conditions relative to the center presentation. Increasing buffer load did not affect patients' performance. Implications: These findings suggest that working memory deficits in schizophrenia can be attributed to selective attention and distractibility rather than limitations in buffer size. Thus, inability to integrate and bind different features of stimuli, such as their shape and location, may account for patients poor performance on memory tasks.

DISTURBED LANGUAGE PROCESSING, DISORGANIZATION, AND ATTENTIONAL IMPAIRMENT IN SCHIZOPHRENIA

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Language disturbances are common in schizophrenia and measures of language processing provide important tools for schizophrenia research. The Stroop task measures the effects of attending to one dimension of a word (its color) in the face of the automatic processing of its semantic meaning. Patients show a robust pattern of deficits on the Stroop task, which are strongly associated with disorganization and language disturbances. By determining the mechanism underlying Stroop task deficits in schizophrenia, we can examine two competing hypotheses about language abnormalities in schizophrenia a) the increased influence of word reading in schizophrenia reflects abnormal automatic spreading activation within the lexicon, b) these effects reflect a failure in the allocation of attention between competing stimulus dimensions. We tested these competing hypotheses in three experiments which examined the relationship between Stroop performance and: 1) lexical priming tasks indexing automatic spreading activation; and 2) performance requiring the use of context information; and 3) variations in the content of neutral stimuli. In all three studies, schizophrenia patients Stroop task performance correlated with disorganization. Further, the results of all three studies support the hypothesis that abnormal Stroop performance, language disturbances, and disorganization in schizophrenia reflect a failure of the control of selective attention.

CONTEXT PROCESSING DISTURBANCES IN SCHIZOPHRENIA: EMPIRICAL TEST OF A THEORETICAL MODEL

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In previous work, we constructed computational models of performance in a set of cognitive tasks in which schizophrenics are known to exhibit deficits. This work resulted in a specific hypothesis concerning a function of prefrontal cortex (PFC), and its involvement in schizophrenia: that PFC is responsible for the processing of context, and that a disturbance in this mechanism is responsible for a number of cognitive deficits observed in schizophrenia. These models made predictions regarding task dimensions that should be relevant to performance deficits in schizophrenic patients. Specifically, they predicted that schizophrenics would show the greatest deficits in conditions requiring that context be maintained over a delay, particularly when it must be used to elicit a context-mediated response in favor of a competing dominant response. To test these predictions, we modified three tasks—the AX-CPT, the Stroop task, and a lexical disambiguation task—and administered them to schizophrenic patients, patients with major depression, and non-psychiatric controls. The results corroborated our predictions concerning schizophrenic performance in context-sensitive conditions of these tasks, and correlations of performance in these conditions across tasks. These findings provide strong support for our hypothesis concerning a disturbance in the processing of context in schizophrenia.

LANGUAGE AND THOUGHT DISORDER IN SCHIZOPHRENIA: COGNITIVE NEUROPSYCHOLOGICAL APPROACHES

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Thought disorder is a key feature of schizophrenic psychosis. Explaining it has remained elusive partly, because of problems of definition. Recent advances in cognitive neuropsychology and computational neuroscience have provided new frameworks which appear to accommodate some ideas from the old 'associationist' psychology of Bleuler, such as the notion of a lexical-semantic network. Several methodologies have been exploited to examine lexical processing in schizophrenic patients, with and without thought disorder. These include tests of word fluency, direct and indirect semantic priming, sentence verification, and on-line word monitoring. In addition, functional neuroimaging techniques such as PET and fMRI are beginning to shed light on the neuroanatomical substrates for the detection of semantic anomaly in normal subjects, and manifest thought disorder in patients. There is some evidence that the postulated semantic network may be abnormally activated in schizophrenia. Problems in interpreting experimental data include distinguishing post-processing or executive dysfunction from dysfunctional modular processes, and relating functional anatomy to cognitive models. Some of these problems mirror the 'language versus thought' debates of previous eras. The importance of affect and content need to be included in a complete theory of schizophrenic thought disorder.