

## Self-repair in dialogues with patients with schizophrenia

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Self-repair is pervasive in dialogue (Schegloff et al. 1977), and conventionally regarded as symptomatic of problems with communication, caused by self-monitoring issues (Levelt, 1983) or as a result of feedback from one's interlocutors (Goodwin, 1979). In some circumstances, e.g. the Map Task (Anderson et al., 1991), more self-repair may be an index of how hard people are working to be understood (Colman and Healey, 2011). However, there is evidence that disfluencies do not just function as markers of miscommunication – they contribute to improving the effectiveness of interaction (Brennan and Schober, 2001; McCabe et al., 2016).

It is well documented that people with a diagnosis of schizophrenia have problems with language and social cognitive skills, yet little research has investigated how these impact interaction. The few studies that do find that patients' repair is associated with verbal hallucinations, and adherence to treatment (Leudar et al., 1992; McCabe et al., 2013), and that clinicians' use of self-repair has positive clinical consequences (McCabe et al., 2016). Research into repair therefore has the potential to be used in diagnostic tools, and feed into training for psychiatrists to detect when a patient is in difficulty or shape their own talk more effectively.

However, there is conflicting evidence regarding how patients with schizophrenia use repair and whether this differs from non-clinical populations. In consultations, patients use more self-repair than psychiatrists (McCabe et al., 2013) and this is higher than found in general dialogue, or Map Task dialogues (Howes et al., 2012; Colman and Healey, 2011). Contrarily, in a study where subjects described the experimenter's actions, frequency of repair did not differ between patients and matched controls (Leudar et al., 1992).

These differences may reflect interactional factors, such as the domain, or role, and not differences between schizophrenia patients and non-clinical populations per se. Additionally, in the above studies, patients' interlocutors were aware of their diagnosis, which could have influenced the way they interacted with the patient, in a way that was reflected in the repair measures (c.f. Doyen et al., 2012).

We report data from a unique corpus of 40 triadic dialogues that addresses these potential confounds (Lavelle et al., 2013). The corpus consists of 20 control dialogues and 20 between one patient with schizophrenia and two healthy participants unaware of the patient's diagnosis. Results show differences between patients' and controls' self-repair, such that patients use fewer self-repairs (automatically detected using STIR; Hough and Purver, 2014) and fewer filled pauses (er, um) per turn than either their partners or controls. Furthermore, the presence of the patient also affects patients' partners, who use more unfilled pauses per turn than patients and controls, and fewer filled pauses than controls (repair: patient=0.081, partners=0.186, control=0.181; filled: patient=0.046, partners=0.081, control=0.140; unfilled: patient=0.066, partners=0.077, control=0.059).

This unique data demonstrates that not only are there communication difficulties in schizophrenia but they also impact on social interactions more broadly, thus providing new insights into the social deficits of this complex disorder. The data also support the idea that disfluencies are communicative solutions, not problems.

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