

# Schizophrenia: when experience doesn't help social interaction

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Schizophrenia is a mental illness that seriously affects social interaction. Recent studies have shown that people with schizophrenia have difficulty in interpreting others' intentions. One of the causes has just been identified by researchers at the Centre de Recherches Cerveau et Cognition (France) and the Centre de Neurosciences Cognitives de Lyon (France). They showed that schizophrenic patients use past experience wrongly when trying to anticipate the intentions of others. These results are published in the online version of the journal *Brain*.

When someone gets up from their seat on the bus, they may want to offer it to you or get out at the next stop. Identifying the intentions of others is essential when living in a community. In a previous paper, the same team of researchers proposed a new paradigm to explain how this is achieved. They believe this ability is based on the use of two types of information. The first, obtained by observing the movements of others, is visual. But a second type of message is also necessary: a priori information, which comes from our knowledge and past experience and is stored in our brains. Without it, it is difficult to interpret sensory information, which is often fragmented.

The researchers hypothesized that these two types of elements are misused by [schizophrenia patients](#), which would explain why they have trouble recognizing the intentions of others. They tested patients with various symptoms of [schizophrenia](#): negative symptoms (loss of interest, [social withdrawal](#)), positive symptoms ([hallucinations](#), [delirium](#)) or disruptive ones (incoherent speech, jumping from one subject to the

other). Patients first watched several videos showing actors manipulating objects with different intentions. Some of the videos were played a greater number of times, so as to manipulate a priori information. The patients then watched a cut version of the same video sequences. This allowed researchers to control the amount of [visual information](#) available to the patients, who were asked to guess the intentions of the actors from the truncated scenes.

The scientists found that [schizophrenic patients](#) use a priori information poorly. Those with negative symptoms make little use of data from experience as though they had no expectations about the intentions of others. In contrast, those with positive or disruptive symptoms rely too heavily on a priori information to the detriment of visual information. Their sensorial perception does not prompt them to question their beliefs or preconceptions. In all cases, an imbalance in the interaction between visual information and a priori information leads to misinterpreting the intentions of others.

These results could form the basis of new cognitive therapy strategies that would help patients to improve their ability to use their past experience and reduce their difficulty in recognizing the intentions of others, a symptom that medication cannot treat. In addition, this paradigm could also be valid for autism, a condition with strong similarities to the negative symptoms of schizophrenia.

**More information:** Chambon V, Pacherie E, Barbalat G, Jacquet P, Franck N, and Farrer C. Mentalizing Under Influence: Abnormal Dependence on Prior Expectations in Patients with Schizophrenia. *Brain*, online on 28 November 2011.

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