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Facial decoding in schizophrenia is underpinned by basic visual processing impairments

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Abstract

Schizophrenia is associated with a strong deficit in the decoding of emotional facial expression (EFE). Nevertheless, it is still unclear whether this deficit is specific for emotions or due to a more general impairment for any type of facial processing. This study was designed to clarify this issue. Thirty patients suffering from schizophrenia and 30 matched healthy controls performed several tasks evaluating the recognition of both changeable (i.e. eyes orientation and emotions) and stable (i.e. gender, age) facial characteristics. Accuracy and reaction times were recorded. Schizophrenic patients presented a performance deficit (accuracy and reaction times) in the perception of both changeable and stable aspects of faces, without any specific deficit for emotional decoding. Our results demonstrate a generalized face recognition deficit in schizophrenic patients, probably caused by a perceptual deficit in basic visual processing. It seems that the deficit in the decoding of emotional facial expression (EFE) is not a specific deficit of emotion processing, but is at least partly related to a generalized perceptual deficit in lower-level perceptual processing, occurring before the stage of emotion processing, and underlying more complex cognitive dysfunctions. These findings should encourage future investigations to explore the neurophysiologic background of these generalized perceptual deficits, and stimulate a clinical approach focusing on more basic visual processing.

Keywords: schizophrenia, faces, emotion, cognition, face recognition

1. Introduction

Impaired emotional facial expression (EFE) decoding abilities have been repeatedly documented in schizophrenia and play a role in the more globally altered social cognition (Javitt and Freedman, 2015), interpersonal misunderstandings, and inadequate social behaviours (Pinkham and Penn, 2006) related to this pathology (Couture et al., 2006). However, earlier results suggested that schizophrenic
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