

A face is more than the sum of its parts

February 10 2010

You stop at a shop window and wonder why someone inside is blatantly staring at you -- until you realize this person is you. Scenarios like this are impossible for us to imagine, but quite common for sufferers of acquired prosopagnosia (AP), a condition which can occur after brain damage, hindering the ability to recognize faces. In a new study published in the March 2010 issue of Elsevier's *Cortex*, researchers have found that the condition is linked to an inability to process faces as a whole, or holistically.

Meike Ramon and Dr Bruno Rossion from the Université de Louvain in Belgium have been investigating the case of PS, a 59 year-old kindergarten teacher and one of the few cases of pure acquired prosopagnosia in the world. She has been suffering from AP since having sustained closed head injury in 1992. Past accounts of the condition have focused on AP sufferers' difficulty in processing the eye-region of a face, or perceiving relative distances between facial features. In their new study, Ramon and Rossion found that both impairments are linked to a common cause: the inability to process [faces](#) as a whole.

Participants in the study were asked to match images of faces, which had been manipulated to differ either in a single feature or the distance between two features. As expected, the patient PS had difficulty in the matching task when changes to the faces occurred randomly. Strikingly, however, when told which feature had been changed (e.g. distance between the eyes), her performance profile paralleled that of healthy subjects.

The findings suggest that AP patients are unable to process different elements of the face in parallel and instead "apply a locally restricted, serial processing style, which is particularly inefficient for certain types of information." Knowing which information to look for makes this strategy relatively more efficient. While this may not help AP patients in real-life situations, "it does however shed light on what makes normal face recognition so overwhelmingly efficient: our capacity to simultaneously integrate the multiple facial elements into a unique representation", commented Ramon.

More information: *Cortex* is available online at www.sciencedirect.com/science/journal/00109452

Provided by Elsevier

Citation: A face is more than the sum of its parts (2010, February 10) retrieved 19 April 2024 from <https://medicalxpress.com/news/2010-02-sum.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--