

# Interaction Patterns in Conversations with Alzheimer's Patients<sup>\*</sup>

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*Introduction* This poster describes an ongoing study into interaction patterns in spontaneous spoken conversations of patients with Alzheimer's Disease (AD). Our aim is to compare the behaviour of patients with and without AD on the basis of a range of dialogue phenomena. Building on our previous work [4], we analyse the distributions of these phenomena in the Carolina Conversations Collection (CCC) corpus, comparing patients with and without AD, and find several differences which can help distinguish the two.

*Method and Results* In previous work [4] we showed that the distribution of question types asked by both parties in a dialogue differs between AD and Non-AD patients, with differences in the frequency of closed and open questions asked, and in the clarification and non-understanding behaviour which can follow (agreeing with similar findings using different methods and a different clinical setting e.g. [1,2]). In this paper, we investigate further phenomena, looking at the types of *responses* to questions asked, and at *delayed* responses via the presence of pauses, both within a single speaker turn and at speaker transition points.

We find that response types differ significantly, with AD patients more likely to answer yes-no questions positively, and Non-AD patients more likely to answer negatively, optionally expanding their answers. Pauses at speaker transition points, both from patient to interviewer and from interviewer to patient are found to differ significantly between the two groups, both in terms of number and duration (see also [3]). We hypothesize that these pauses reflect difficulty answering questions: this causes delays in transition from interviewer to patient after a question is asked, and delays in transition from patient to interviewer when a question is answered insufficiently well. Similarly, the difference in response types may be evidence of strategies on the part of AD patients to avoid complex answers or open discussion - see also [1].

This study confirms that these interaction patterns may serve as an index of internal cognitive processes that help in differentiating AD patients and Non-AD patients and may be used as an integral part of language assessment in clinical settings.

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Tag	$\kappa$
qy	0.76
qw	0.89
qy <sup>^</sup> d	0.66
qw <sup>^</sup> d	1.00
<sup>^</sup> g	0.49
br	0.95
qc	0.79
qr	0
ny	1.00
ny <sup>^</sup> e	0.91
na	0.87
nn <sup>^</sup> e	0.66
no	0.50
sd-qw	0.64
other	0.90
all tags	0.84

**Table 1.** Multi-rater Cohen’s  $\kappa$  score.

## References

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