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Alexithymia: A Right Hemisphere Dysfunction Specific to Recognition of Certain Facial Expressions?

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The most prominent features of alexithymic people are a demonstrated reduction in the ability to identify and to describe their own feelings. In recent years, these characteristics have been related to a functional disturbance of the right cerebral hemisphere. This should result in a number of other observable effects. The present study investigated whether high and low alexithymics from a nonclinical population differed in the degree of leftward perceptual bias on chimeric tasks. The chimeras consisted of pictures of faces made of up conjoined emotive and nonemotive halves as well as asymmetrically distributed stars. Differences between high and low alexithymics in the recognition of facial expressions of emotion of whole faces were also examined. High scorers on a test of alexithymia showed overall less leftward perceptual bias than low scorers on the chimeric tasks and poorer recognition of facial expressions of whole faces. There was little evidence that the reduced left bias was specific to processing of emotional expressions only, or that differences in processing of facial expressions were emotion specific. These results are argued to support the right hemisphere dysfunction model of alexithymia.

Alexithymic people are characterized by the difficulties they have in identifying and describing feelings and in distinguishing feelings and bodily sensations. Although ''alexithymia'' was initially used as a syndrome for clinical patients with psychosomatic disorders, more recently, alexithymic characteristics have been shown to be prominent in some people in nonclinical populations. Within both clinical and nonclinical populations, alexithymia is viewed as a continuous personality variable, with people differing in their ability to identify and describe their feelings (e.g., Taylor & Bagby, 1988).

Most etiological models of alexithymia have proposed a dysfunction of the right hemisphere to account for the characteristic pattern which is observed (e.g., Buchanan, Waterhouse & West, 1980; Parker, Taylor, & Bagby,

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1992; Sifneos, 1988). This proposal is based on the numerous studies which have suggested that, in normal right-handed people, the right hemisphere is more involved than the left in the processing of emotional information (e.g., Blonder, Bowers, & Heilman, 1991; Heilman, Watson, & Bowers, 1983; Ley & Bryden, 1979). One type of study to test this in a normal population has used the chimeric free-vision facial expression task (e.g., Levy, Heller, Banich, & Burton, 1983; Wirsen, Klinteberg, Levander, & Schalling, 1990). This task presents people with conjoined half-faces consisting of expressive and neutral halves. Several investigators have suggested that results from chimeric tasks demonstrate that the right hemisphere is involved in recognition of facial expressions (e.g., Moreno, Borod, Welkowitz, & Alpert, 1990). It is found that normal right-handed subjects choose the chimeric face with the emotive half on the left as being more expressive than its mirror image; a leftward bias reflects predominantly right hemisphere processing. In these chimeric face studies it can be argued, however, that processing of emotion and more general visuo-spatial processing may be confounded. Luh, Rueckert, and Levy (1991) attempted to separate these two factors and found a leftward perceptual bias for both emotive and nonemotive chimeric stimuli. They concluded that this result reflects a processing bias for the left side of visual space, including a left bias for the processing of facial expressions.

In contrast to this proposed general role of the right hemisphere for visual processing, some investigators have suggested that the right hemisphere has a somewhat specific role in emotion recognition, being involved primarily in processing negative emotions (e.g., Natale, Gur, & Gur, 1983; Sackeim & Gur, 1978). The evidence for this is not particularly strong, however (Christman & Hackworth, 1993).

The right hemisphere has been implicated in models of alexithymia on the basis of results from a number of different types of studies. Observation of clinical populations has suggested that patients with right hemisphere damage may show alexithymic characteristics and especially deficits in affect recognition (Sifneos, 1988). Less direct evidence comes from a study conducted by Parker, Taylor, and Bagby (1992). They measured the conjugate lateral eye movements of a nonclinical population who varied on scores on a standardized alexithymia test and found that participants who had higher alexithymia scores showed mostly rightward eye movements. They interpreted this as showing a relationship between hemispheric arousal and alexithymia. Berenbaum and Prince (1994) studied the way in which nonclinical people with high and low alexithymia scores interpreted emotion-relevant information. Participants at the extreme ends of the scale differed, in the predicted direction, in the degree of left bias for chimeric happy/neutral faces.

Several studies have shown that individuals with high levels of alexithymia are poorer, in general, than those with low levels in their ability to recognize emotional states in posed facial expressions of emotion (Parker,