Use of second-person pronouns and schizophrenia

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Summary
A masked analysis of videotaped assessments of people at high genetic risk of schizophrenia revealed that those who subsequently went on to develop schizophrenia used significantly more second-person pronouns. This was evident before diagnosis, at two separate assessments approximately 18 months apart. This supports the view that people who go on to develop schizophrenia may have an abnormality in the deictic frame of interpersonal communication – that is, the distinction between concepts being self-generated or from elsewhere may be blurred prior to the onset of a diagnosis of schizophrenia.

Declaration of interest
None.

Most speech contains a significant amount of errors, although these are typically corrected by the speaker almost immediately and do not result in the listener failing to understand the message. The gross abnormalities in psychotic speech, epitomised by formal thought disorder, are characterised by the speaker not having insight into the incomprehensibility of the errors they are making; indeed, it often seems that the person is convinced that the language they are using is completely understandable to the listener. Studies of language abnormalities in schizophrenia have varied from transcribed analysis of single words through to observer-rated scales looking at the proportion of time the speech is incomprehensible or disfluent in an interview. Abnormal use of referents in speech has also been found in schizophrenia but importantly all these analyses have taken place at different points during the illness, and there has been very little opportunity to analyse the speech of people before they develop schizophrenia. The effects of an acute psychotic episode, of medication, the organisation of services and the response of the person to a diagnosis all may have an effect on the communication styles of people with an established diagnosis. The Edinburgh High Risk Study (EHRS) – and in particular videotaped interviews of some participants – offers the opportunity to prospectively and blindly examine the use of language of a group of people who are at high genetic risk of schizophrenia before they meet diagnostic criteria for psychosis.

Method
The EHRS has been described in full elsewhere. Briefly, people at high genetic risk of schizophrenia, from multiply affected families, were identified and a control group from a similar social background was also recruited. Repeated assessments at approximately 18-month intervals were conducted. At each assessment a number of tests were done including magnetic resonance imaging brain scans, psychometric tests and a Present State Examination (PSE), which was videotaped with the participant’s consent. All scans, psychometric tests and a Present State Examination of tests were done including magnetic resonance imaging brain scans. At each assessment, at approximately 18 months apart. This supports the view that people who go on to develop schizophrenia may have an abnormality in the deictic frame of interpersonal communication – that is, the distinction between concepts being self-generated or from elsewhere may be blurred prior to the onset of a diagnosis of schizophrenia.

Results
There were no significant differences between the high-risk group as a whole and the controls on any measure, nor were there significant differences between those within the high-risk group who had experienced psychotic symptoms and those who had not.
Within the high-risk group, however, those who developed schizophrenia used significantly more second-person pronouns than those who did not (P = 0.005, d.f. = 1, F = 9.4). As a percentage of the total words used, those who developed schizophrenia used second-person pronouns 0.5% of the time and those who did not used them 0.25% of the time (range 0–1.46). An example indicative of the abnormality is: patient: ‘You mentioned . . .’; interviewer: ‘No, you were telling me about . . .’.

The same pattern was found when the groups were compared across two assessments. Only the use of second-person pronouns within the high-risk group was significant, differing between those who developed schizophrenia and those who did not (P = 0.003, d.f. = 1, F = 11.7). There were no significant differences between the high-risk group and controls, and no significant differences between those who had had psychotic symptoms and those who had not.

### Discussion

Pronouns are deictic words that, while having fixed semantic meaning, require consideration of place or time to have specific, denotational meaning. Repetition of what another person says is not an option when using a second-person pronoun. They place the representative functions of speech, such as describing a table, in the appropriate interpersonal (and time/place) context for accurate communication between speaker and listener. Difficulty in establishing the difference between you and I leads to this structuring of the representative functions of speech being disturbed and can make communication unintelligible. Broadly intact representational memory structure has been described in schizophrenia, with abnormality found when using words to construct relational interpretations. Abnormality in the deictic frame has been proposed as a fundamental disturbance in schizophrenia, underlying the blurred boundary between self and other seen across psychotic symptoms. The abnormal use of pronouns was found at two time points in the study and was consistent despite changes in the symptom profile in both the people who did and those who did not go on to develop schizophrenia. This suggests it reflects a more fundamental abnormality in people with schizophrenia’s experience of the world rather than being an association with a specific symptom cluster.

### Table 1 Demographic details

<table>
<thead>
<tr>
<th></th>
<th>Control group (n = 8)</th>
<th>High-risk group (n = 6)</th>
<th>No psychotic experience (n = 12)</th>
<th>Psychotic symptoms, no schizophrenia (n = 12)</th>
<th>Schizophrenia (n = 6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender, n</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Male</td>
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<tr>
<td>Female</td>
<td>4</td>
<td>8</td>
<td>7</td>
<td>2</td>
<td></td>
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<tr>
<td>Age, years: mean (s.d.)</td>
<td>22.3 (2.0)</td>
<td>21.5 (3.0)</td>
<td>22.0 (3.2)</td>
<td>19.0 (1.5)</td>
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<td>Social class, median</td>
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<tr>
<td>National Adult Reading Test, mean (s.d.)</td>
<td>102.3 (12.0)</td>
<td>102.5 (9.5)</td>
<td>98.7 (9.22)</td>
<td>103.6 (12.7)</td>
<td></td>
</tr>
</tbody>
</table>

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### References
