Use of second person pronouns and schizophrenia
Andrew R. Watson, Çağla Defteralı, Thomas H. Bak, Antonella Sorace, Andrew M. McIntosh, David G. C. Owens, Eve C. Johnstone and Stephen M. Lawrie

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.

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. A masked analysis of videotaped assessments of people at high genetic risk of schizophrenia before they 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 frame of the representative functions of speech being disturbed and can make communication unintelligible. Broadly intact representational memory structure has been described in schizophrenia, with abnormalities found when using words to construct relational interpretations. Abnormality in the deictic frame has been proposed as a fundamental disturbance in schizophrenia, underly ing 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 abnormalities in people with schizophrenia’s experience of the world rather than being an association with a specific symptom cluster.

<table>
<thead>
<tr>
<th>Table 1 Demographic details</th>
<th>Control group (n = 8)</th>
<th>High-risk group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender, n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Female</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Age, years: mean (s.d.)</td>
<td>22.3 (2.0)</td>
<td>21.5 (3.0)</td>
</tr>
<tr>
<td>Social class, median</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>National Adult Reading Test, mean (s.d.)</td>
<td>102.3 (12.0)</td>
<td>102.5 (9.5)</td>
</tr>
</tbody>
</table>

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**References**

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