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Brain Detects Happiness Faster Than Sadness

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The study by Spanish and Brazilian researchers has revealed that people make value judgments about other individuals based on their facial expressions, and are able to detect the expressions of happiness and surprise faster than those of sadness or fear. However, whether this impression is correct or not, is another question.

An international group of experts has carried out a thorough study into how human beings process emotional expressions. During their research, the investigators examined the pattern of cerebral asymmetry in the perception of positive and negative facial signals. They worked with 80 psychology students - 65 female and 15 male - in attempt to find out what are the differences between their cerebral hemispheres, and used the "divided visual field" technique, which is based on the anatomical properties of the visual system.

The results revealed that human brains get a first impression of people's overriding social signals after glancing at their faces for only 100 milliseconds (0.1 seconds). The investigators also found that the right hemisphere of the brain performs better when it comes to processing emotions.

"However, this advantage appears to be more evident when it comes to processing happy and surprised faces than sad or frightened ones", said J. Antonio Aznar-Casanova, one of the authors of the study and a principal researcher at the University of Barcelona (UB). Aznar-Casanova added that positive expressions, or expressions of approach, are being perceived much faster and in a more precise way, when compared to negative, or withdrawal expressions. Therefore, happiness and surprise are processed more quickly than sadness and fear, the researcher stressed out.

This results of the new research are similar of those from the previous studies, which had found that there are certain asymmetries in the way the brain processes emotions. In addition, the new findings enrich the international debate in cognitive-emotional neuroscience in terms of how to determine the precise way in which human beings process these facial expressions. According to the older theory, there is the dominance in the right hemisphere when it comes to the processing of

emotions, while the other ones state that the processing is based on the approach-withdrawal hypothesis, which says that the pattern of cerebral asymmetry is dependent on the emotion in question. In other words, that each hemisphere is better at processing particular emotions.

"Today there is scientific evidence in favor of both these theories, but there is a certain consensus in favor of the lateralisation of emotional processing predicted by the approach-withdrawal hypothesis," Aznar-Casanova said in the conclusion.

The findings of the study are published in the latest issue of the journal *Laterality*.