

Body language, not facial expressions, broadcasts what's happening to us

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Expressions numbered 1,4,6 show tennis player's face on losing a point; expressions numbered 2,3,5 show a player after winning a point). Tests show that those looking at facial expressions alone cannot determine what the true emotion is. Credit: Reuters: Used with permission

If you think that you can judge by examining someone's facial expressions if he has just hit the jackpot in the lottery or lost everything in the stock market—think again. Researchers at the Hebrew University of Jerusalem and at New York University and Princeton University have discovered that—despite what leading theoretical models and conventional wisdom might indicate—it just doesn't work that way.

Rather, they found that [body](#) language provides a better cue in trying to judge whether an observed subject has undergone strong positive or [negative experiences](#).

In a study published this week in the journal *Science*, the researchers present data showing that viewers in test groups were baffled when shown photographs of people who were undergoing real-life, highly intense positive and negative experiences. When the viewers were asked to judge the emotional valences of the faces they were shown (that is, the positivity or negativity of the faces), their guesses fell within the realm of chance.

The study was led by Dr. Hillel Aviezer of the Psychology Department of the Hebrew University, together with Dr. Yaacov Trope of New York University and Dr. Alexander Todorov of Princeton University.

In setting out to test the perception of highly intense faces, the researchers presented test groups with photos of dozens of highly intense [facial expressions](#) in a variety of real-life emotional situations. For example, in one study they compared [emotional expressions](#) of professional tennis players winning or losing a point. These pictures are ideal because the stakes in such games are extremely high from an economic and prestige perspective.

To pinpoint how people recognize such images, Aviezer and his colleagues showed different versions of the pictures to three groups of

participants: 1) the full picture with the face and body; 2) the body with the face removed; and 3) the face with the body removed. Remarkably, participants could easily tell apart the losers from winners when they rated the full picture or the body alone, but they were at chance level when rating the face alone.

Ironically, the participants who viewed the full image (face and body) were convinced that it was the face that revealed the emotional impact, not the body. The authors named this effect "illusory valence," reflecting the fact that participants said they saw clear valence (that is, either positive or negative emotion) in what was objectively a non-diagnostic face.

In an additional study, Aviezer and his collaborators asked viewers to examine a more broad range of real-life intense faces. These included intense positive situations, such as joy (seeing one's house after a lavish makeover), pleasure (experiencing an orgasm), and victory (winning a critical tennis point), as well as negative situations, such as grief (reacting at a funeral), pain (undergoing a nipple/naval piercing), and defeat (losing a critical tennis point).

Again, viewers were unable to tell apart the faces occurring in positive vs. negative situations. To further demonstrate how ambiguous these intense faces are, the researchers "planted" faces on bodies expressing positive or negative emotion. Sure enough, the emotional valence of the same face on different bodies was determined by the body, flipping from positive to negative depending on the body with which they appeared.

"These results show that when emotions become extremely intense, the difference between positive and negative facial expression blurs," says Aviezer. "The findings, challenge classic behavioral models in neuroscience, social psychology and economics, in which the distinct

poles of positive and negative valence do not converge."

Aviezer adds: "From a practical-clinical perspective, the results may help researchers understand how body/face expressions interact during emotional situations. For example, individuals with autism may fail to recognize facial expressions, but perhaps if trained to process important body cues, their performance may significantly improve."

Provided by Hebrew University of Jerusalem

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