Science & Technology

What Your Facial Features Say About You

Columbia psychologists unmask the perceptual biases that shape our impressions of one another.

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Do you have wide eyes, plump cheeks, and lips that turn upward even when you're not smiling? If so, strangers likely perceive you as kind, trustworthy, generous, and approachable. Or maybe you have angular features, a highly symmetrical face, and good skin. Then there's a good chance that others initially regard you as smart, successful, reliable, and outgoing.

Subconsciously, we all make snap judgments about people based on their facial features. And research has shown that these prejudices about someone's character and disposition often persist even after we learn more about the person. This bias can have serious social ramifications. For example, studies have found that people with certain conventionally pleasing features are more likely to get hired for leadership positions, succeed in politics, and even be acquitted of crimes.

So, what are the origins of "facial stereotypes"? And what, if anything, can be done to rid ourselves of them?

A team of psychologists led by Jonathan B. Freeman, the director of Columbia's Social Cognitive and Neural Sciences Lab, has been exploring these questions for years, using a variety of human behavioral and neuroimaging experiments. His team recently achieved a series of important breakthroughs, revealing how our social attitudes influence these first impressions and developing a simple computer-based exercise that can help us perceive others more objectively.

"Psychologists have long thought that our responses to human faces are so deeply rooted in our evolutionary biology as to be unalterable, but we've shown that isn't true," says Freeman, who is an associate professor of psychology. "As it turns out, the cognitive associations that we draw between facial features and personality traits can be tweaked and dismantled, so that we don't rely on them in situations where they can be harmful."

When meeting new people, Freeman says, we project positive traits onto those whose facial features resemble expressions of joy or contentment (upturned lips and arched eyebrows, say), while regarding more apprehensively those whose features mimic expressions of anger (like narrowed eyes and thin lips). Freeman says that this is likely an evolutionary artifact from a time when our prehistoric ancestors had to be hyper-attuned to visual clues about others' temperaments and intentions in order to survive. "Presumably, early humans found themselves in lots of situations where they had to instantly decide: Is this a friend or foe? Should I approach them or flee?" he says. "The ability to quickly determine a stranger's emotional state would have been critical — so much so, it seems, that we've evolved strong reactions to anyone whose facial features even *resemble* happy or angry expressions."

Psychologists have a term to describe our proclivity to read too much meaning into others' faces: they call it "face overgeneralization," and they say that the

phenomenon is also on display in our tendency to respond positively to baby-faced adults (who trigger our impulse to protect and nurture) and to feel attracted to people whose features are symmetrical (a drive that once might have ensured that humans choose mates without serious genetic abnormalities).

Traditionally, scientists have viewed facial stereotypes as genetically hardwired, universal, and fixed, but Freeman and his colleagues have been chipping away at this idea. They have discovered that people in different cultures perceive faces in distinct ways (Americans assume that people with sad-looking faces are aggressive, while many Argentinians regard them as caring, for example), and that even within cultures people's responses to facial features vary depending on their attitudes toward race, gender, and other social factors. In addition, the researchers have found that brain regions responsible for higher cognitive functions, such as maintaining social beliefs, communicate with the brain's visual-processing centers in real time whenever we look at human faces, influencing what we think we see.

"Any racial or gender stereotypes that you've internalized have the potential to shape your visual perceptions," Freeman says. "So, for example, you may perceive a man's face as more angry-looking than it really is or a woman's face as more joyful."

Inspired by the malleability of human facial perception, Freeman and his colleagues recently set out to see if facial stereotypes might be mitigated in settings where they have pernicious consequences, including courtrooms. Previous research had suggested that convicted murderers are more likely to be sentenced to death if they have downturned lips, heavy brows, and other disfavored facial features, and the Columbia researchers confirmed this by conducting a large-scale analysis of photographs of US death-row inmates and holding mock trials in which study participants played the roles of jurors. "We found that jurors are more likely to recommend the death sentence for defendants who are judged to be untrustworthy-looking, based simply on their photos," says Freeman.

But the psychologists then repeated the experiment with a twist: before hearing a case, jurors had to complete a computer task that Freeman's team had developed. The task consisted of viewing images of stereotypically untrustworthy faces accompanied by brief descriptions of noble behaviors like "volunteers at a homeless shelter," or "returned $20 to someone who dropped it." Conversely, images of trustworthy faces were paired with reports of contemptible actions like "got a promotion by lying about coworkers."

“Remarkably, this eliminated the jurors’ biases,” Freeman says. “It managed to unpair the mental associations that they’d drawn between certain facial features and personality traits, allowing them to see each defendant more clearly as an individual.”

The computer task that the Columbia team created is the first anti-bias intervention ever to successfully combat facial stereotypes. The key to its effectiveness, Freeman believes, is that it influences people subconsciously, as users are not told the purpose of the exercise beforehand.

“Other researchers had previously tried to tackle facial-stereotype biases by explicitly nudging people to recognize and overcome their own biases, but that didn’t work,” Freeman says. “It might be that in order to combat implicit visually based biases that are operating subconsciously, you need an intervention that similarly flies beneath the radar and modifies a person’s underlying visual associations without them realizing it.”

Further research will be needed before the Columbia team’s intervention is ready for implementation in the real world. Currently, its benefits likely last for only a few hours. And the researchers have, to date, only assessed its impact on people’s perceptions of white men’s faces. Freeman says that his team is now using big-data techniques to develop more-sophisticated versions of the training module that account for the race and gender of both the face and the viewer.

“We could see this intervention eventually being used in the criminal-justice system and in any other settings where people are routinely being discriminated against because of their physical appearance,” he says, noting that large companies could easily incorporate such training into their hiring and promotion initiatives. “Many companies have gotten increasingly serious about eliminating insidious forms of bias in the workplace. Why should facial stereotyping still be acceptable?”

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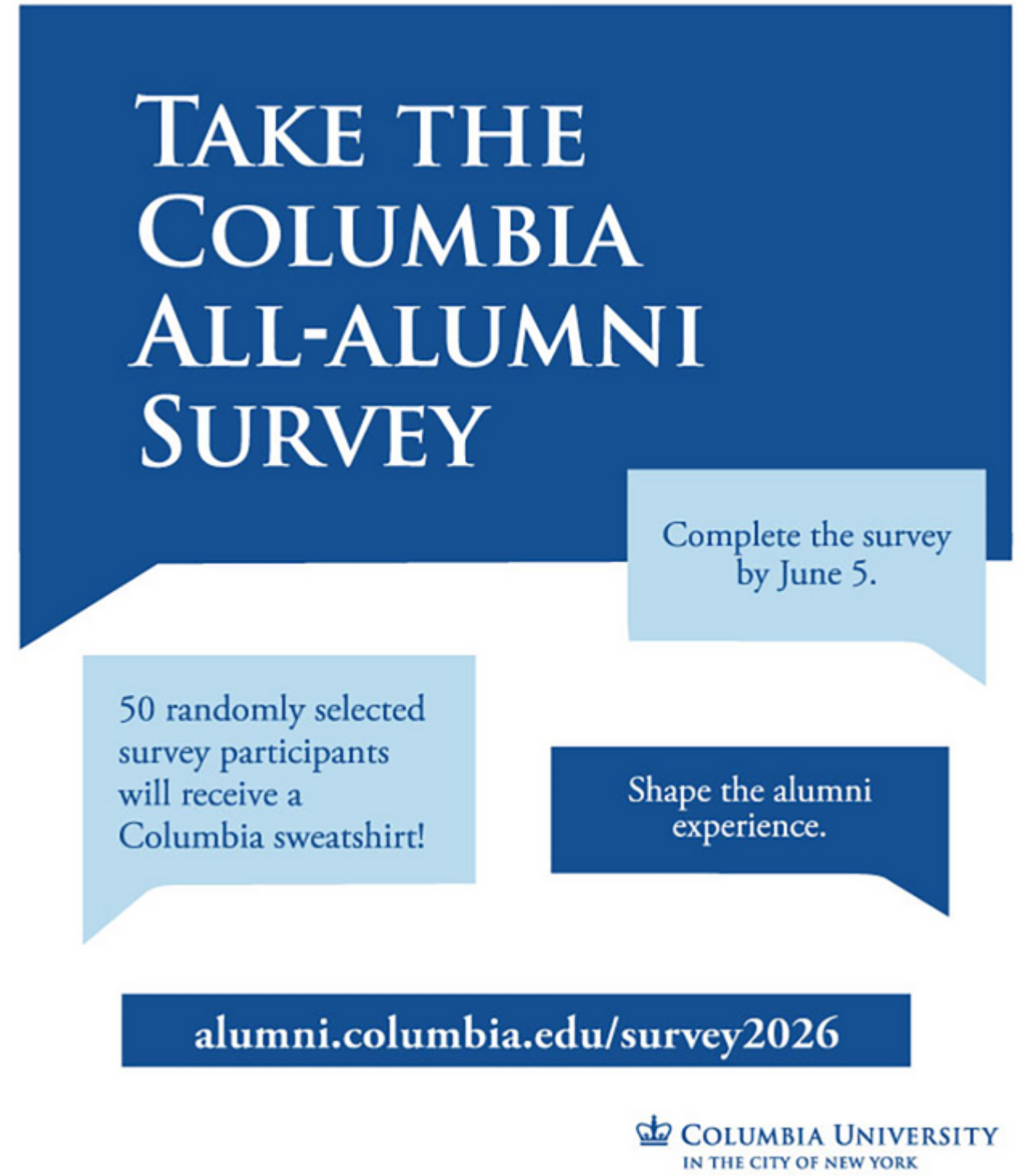

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