

# Believing is seeing, when it comes to emotions

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Researchers showed experimental participants still photographs of faces computer-morphed to express ambiguous emotion and instructed them to think of these faces as either angry or happy. Once an ambiguous look was interpreted, it biased subsequent perception. Credit: Courtesy of Piotr Winkielman, UC San Diego.

(PhysOrg.com) -- Folk wisdom usually has it that "seeing is believing," but new research suggests that "believing is seeing," too - at least when it comes to perceiving other people's emotions.

An international team of [psychologists](#) from the United States, New Zealand and France has found that the way we initially think about the emotions of others biases our subsequent perception (and memory) of their [facial expressions](#). So once we interpret an ambiguous or neutral look as angry or happy, we later remember and actually see it as such.

The study, published in the September issue of the journal [Psychological](#)

[Science](#), "addresses the age-old question: 'Do we see reality as it is, or is what we see influenced by our preconceptions?'" said coauthor Piotr Winkielman, professor of psychology at the University of California, San Diego. "Our findings indicate that what we think has a noticeable effect on our perceptions."

"We imagine our emotional expressions as unambiguous ways of communicating how we're feeling," said coauthor Jamin Halberstadt, of the University of Otago in New Zealand, "but in real social interactions, facial expressions are blends of multiple emotions - they are open to interpretation. This means that two people can have different recollections about the same emotional episode, yet both be correct about what they 'saw.' So when my wife remembers my smirk as cynicism, she is right: her explanation of the expression at the time biased her perception of it. But it is also true that, had she explained my expression as empathy, I wouldn't be sleeping on the couch."



Photo courtesy of Piotr Winkielman, UC San Diego

"It's a paradox," Halberstadt added. "The more we seek meaning in other emotions, the less accurate we are in remembering them."

The researchers point out that implications of the results go beyond everyday interpersonal misunderstandings - especially for those who have persistent or dysfunctional ways of understanding emotions, such as socially anxious or traumatized individuals. For example, the socially anxious have negative interpretations of others' reactions that may permanently color their perceptions of feelings and intentions, perpetuating their erroneous beliefs even in the face of evidence to the contrary. Other applications of the findings include eyewitness memory: A witness to a violent crime, for example, may attribute malice to a perpetrator - an impression which, according to the researchers, will influence memory for the perpetrator's face and emotional expression.

The researchers showed experimental participants still photographs of faces computer-morphed to express ambiguous emotion and instructed them to think of these faces as either angry or happy. Participants then watched movies of the faces slowly changing expression, from angry to happy, and were asked to find the photograph they had originally seen. People's initial interpretations influenced their memories: Faces initially interpreted as angry were remembered as expressing more anger than faces initially interpreted as happy.

Even more interesting, the ambiguous faces were also perceived and reacted to differently. By measuring subtle electrical signals coming from the muscles that control facial expressions, the researchers discovered that the participants imitated - on their own faces - the previously interpreted emotion when viewing the ambiguous faces again. In other words, when viewing a facial expression they had once thought about as angry, people expressed more anger themselves than did people viewing the same face if they had initially interpreted it as happy.

Because it is largely automatic, the researchers write, such facial mimicry reflects how the ambiguous face is perceived, revealing that participants were literally seeing different expressions.

"The novel finding here," said Winkielman, of UC San Diego, "is that our body is the interface: The place where thoughts and perceptions meet. It supports a growing area of research on 'embodied cognition' and 'embodied emotion.' Our corporeal self is intimately intertwined with how - and what - we think and feel."

[>> Watch a video of facial expressions changing](#)

Source: University of California - San Diego ([news](#) : [web](#))

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