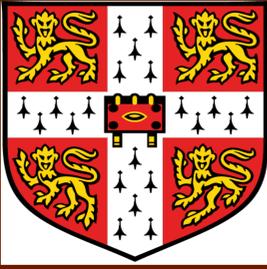


Reasoning in Deluded and Non-deluded Patients with Schizophrenia

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INTRODUCTION:

Theories attempting to explain the origin and the maintenance of delusions have suggested that there is impairment in one or other type of reasoning skills in patients. Kahneman and his colleagues have proposed a two-system view of reasoning: an intuitive “System 1” and a more logical “System 2”. Intuitive “system 1” reasoning has not so far been investigated in schizophrenia.

PARTICIPANTS:

| | Age | NART-R IQ | WAIS-R IQ | |
|------------------|------------|----------------|---------------|--|
| Controls (22) | 40 (13.22) | 110.64 (10.96) | - | • Controls and patients were matched for age and estimated IQ (NART) |
| Patients (26) | 46 (8.27) | 106.00 (11.42) | 94.38 (2.40) | • Deluded and non-deluded were matched for age and current IQ (WAIS-R) |
| Deluded (14) | 45 (8.48) | 106.29 (12.16) | 92.00 (9.63) | • Patients were selected on the basis that they were relatively intellectual intact using as a criterion a current WAIS-R IQ of 80 or greater. |
| Non-deluded (12) | 47 (8.16) | 105.67 (11.01) | 97.18 (13.85) | |

MEASURES:

- NART (estimate of pre-morbid IQ), Verbal Odd One from the VESPAR battery (general reasoning ability), “Kahneman” and “Non-Kahneman” Reasoning Test

The Reasoning Test items were presented on a card in front of the participant one at a time in a fixed order. At the end the researcher re-presented the items that had elicited a heuristically biased or wrong answer giving also a cue to increase the contribution of System 2.

“Kahneman” Example: *Linda is 31 years old, single, outspoken and very bright she got a degree in philosophy. As a student she was deeply concerned with issues of discrimination and social justice, and also participated in antinuclear demonstrations. Which of the following statements is most likely to be true? Linda..a) is a teacher and is active in the feminist movement b) is a plumber c) is a teacher*

Cue: *Linda cannot be more likely to be a teacher and a feminist than to be a teacher. It is not mathematically possible – there will always be more people who are teachers than teachers who are feminists as well. Would this make you change your answer?*

“Non-Kahneman” Example: *If she meets her friend then she will go to the play. She meets her friend. What follows? a) She will go the play, b) She will not go to the play, c) Can't say*

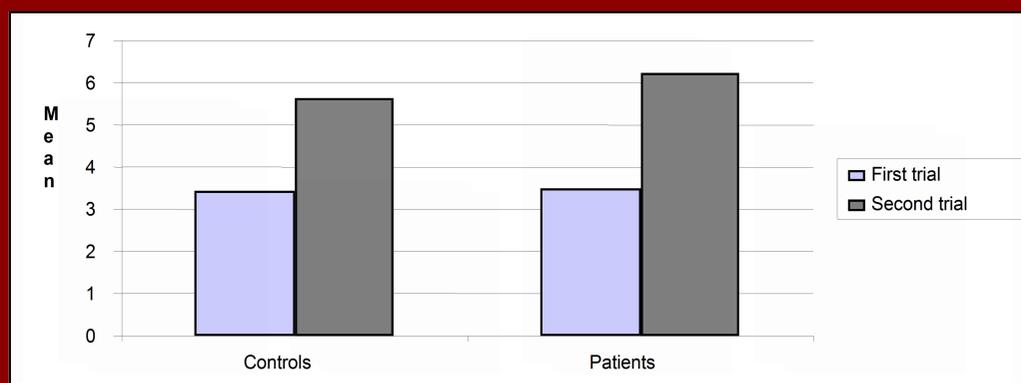
Cue: *The logic of the problem dictates that meeting her friend will lead to her going to the play. Would this make you change your answer?*

RESULTS:

- Patients scored significantly lower than controls on the Verbal Odd One and the “Non-Kahneman” items of the Reasoning Test.
- Patients and controls performed similarly ($F(1,44)=0.37$; $p=0.5$) on the “Kahneman” items of the Reasoning Test and both scored better on the second trial ($F(1,44)=79.9$; $p<0.0001$)

There was a strong trend for the patients to produce fewer Kahneman bias responses than controls ($F(1,46)=3.6$; $p=.065$). Fewer Kahneman errors were made on the second trial ($F(1,46)=84.4$; $p<0.001$). The interaction between group and trial was not significant.

Correct mean scores for controls and patients during the first and the second trial of the Kahneman items.



- Deluded and non-deluded patients did not differ on any measure used in this study.

CONCLUSIONS:

➤ The finding that patients with schizophrenia showed significantly poorer performance than the healthy controls on both a general reasoning task (the Odd One test) and on the Non-Kahneman items of the reasoning test is in keeping with the widely accepted view that patients with schizophrenia show a tendency to poor general cognitive performance.

➤ Patients with schizophrenia performed at least as well as controls on a test requiring them to ignore contextual biases in reasoning (Kahneman Reasoning Test items) and showed similar performance to the controls on the second attempt indicating that both groups are equally susceptible to the influence of simplifying heuristics. This observation implies that patients are less dependent on their intuition than controls.

➤ The functioning of Kahneman’s System 1 and 2 in people with schizophrenia did not shed light on the cognitive basis of delusions.

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