New study sheds new light on mind-brain relationship

July 20 2015

A new Dartmouth study sheds light on how the mind and brain work together to visualize the world.

The findings show how the brain encodes conceptual information extracted from visual stimuli: whereas stimulus strength, such as contrast, controls overall neural activity amplitudes, activity patterns across populations of neurons underlie the conceptual representation of object category.

"Mind-and-brain relation is a fundamental topic in philosophical debate as well as scientific research," says senior author Ming Meng, an assistant professor of Psychological and Brain Sciences who investigates human face perception and other ways in which the brain organizes the visual world into meaningful entities. "Brain encoding of a concept—for example - 'grandma'—may correspond to either a vivid colorful picture or a faded grayscale picture of grandma. Our study suggests object category-specific information and non-specific visual features are encoded in complementary but qualitatively disassociated ways, providing valuable insights to understand the mind-and-brain relation."

The study appears in the journal *NeuroImage*.

More information: www.ncbi.nlm.nih.gov/pubmed/25869859

Provided by Dartmouth College