

Making Sense of Ambiguous Faces

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We all use stereotypes every day, whether we like it or not. It's how we sort an impossibly complex world into manageable categories: man, woman, Italian, Chinese, lawyer, engineer. Stereotypes can be unfair and hurtful to many people, but the power of stereotyping is undeniable.

But what exactly is going on in the mind when we stereotype someone? Is the process instantaneous and automatic, or do we deliberate over traits and categories before making judgments? A new study in *Psychological Science*, a journal of the Association for Psychological Science

Tufts University psychologists Jonathan Freeman and Nalini Ambady used many common stereotypes, including gender stereotypes, to explore a new theory about the cognitive mechanics underlying caricatures. The researchers morphed photos of men and women into amalgams of male and female traits, some more ambiguous than others. Then they used an innovative lab technique to explore the cognitive processing of these faces: Instead of scanning their brains, they tracked their hand movements. They flashed the photographs on a screen, and instructed the volunteers to move a mouse rapidly toward one of two adjectives—for example, “aggressive” and “caring”—in opposite corners of the screen. The psychologists tracked the computer mouse movements to see how quickly and directly they categorized each face by stereotypical traits.

The idea here is that the hands have a mind of their own, in the sense that movements reflect the mind's hesitation and conflict. In this study, the hand movements gave the researchers insight into how fast the brain processed a stereotype. An instantaneous stereotype would be a straight line from the starting point to one of the two adjectives—male, therefore aggressive, no hesitation. Surprisingly, there were no straight lines. Instead the movements appear as curves, suggesting some hesitation and deliberation in each judgment.

The results also show that the more ambiguous the face was, the more curved the path to judgment. That is, a male face with female traits might ultimately be judged as male and therefore aggressive, but not before the volunteer's hand was tugged a bit toward the alternative stereotype of caring female. It's as if the perceived gender ambiguity triggers a cognitive “competition” between incomplete and contradictory stereotypes, which persists until the mind settles on one or the other.

Even though the cognitive ambiguity is active only for an instant during the stereotyping process, those few seconds of contemplating life's ambiguity may undermine our mind's rigid categories—and have lasting effects on social judgments and behavior way down the line.