

Poster presentation

Differential effects of sentence context on lexical ambiguity resolution in different subgroups of patients with schizophrenia

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Background

It has been suggested that a failure in the processing of context information may account for the heterogeneous manifestations of schizophrenia. In a previous study, we have shown that patients with schizophrenia were impaired in their ability to use sentence context during lexical ambiguity resolution. The most striking patient deficit appeared in sentence contexts related to the dominant (i.e. more frequent) meaning of homonyms; however, this deficit was present in only 50% of patients. The present study aimed to investigate priming patterns in patients with normal (NP) and reduced (RP) priming of dominant targets following dominant sentence contexts.

Materials and methods

A cross-modal priming lexical decision task was used. Thirty noun-noun equibaised homonyms were embedded in sentence contexts that created a bias towards the dominant subordinate or neither meaning of the homonym (experimental sentences). Control sentences were constructed by replacing the final homonym of each sentence with a control word (selected to form a plausible completion to all contexts), while keeping all other elements of the sentence identical. Visual targets were associates of the two meanings of each ambiguous word and appeared after an interstimulus interval of 0 msec. Participants were 14 patients with schizophrenia (7 NP, 7 RP) and 14 healthy controls, matched on age, sex, education and parental education.

Results

The use of sentence context for ambiguity resolution was impaired in both patient groups. NP patients showed significant priming (i.e. a statistically significant acceleration of reaction times in experimental in comparison to control sentences) only for dominant targets following dominant sentence contexts (subject analysis $p1 < 0.001$, item analysis $p2 = 0.03$), but no priming for either target type following subordinate or unbiased contexts (all $ps > 0.1$). RP patients, on the other hand, exhibited priming for both target types following unbiased sentence contexts (dominant targets: $p1 = 0.02$, $p2 < 0.001$; subordinate targets: $p1 = 0.01$, $p2 = ns$); this group also showed (marginally) significant priming for subordinate targets following subordinate sentences ($p1 = ns$, $p2 = 0.07$), but no priming for dominant targets at dominant contexts. Although the pattern of results suggested the presence of disturbances both in the organization of the semantic network and in extralexical cognitive processes in both patient groups, the type of disturbance was clearly different in each group.

Conclusions

Although the concept of "context" is useful for the integration of schizophrenic deficits into a unifying theoretic framework, the underlying disturbances may be quite variable. Further studies are warranted to investigate any relations with clinical variables or neuropsychological performance.