

An ERP Examination of Pronoun Resolution in Schizophrenia
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An impaired use of cohesion markers, such as pronouns, in patients with schizophrenia is well documented during production and has been postulated to be a trait-marker of the disorder. However, no study has examined the underlying neurocognitive mechanisms mediating this impairment. The present study employed event-related potentials (ERPs) to examine pronoun resolution during reading comprehension in schizophrenia. Patients and healthy matched controls read sentences that contained an ambiguous pronoun (“he” in “Mark and John went to the store because he needed milk”), failing pronoun (“she” in “Mark and John went to the store because she needed milk”; “she” in “Mark went to the store because she needed milk”), or unambiguous pronoun (“he” in “Mark went to the store because he needed milk”). Examination of neural activity evoked to ambiguous pronouns relative to unambiguous pronouns in healthy controls showed a larger Nref component, suggesting increased working memory demands associated with keeping two potential antecedents online in order to resolve the ambiguity. In patients, however, an Nref was not evoked, implicating a working memory deficit in pronoun comprehension. Moreover, whereas controls exhibited a larger amplitude P600 to failing relative to unambiguous pronouns, patients with schizophrenia exhibited both a larger amplitude N400 and P600 effect to these failing pronouns, suggesting that they may engage different cognitive processes in attempting to resolve these pronouns. These findings are the first to demonstrate a neurocognitive impairment in establishing referential coherence across clauses in schizophrenia.