

## **Seeing the wood for the trees: ERPs reveal abnormal patterns of perceptual and semantic priming during object recognition in schizophrenia**

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We used event-related potentials (ERPs) to probe the time-course of automatic object recognition in schizophrenia. Schizophrenia patients and demographically-matched controls performed a go-no-go semantic categorization task while viewing pictures preceded by masked identical or non-identical picture primes. Two different prime durations, 90ms and 150ms, were used while the SOA was held constant (170ms). Patients showed abnormal patterns of priming on ERP components indexing both early perceptual stages of object recognition (the N/P190) and later semantic processing (the N400). On the N/P190, repetition priming effects were smaller overall in patients than controls, consistent with previous findings indicating impaired perceptual visual processing in schizophrenia. However, like controls, patients were able to take advantage of the longer prime duration to produce larger N/P190 priming effects. The opposite pattern of findings across the two prime durations was seen on the N400: at the short prime duration, patients showed a normal priming effect, suggesting that, under these highly automatic conditions, feedforward activation from the prime effectively facilitated semantic processing of the target picture. At the longer prime duration, however, controls showed a larger N400 effect than at the shorter duration, but patients showed a smaller N400 effect. We suggest that, in controls, efficient mapping of perceptual information to the semantic representation of the prime further facilitated semantic processing of the target, but that, in patients, inefficient early perceptual processing of the prime impeded activation of its semantic representation.