

Study may help explain cultural differences in forming memory

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Angela Gutchess near the Blue Mosque in Istanbul

(PhysOrg.com) -- People naturally sort words and objects into categories, a key process in forming memory. But when it comes to how things are mentally organized, cultures dramatically differ in their strategies.

For example, while Western cultures might tend to pair a squirrel with a raccoon because they're both animals, Eastern cultures might pair a squirrel with nut because squirrels eat nuts.

Angela Gutchess, assistant professor of psychology and the head of the Aging, Culture and Cognition Laboratory, set out to explore these differences and what we can learn from them.

Why?

"These lenses affect what information is encoded into [memory](#), as well as how those memories are organized" to produce accurate, as well as inaccurate, retrieval of information from memory, Gutchess says.

Recent evidence from her colleagues at the University of Michigan reveals that people from Western cultures tend to focus on objects and categories, whereas people from Eastern cultures tend to focus more on contextual details and similarities and sort by functional relationships - pairing the squirrel with nut, for example.

To broaden the research that her lab has done at Brandeis, Gutchess spent a semester in Turkey on a Fulbright scholarship. She and her collaborators at Boğaziçi University in Istanbul analyzed patterns of errors in memory to learn which elements of information processing may differ systematically between cultures.

"We're looking at memory errors because that gives you more of an opportunity to show the use of strategies and how people are sorting information relating things to each other," Gutchess says.

Understanding this is important if people are to appreciate diverse viewpoints and maintain harmony in business and interpersonal settings, especially as society becomes more multicultural and globally integrated, she says, adding that this information could also potentially be of use in improving teaching methods.

Research into cultural sorting has primarily compared China, Japan and Korea to the United States and Canada. But Gutchess says many people, herself included, feel that such a stark dichotomy is mistaken. For this reason, Gutchess wanted to extend her research to a country that had a more diverse culture.

"Turkey is such an interesting place given that so many different cultures have gone through," says Gutchess. "You had the Crusades, trade routes and many different traditions."

The country is dotted with mosques, old Christian sites and Greek and Roman ruins yet Western influences are evident in its democracy and trade policies.

Istanbul, where Boğaziçi University is located, is the only city in the world situated on two continents: Asia and Europe. Turkey has had a lot of Asian influences over the years, says Gutchess, and also has been heavily influenced by Greek culture, which gave rise to the Western style of analytic reasoning.

The research team, which included associate professor of [psychology](#) Ayşecan Boduroğlu, Gutchess's former graduate school classmate, began by giving the Turkish participants word pairs to remember. In some cases words were categorically related, like red and blue. Other times they were not related, like red and paper, or red and bottle - items that aren't pulled together by category.

Participants were then shown the first word again and asked what they could recall.

"The idea is that if you depend on using categories a lot you'll remember words that were categorically related, but you'll also make errors," says Gutchess. "If you're someone who originally studied red and paper, you might misremember red and blue if blue is presented somewhere else on the list."

Gutchess says that there were also some participants making more semantic association errors - other things that could be red, like red wine. While red and wine are not from the same category taxonomically,

she explains, they can go together in broader associations, or they could also have been random errors.

The data revealed that Americans were making more category-based errors, wrongly combining red /blue when they didn't initially go together, while Turks were making more association errors, such as the red /wine type.

If different retrieval cues, memory stores, organizational schemes, or neural structures are employed across cultures, Gutchess says, that could impact how memory can best be supported through educational strategies or perhaps through human-computer interaction applications. The findings could also potentially be useful for training programs to remediate age-related declines in memory, she believes.

Provided by Brandeis University

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