

Color boosts brain performance and receptivity to advertising, depending on task

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A new University of British Columbia study reconciles a debate that has long raged among marketers and psychologists: What colour most improves brain performance and receptivity to advertising, red or blue?

It turns out they both can, it just depends on the nature of the task or message. The study, which could have major implications for advertising and interior design, finds that red is the most effective at enhancing our attention to detail, while blue is best at boosting our ability to think creatively.

"Previous research linked blue and red to enhanced cognitive performance, but disagreed on which provides the greatest boost," says Juliet Zhu of UBC's Sauder School of Business, author of the study which will appear in the Feb. 5 issue of *Science Express*. "It really depends on the nature of the task."

Between 2007 and 2008, the researchers tracked more than 600 participants' performance on six cognitive tasks that required either detail-orientation or creativity. Most experiments were conducted on computers, with a screen that was red, blue or white.

Red boosted performance on detail-oriented tasks such as memory retrieval and proofreading by as much as 31 per cent compared to blue. Conversely, for creative tasks such as brainstorming, blue environmental cues prompted participants to produce twice as many creative outputs as when under the red colour condition.

These variances are caused by different unconscious motivations that red and blue activate, says Zhu, noting that colour influences cognition and behavior through learned associations.

"Thanks to stop signs, emergency vehicles and teachers' red pens, we associate red with danger, mistakes and caution," says Zhu, whose previous research has looked at the impact of ceiling height on consumer choices. "The avoidance motivation, or heightened state, that red activates makes us vigilant and thus helps us perform tasks where careful attention is required to produce a right or wrong answer."

Conversely, blue encourages us to think outside the box and be creative, says Zhu, noting that the majority of participants believed incorrectly that blue would enhance their performance on all cognitive tasks.

"Through associations with the sky, the ocean and water, most people associate blue with openness, peace and tranquility," says Zhu, who conducted the research with UBC PhD candidate Ravi Mehta. "The benign cues make people feel safe about being creative and exploratory. Not surprisingly it is people's favourite colour."

The study finds that these trends carry over to our receptivity to consumer packaging and marketing messages. Using a series of fictional ads and product packages, researchers explored how colour impacts our receptivity to consumer packaging and advertising.

It found that when the background colour was red, people formed more favorable evaluations of products when its ad featured specific product details as opposed to evocative, creative messaging. However, when the background was blue, the opposite pattern of results emerged.

Similarly, people were more receptive to a new, fictional brand of toothpaste that focused on negative messages such as "cavity prevention"

when the background colour was red, whereas people were more receptive to aspirational messages such as "tooth whitening" when the background colour was rendered in blue.

Source: University of British Columbia

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