

Our brains scan faces and tag them friend or foe, study shows

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By Shoshanna Solomon



Illustrative close up of woman's eye (iStock)

Without realizing it, whenever we encounter other people, whether in the street or at a party, our brain unconsciously processes the faces it sees, scanning them and categorizing them as threatening or trustworthy.

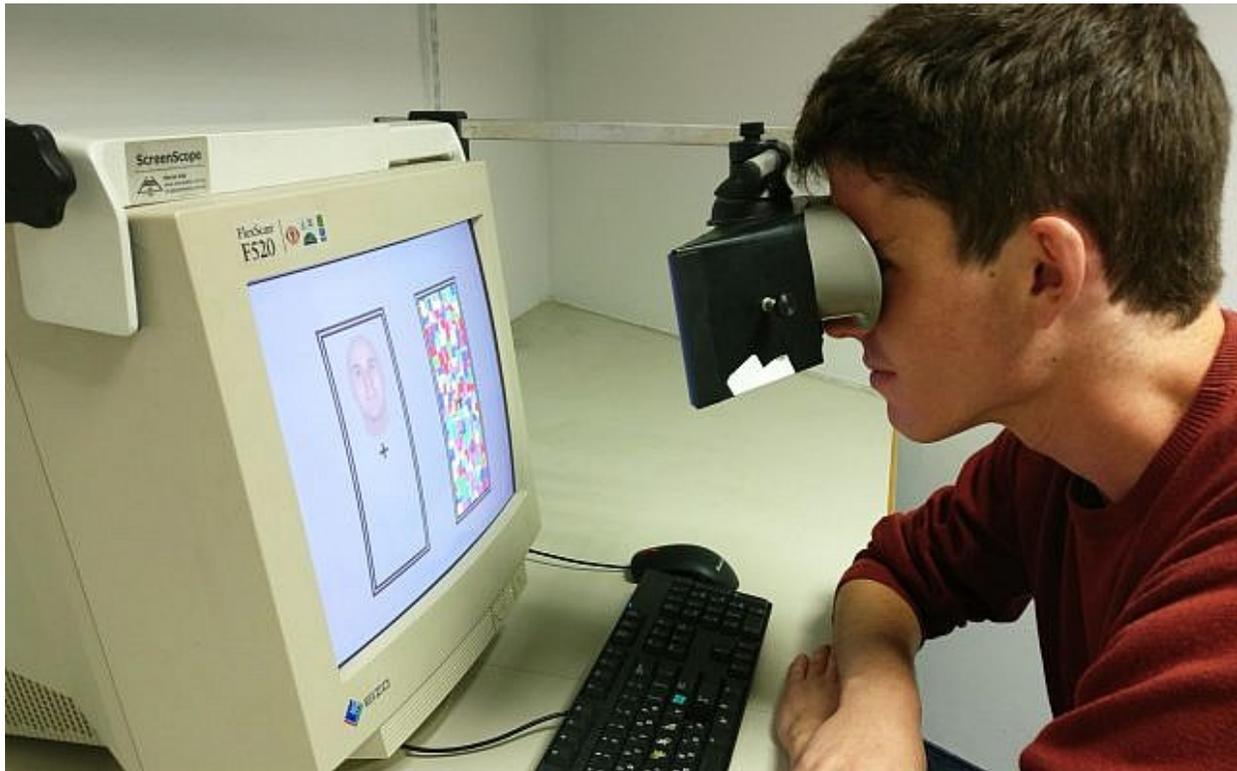
This is what a group of researchers led by Professor Ran Hassin of the Hebrew University of Jerusalem has found, in a new study published this week in the journal *Nature Human Behavior*. They are now setting out to find out why that is. How does our brain determine which faces it “chooses” to see and which it allows to fade into the background? And can we influence how our brain perceives other people?



Illustrative image of city life (estherpoon; iStock by Getty Images)

The study describes how the unconscious mind processes human faces, and pinpoints the two types of faces that the brain chooses to consciously see: faces associated with dominance and threat and, to a lesser degree, faces associated with trustworthiness.

“Previous research has already shown us what characteristics make a face more threatening or more trustworthy,” Hassin said in a phone interview. “Faces with bigger eyes are perceived as more trustworthy. More feminine features in a face are less threatening.”



Participants in the Hebrew University's study were shown images of faces and geometric shapes (Courtesy Hebrew University).

Hassin and his research team conducted six experiments in which 174 participants were shown 300 sets of rapidly changing images. One eye was exposed to images of human faces, and the other to geometric shapes. The participants were then asked to press a computer key as soon as they saw a human face.

With the rapid onslaught of stimuli, it took the brain a few seconds to understand that it was seeing a face and then to transfer the image to the conscious brain for processing. The researchers observed that the facial characteristics that were most quickly registered by participants were the ones shown by previous studies to indicate power and dominance, such as masculinity and wideness.

“Walking around the world our unconscious minds are faced with a tremendous task: decide which stimuli ‘deserve’ conscious noticing and which do not,” Hassin said in a statement issued this week by the Hebrew University of Jerusalem.

“The mental algorithm we discovered deeply prioritizes dominance and potential threat,” he noted. “We literally saw the speed with which these images broke through the unconscious mind and registered on a conscious-level with each key press.”

“Why does our brain tend to perceive threat over other characteristics? One would assume it is because it wants a person to avoid threatening situations, but there is no data to show that yet. We are working to see if this is true,” Hassin said in the interview.



Illustrative image of a scary situation (leolintang; iStock by Getty Images)

“These processes are dynamic and often based on personal motivation,” he said. “Hypothetically, if you’re looking for a romantic partner, your brain will ‘see’ people differently than if you’re already in a relationship.”

Unconsciously, your brain will “prioritize” faces of potential partners and de-emphasize other faces. Likewise, the same might be true for other motivations, such as avoiding danger. Your eyes might pick out certain “menacing” faces from a crowd and avoid them.

For the past decade, Hassin has focused his research on the human unconscious, specifically decision making, memory, motivation and the forming of opinions. “This study gives insight into the unconscious processes that shape our consciousness,” Hassin said.

A brain algorithm that processes the information

“There is an algorithm in our brain that processes the information,” he said. “If we figure out how to play with this mental algorithm and how to track it then maybe we can also change it, so as to condition the mind. But we haven’t figured that out yet.”

Hassin hopes these findings can pave the way toward a better understanding of autism, PTSD and other mental disorders like depression. “It might be possible to train and untrain people from perceiving certain facial dimensions.”

This could be useful for example in helping people with depression or autism, he explained.

“Depressed people tend to see other depressed faces, and that plays a role in keeping the person depressed,” he said. “If you can train the brain of the people not to just see the depressed faces, that could help, but that is still years down the road of research.”



Illustrative image of a man leaning against a wall (tommaso79, iStock by Getty Images)

Similarly, people with autism find it hard to read facial cues that would help them figure out if the person talking to them is happy or angry. “So, it would be helpful if you can change the algorithm to make the cues less subtle to the person,” he said. “But that is still science fiction, unfortunately. But it would be amazing if we got there.”

The study was undertaken by Hassin of the Hebrew University of Jerusalem’s (HUJI) James Marshall Chair in Social Psychology and a member of its Federmann Center for the Study of Rationality, along with HUJI graduate student Yaniv Abir and colleagues Professor Alexander Todorov of Princeton University and Professor Ron Dotsch, formerly of Utrecht University in the Netherlands.

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