

THEORY OF MIND AND REASONING BIAS IN SCHIZOTYPY

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✓ OBJECTIVES : To compare performances at jump to conclusions and theory of mind exercises in schizotypal and control participants

The concept of **schizotypy** (Meehl, 1962) has been proposed to refer to individuals with an **underlying vulnerability to schizophrenia** including **interpersonal aversiveness**, anhedonia, ambivalence and cognitive slippage. A “**jump to conclusions**” (JTC) tendency has been observed in schizotypy (Sellen et al., 2005), as in schizophrenia (Garety et al., 1991).

Theory of Mind (ToM) is the « *ability to explain the behavior of others in terms of their mental states* » (Corcoran et al., 1995; Premack and Woodruff, 1978). Difficulties in ToM have been frequently observed in schizophrenia (Brüne, 2005, for a review) and schizotypy (Pickup, 2006).

We studied JTC and ToM in subjects with high social anhedonia, one of the main characteristics of schizotypy, and the relationships between both. Our hypothesis is that participants with ToM difficulties would have a tendency to jump to conclusions.

✓ METHOD

PARTICIPANTS:

25 subjects with high score (>17 for females and >19 for males) on **Social Anhedonia Scale** (SAS - Chapman et al., 1976).

20 control subjects with modal score on SAS (score = 7) without any psychiatric history

Jump to conclusion TASK

We use the « **jar and beads** » task, a probabilistic task of choice (Garety et al., 1991), with a **85/15 ratio**. The results are the number of beads asked by each subject.

ToM TASK

This task is adapted from Corcoran et al. (1995). It consists in **20 short stories involving two characters in interaction**. Subjects have to **infer real intentions** behind indirect speech utterances.

☞ For example:

John is on the phone with a friend since one hour. He says to his friend

« My mother ought to call me in a few minutes »

What does John mean when he says this ?

Total score range from 0 to 60 (3 points max for each story)

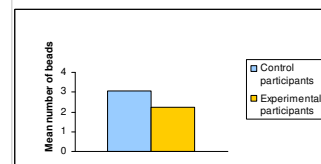
✓ RESULTS

Mean comparison JTC

Mean number of beads asked before decision:

Control participants 3.05 (Sd:1.30)
Experimental participants 2.22 (Sd:1.29)

$t = 2.13; p < 0.05$



Mean comparison ToM

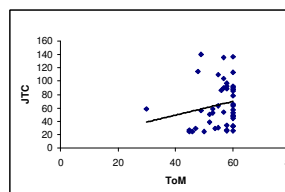
Score at ToM task (max=60)

Control participants 59.05 (Sd:1.60)
Experimental participants 52.36 (Sd:6.73)

$t = 4.33; p < 0.0001$



Correlation JTC-ToM



Linear regression equation

$$y = 1.0333x + 7.6712$$
$$R^2 = 0.0347$$

Weak correlation between ToM and JTC

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✓ CONCLUSIONS

- ✓ **Difficulties in ToM** are observed in our group of participants scoring **high on social anhedonia scale**, according to results with schizotypal participants (Pickup, 2006).
- ✓ **Schizotypal participants need less beads than control** participants before making a decision in the conditional decision task
- ✓ There is **no correlation between performances at JTC and ToM**. The absence of correlation may be attributed to a discrepancy between experimental and ecological contexts for conditional reasoning. We need to **create a more ecological task for JTC**.
- It seems interesting to **train ToM abilities in schizotypy and schizophrenia**, as tested by Kayser et al. (2006) and Silver et al. (2004). Taking account of jump to conclusion tendency in this rehabilitation process may be very interesting. This might be done by **teach to slow down while training to infer mental states in others**.

KEYWORDS: Schizophrenia - Schizotypy – Theory of Mind – Conditional reasoning

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