third party software solutions (termed apps), big data analytics and other digital health technologies promise to transform the treatment of a range of health conditions such as Alzheimer's disease and other dementias. For people living with dementia, the gradual decline of communication abilities contributes to reduced quality of life and increased social isolation. For their carers, communication difficulties are listed as one of top stressors that contribute to their burden of care. Yet relatively little research has been published describing the application of digital technology to understanding and eventually even assisting the communication particularly the conversational, difficulties in dementia. In this research, we analyzed transcripts of conversations from 20 people with dementia and their carers using an automated discourse analysis tool called Discursis™. Discursis measures the recurrence of conversational (semantic) content over the time course of the conversation. Discursis metrics were compared with coded instances of trouble and repair in the conversations. This analysis allowed the identification of a list of specific Discursis metrics which signaled trouble and repair sequences in the conversations thereby generating a computerized script that highlighted periods of significant conversational breakdown.

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