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Affective Theory of Mind May Be Unimpaired in People with Aphasia

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Introduction

Recent research in people with left hemisphere damage has shown that theory of mind (ToM) may be independent of grammar (Apperly, Samson, Caroll, Hussain, & Humphreys, 2006; Ramachandra & Schneider, 2011). However, these studies have used ToM tasks that are cognitively demanding. Reading the mind in the eyes test developed by Baron-Cohen and colleagues (1997) is cognitively less complex, and measures "affective" ToM. There are no studies to date that have investigated the affective ToM processing in people with aphasia. So, the primary goal of the present study was to determine the existence of affective ToM deficits in people with aphasia, and also to investigate any correlations between these deficits and the level of language impairment.

Some researchers have argued for the existence of two separate neural networks for processing basic emotions and ToM. The second aim of the study was to determine if individuals with aphasia have trouble inferring the emotional states of others by looking at the eye region of the face (impaired ToM system) but still have intact abilities in understanding the basic human emotions expressed through faces (intact emotion processing system).

Methods

Six individuals with aphasia (mean age = 67.6 years) were given a language task, reading the mind in the eyes test, a measure of affective ToM, which required participants to infer complex emotions by looking at the eye region of the face, and a basic test of emotion recognition in faces. The face emotion recognition and the eyes tests were also administered on six healthy age matched controls (mean age = 66.33 years).

Results and Discussion

The results of the study indicated that there was no significant difference between the controls and people with aphasia in the affective ToM task. We also found that there was no correlation between the level of language impairment and the performance level on the ToM task. These findings are in line with previous investigations, which have suggested that ToM is independent of language (Apperly et al., 2006; Ramachandra & Schneider, 2011). This is, however, the first study which indicates that affective ToM may be unimpaired in people with aphasia, and that it is not influenced by the degree of language impairment. We were however, unable to find evidence for existence of separate neural networks for processing ToM and basic emotions because both these skills were unimpaired in people with aphasia.
References

