

# ERP effects of Thatcher faces under delimited presentation times

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## Abstract

Thatcher faces, which are faces in which the eyes and mouth regions are turned upside-down, are recognized as being severely distorted when presented upright but hardly distinguishable when inverted. Common theories explain this effect by the loss of configural information for inverted faces. We investigated neural correlates of this effect using event related potentials (ERPs). 16 right-handed participants performed yes-no identity decisions for Thatcher or original (familiar) faces, presented for 34 ms or 200 ms in 0°, 90° or 180° orientation. For the occipito-temporal N170 we found (1) strong effects of orientation and (2) increased amplitudes for Thatcher faces, but only at 0° orientation. For later ERP components these effects were additionally modulated by presentation time. Moreover, there were behavioural hints of differential importance of configural and featural processing for short and long presentation times. Microgenetic accounts for explaining these findings will be discussed.