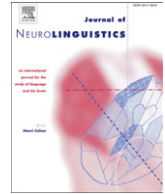




Contents lists available at ScienceDirect

Journal of Neurolinguistics

journal homepage: www.elsevier.com/locate/jneuroling



Pragmatic and executive dysfunction in schizophrenia

Maud Champagne-Lavau^{a,c,*}, Emmanuel Stip^{b,c}

^a *Hôpital du Sacré-Cœur de Montréal, Pavillon Albert-Prévost, Montreal, Canada*

^b *Centre de recherche Fernand-Seguin, Hôpital Louis-H. Lafontaine, Montreal, Canada*

^c *Psychiatry Department, University of Montreal, Montreal, Canada*

ARTICLE INFO

Article history:

Received 6 January 2009

Received in revised form 23 August 2009

Accepted 25 August 2009

Keywords:

Pragmatic

Non-literal language

Executive function

Theory of mind

Schizophrenia

ABSTRACT

Many studies have reported that patients with schizophrenia (SZ) can be impaired in their pragmatic abilities, typically affecting the processing of non-literal speech acts (e.g., metaphors, indirect requests). Various hypotheses have been proposed to account for impairments in understanding non-literal language, such as executive dysfunction or problems attributing mental states to others; the latter is referred to as theory of mind (ToM) abilities. The aim of this study was to explore whether pragmatic deficits do or do not coexist with ToM impairments and/or impairments of executive functions in schizophrenia. Twenty SZ patients and twenty matched healthy control (HC) participants – all right-handed and native French-speakers – were tested individually for three abilities: (a) pragmatic, (b) ToM (original first- and second-order mental state attribution tasks) and (c) executive functions. The main results showed that SZ patients exhibit pragmatic impairments which co-occurred with an executive dysfunction such as a lack of flexibility and a ToM deficit. Subsequent analyses of covariance suggested that ToM could play a role in pragmatic understanding while flexibility did not. Our study gives partial support to neuroimaging literature showing an impaired involvement of the prefrontal cortex in such processing in schizophrenia.

© 2009 Elsevier Ltd. All rights reserved.

1. Introduction

The ability to process pragmatic aspects of language (e.g. non-literal language) is a social skill that contributes to individual and social well-being. Daily, verbal communication usually relies on

* Corresponding author. Hôpital du Sacré-Cœur de Montréal, Pavillon Albert-Prévost, 6555 Gouin Blvd. West, Montreal, Quebec H4K 1B3, Canada. Tel.: +1 514 338 2222x4415.

E-mail address: maud.champagne-lavau@umontreal.ca (M. Champagne-Lavau).

the transmission of non-literal messages rather than a straightforward transmission of literal information. Therefore, a deficit in the processing of such pragmatic aspects of language may be a significant factor in the social isolation experienced by many individuals with schizophrenia (SZ). SZ patients have been shown to exhibit pragmatic deficits, particularly deficits in understanding non-literal utterances such as irony, metaphor, or indirect requests that require the ability to process more than the literal meaning of an utterance in order to grasp the speaker's intention in a given context (see Champagne-Lavau, Stip, & Joannette, 2006; Mitchell & Crow, 2005 for exhaustive reviews of these deficits). Studies have also described pragmatic impairments in SZ patients such as failure to decode violations of conversational implicatures (Tenyi, Herold, Szili, & Tixler, 2002). SZ patients may also exhibit an absence of semantic priming for targets that are metaphorically rather than literally related to the prime (Spitzer, 1993; Titone, Holzman, & Levy, 2000; Titone, Holzman, & Levy, 2002).

These studies clearly show that although they are able to understand literal language, SZ patients have problems understanding non-literal language, suggesting that only high-level language processing is impaired in schizophrenia. Given SZ patients' assorted impairments affecting the understanding of irony and metaphor, different cognitive processes such as intention decoding (e.g. ability to understand speaker's mental states such as intention or belief), executive dysfunction might be involved in such processing (Champagne-Lavau et al., 2006; Martin & McDonald, 2003). Therefore, a deficit in non-literal language understanding may reflect the presence of dysfunctions at different levels. Thus, in this paper, we explore the relationship between three different cognitive abilities that seem to have substantial overlap (pragmatic understanding, intention decoding and executive dysfunction) in schizophrenia.

1.1. Relationship between pragmatic and ToM in schizophrenia

Pragmatic interpretation such as non-literal language processing has been defined as a *mind-reading* exercise involving inferences concerning the speaker's mental state (Grice, 1969). A deficit in decoding such intentions might result in an impairment affecting the understanding of non-literal language. In the case of non-literal language, the hearer must be able to distinguish what the speaker actually says from what he or she intends to convey. To understand how a hearer can interpret an ironic or false utterance, for example, one must comprehend what the hearer knows and what the speaker thinks the hearer knows. Thus, a correct interpretation of meaning relies on a correct comprehension of the speaker's intentions. SZ patients have been shown to have difficulties assessing speakers' mental states and understanding their intentions (Frith, 2004; Lee, Farrow, Spence, & Woodruff, 2004).

The ability to form representations of other people's mental states and to use these representations to understand, predict and judge their statements and behaviors is referred to as a "theory of mind" (ToM) (Baron-Cohen, Leslie, & Frith, 1985; Premack & Woodruff, 1978). Pickup and Frith (2001) showed that various studies evidencing impaired non-literal understanding in SZ patients have associated those problems with a deficit in ToM ability (Corcoran, Cahill, & Frith, 1997; Corcoran, Mercer, & Frith, 1995; Janssen, Krabbendam, Jolles, & van Os, 2003). Corcoran et al. (1995) studied the comprehension of non-conventional indirect requests (e.g., "it is cold here" meaning "close the window"); they showed that SZ participants had more trouble than normal controls performing this task, which depends on an ability to attribute mental states (ToM). The Corcoran et al. (1997) results revealed that SZ patients show a lack of appreciation of visual jokes, when understanding the humor depends upon inferred mental states but not when it depends upon non-mentalistic inferences. These results agreed with those of Frith and Corcoran (1996), who applied a ToM paradigm used in autism and showed that SZ patients had impairment in attribution of mental states. SZ patients may show poor understanding of false beliefs and deception in story-comprehension tasks (Doody, Gotz, Johnstone, Frith, & Owens, 1998; Drury, Robinson, & Birchwood, 1998; Frith & Corcoran, 1996). In addition, correlations have been evidenced between attribution of mental states (ToM) and the interpretation of non-literal language such as irony (Langdon, Coltheart, Ward, & Catts, 2002) or proverb (Brune & Bodenstein, 2005) in schizophrenia.

Download English Version:

<https://daneshyari.com/en/article/912046>

Download Persian Version:

<https://daneshyari.com/article/912046>

[Daneshyari.com](https://daneshyari.com)