NEUROBEHAVIORAL GRAND ROUNDS—INTRODUCTION

The recognition of emotional expression in prosopagnosia: Decoding whole and part faces by Stephan, Breen and Caine

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Acquired disorders of face processing have long played an important role in our theorizing about how the brain encodes and matches faces to memory, because functional deficits in some, but not other aspects of face processing, reveal whether different processes operate independently. One striking dissociation is between the processing of face identity and facial emotion, which suggests that these two forms of information are, to some extent, processed independently. However, such dissociations can be over-interpreted; though identity and emotion processing can dissociate, the two processes could also rely on many common operations. To understand how facial identity and emotion are computed, we need to assess in more detail the nature of their breakdown in patients.

In this paper, Stephan et al. take a patient with problems in both identity and emotion processing and examine the factors that lead to problems in processing facial emotion. The authors contrast emotion judgements made to whole faces and to incomplete faces, where internal parts were obscured. Interestingly, judgements of some emotional expressions improved when incomplete features were shown compared with when whole faces were presented. This result carries several implications. One is that facial emotions can be conveyed by local features and that configural information from whole faces does not necessarily contribute to performance (otherwise how could performance be better with incomplete faces?). A second is that configural information, in whole faces, may actually disrupt performance in some patients (otherwise how could whole faces be worse than incomplete faces?). Similar results to this have previously been noted when some patients make identity judgements (e.g., de Gelder & Rouw, 2000), and they have been interpreted as indicating that configural information is processed but in a 'noisy' manner, so that it disrupts performance. Here the data indicate that this disruption can impact on emotion as well as identity judgement. Thus this paper indicates that both configural information and local features modulate judgements about emotional expressions. Whether these two kinds of information play equal roles in recognizing different emotions is a question waiting future research.

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REFERENCE

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