



RESEARCH & IDEAS

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## Researchers analyze how individuals recognize faces

BY ROBERT PATRICK VAN TOOKE | STAFF

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UC Berkeley researchers conducted a study analyzing how humans depict facial features that was published Oct. 2, shedding light on a brain mechanism that allows individuals to recognize faces.

Through experiments analyzing facial recognition, campus graduate student Alina Liberman, associate professor of psychology David Whitney and alumnus Jason Fischer confirmed that the brain contains a “continuity field” mechanism that allows humans to view objects and faces with a continuously stable perception.

Human perception shifts constantly because of changes in lighting, perspective, movement and more. The mechanism reduces the ability to detect these differences, instead allowing individuals to use memory to adjust to physical changes. This makes visual recognition easier and more fluid.

Fischer gave the example that if a person were strolling with a friend, and overhead trees cast shadows over the friend’s face, it would look different from one moment to another. Yet, because individuals have this mechanism, regardless of how the friend’s face changes, the friend is still recognizable.

“Without this mechanism, if we were talking to our friend and they turned their head or put on a hat, they might look like a totally different person,” Liberman said in an email.

Liberman, the lead author of the study, said the research was conducted to see if the continuity field exists for faces, which are “visually rich and complex.”

The researchers held four experiments with 12 participants. In each experiment, individuals viewed hundreds of faces on a computer screen. After being shown a particular face, the participant looked through a group of similar faces and picked the one that corresponded most to the original face. Each experiment tested for different variables, including viewpoint and the time participants were given to view each face.

They found that participants often picked faces that were a combination of two faces they were shown in the last five to 10 seconds, instead of accurately matching the original face. This demonstrated the existence of the mechanism for faces, researchers said.

“Face recognition is a fundamental aspect of human perception, so it’s really fascinating to find that something that we’re really good at can be wrong,” Liberman said.

Richard Ivry, a campus professor of psychology who was not involved in the study, said the experiments are clever and unique because they help demonstrate humans’ ability to perceive — a fundamental feature of the brain.

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“What we perceive doesn’t match what we see,” Ivry said. “Our brains expect things to remain constant. Our minds put together a coherent story.”

Researchers plan to continue experiments and further characterize the continuity field. In the long term, they hope to analyze what would happen if the brain did not have this mechanism and what the visual experience would be without it.

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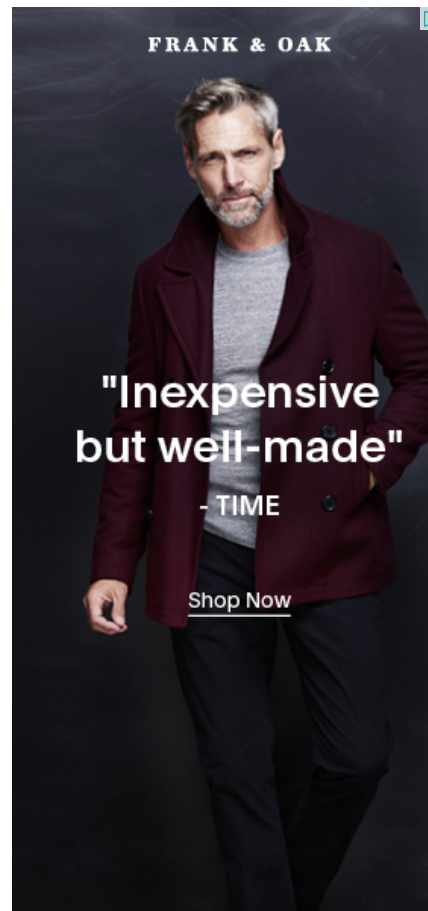
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