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ScienceDirect
Cognition 108 (2008) 185–200
COGNITION
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Stereotype priming in face recognition: Interactions between semantic and visual information in face encoding

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Received 5 January 2007; revised 6 March 2008; accepted 11 March 2008

Abstract

The accuracy with which previously unfamiliar faces are recognised is increased by the presentation of a stereotype-congruent occupation label [Klatzky, R. L., Martin, G. L., & Kane, R. A. (1982a). Semantic interpretation effects on memory for faces. *Memory & Cognition, 10*, 195–206; Klatzky, R. L., Martin, G. L., & Kane, R. A. (1982b). Influence of social-category activation on processing of visual information. *Social Cognition, 1*, 95–109]. For example, providing the label 'criminal' both during encoding and test improves recognition for previously unfamiliar faces that look like the stereotypical criminal. Experiments 1 and 2 both replicate this effect and show that the label exerts its influence during the encoding of stereotypical faces and has little influence at test. These findings indicate that semantic information that is congruent with novel stereotypical faces facilitates their encoding.

Keywords: Face recognition; Stereotype; Priming

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doi:10.1016/j.cognition.2008.03.004

1. Introduction

Eyewitness testimony is characterised by memory for faces and events based upon relatively brief opportunity for encoding. Moreover, the faces and events are unlikely to have been encountered in the past and are therefore typically unfamiliar to the eyewitness. It is well established that the conditions under which events are encoded are directly related to the success with which they are subsequently recalled (for a review see Coin & Tiberghein, 1997). In the domain of face processing, encoding conditions have been shown to exert a greater influence on successful recognition than retrieval conditions (c.f., Bruce, 1998).

Winograd (1981) assessed face recognition after participants had made one of nine judgements during the initial encoding of a face. During encoding, participants were instructed to rate faces on one attribute that could either pertain to their physical characteristics (big nose, straight hair, and heavy), or various abstract traits (intelligent, anxious, and friendly), and occupations (actor, businessman, and teacher). Recognition accuracy was poorer when physical judgements were made about the faces (e.g., big nose or straight hair) than when abstract judgements were made (e.g., intelligent or teacher; see also, e.g., Light, Kayra-Stuart, & Hollander, 1979; Mueller, Carlomusto, & Goldstein, 1978).

There are several potential explanations for the different effects of making physical as opposed to abstract judgements about a novel face on the accuracy of subsequent face recognition. For example, the Levels of Processing framework (Craik & Lockhart, 1972) assumes that the more deeply an item is processed, the better it is recalled. Within this framework, making a physical judgement about a face during encoding should result in poorer subsequent performance than making an abstract judgement. However, other research has shown that selecting the most distinctive feature in a face during encoding (a surface judgement) results in similar recognition accuracy to making an abstract judgement during encoding (Daw & Parkin, 1981; Deffenbacher, Leu, & Brown, 1981). This finding suggests that, at least for the case of faces, the influence of abstract judgements on recognition might not simply reflect the depth to which they are processed. In contrast to the depth of processing analysis, Courtois and Mueller (1979) argued that the critical factor determining face recognition accuracy was the *number* of facial features assessed during encoding. According to this view, making either a distinctive feature judgement or an abstract judgement results in a greater number of features being processed during encoding and it is this fact that supports greater recognition accuracy. However, there is no direct evidence that making personality or occupation judgements about a face either requires or results in a greater number of features being processed than does making a gender classification (Kerr & Winograd, 1982). In fact, the evidence concerning the reaction times to make these differing judgements is inconsistent: Bloom and Mudd (1991) found that "honesty" judgements took longer than gender classification, whereas Daw and Parkin (1981) found the opposite pattern of results.

It is clear that making an abstract judgement about a face increases, in some way, the readiness with which it is subsequently recognised. This kind of influence