Look, something shiny! How color images can influence consumers

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Which radio would you choose? A study at The Ohio State University found that the answer depends on whether you see the images in color or black and white. Credit: The Ohio State University

When it comes to buying things, our brains can't see the big, black-and-white forest for all the tiny, colorful trees.

That's the conclusion of a study at The Ohio State University, which found that people who were shown product images in color were more likely to focus on small product details—even superfluous ones—instead of practical concerns such as cost and functionality.

The findings, published in the *Journal of Consumer Research*, mesh well with notions of how vision evolved in the brain, and suggest that viewing objects in black and white helps our brains focus on what's most important.

"Color images help us notice details," said Xiaoyan Deng, an author of the study and assistant professor of marketing at Ohio State. "But black-and-white images let us see the 'big picture' without getting bogged down by those details."

The findings also suggest how marketers can strategically use color—or its absence—to change how we feel about a product.

"Marketers may take it for granted that color is always the best presentation format for advertising," Deng added. "This study shows that while color is desirable in most situations, it's not desirable in all situations."

If a product has broad features that set it apart from the competition, then black-and-white images will help customers cast aside minor details and focus on those key features, the researchers found. If a product's details are what set it apart, color images will make those details stand out.

?In one part of the study, 94 college students were asked to imagine that they were traveling to a remote campsite where they could receive only one radio station. There, the campsite manager offered two radios for rent: a basic analog radio for $10 a day, or a fancy digital radio with many station preset buttons for $18 a day. Not only was the digital radio more expensive, but its preset buttons would be useless at the campsite.

Students who saw pictures of the radios in black and white tended to make the practical choice—the analog radio. Only 25 percent chose the digital radio.

How would you sort these shoes? Researchers at The Ohio State University found that the answer depends on whether you see them in color or black and white. Credit: The Ohio State University

But among students who saw the radios in color, twice as many chose the digital radio. In that scenario, 50 percent of students were willing to pay a higher price for a radio with features that they could not use.

"Color drew their focus away from the most important features to the less important features, and their choice shifted to the more expensive radio," Deng said. "I think that's surprising—that just by manipulating whether the product presentation is in color or black and white, we can affect people's choice."

Color also proved to be a distraction when study participants were asked to sort objects into groups. The researchers recruited people through Amazon Mechanical Turk, a service that provides online study participants.

The 287 participants were shown pictures of shoes and asked to sort

them. Each grouping contained two types of shoes that differed greatly in form and function, such as open-toe high heels and rain boots. In that particular example, half of the high heels and the boots were a solid red color, and the other half were red with white polka dots.

When people viewed the shoes in black and white, they sorted the high heels into one group and the rain boots into another 97 percent of the time. But when they saw the shoes in color, that number dropped to 89 percent, with 11 percent sorting the solid-color high heels and boots into one group and the polka-dot heels and boots into another.

The polka dots were clearly visible in black and white, but they had more impact on participants' decision-making when they were seen in color.

Study co-author Kentaro Fujita, associate professor of psychology at Ohio State, has an idea why. It has to do with the origin of our visual systems, and how our brains process night vision.

This image shows a selection of shoes used in the study. Ohio State University researchers found that people sorted the shoes into different categories depending on whether they saw the images in color or black and white. Credit: The Ohio State University

Of the light-sensitive rod and cone structures in the retina, it's the cones that detect color and the rods that give us night vision, peripheral vision and motion detection. Rods outnumber cones in the eye 20 to 1, and at night, when the cones don't receive enough light to let us distinguish colors properly, we rely on the rods to see what's happening around us—in black and white.

This would have been especially true for early humans, who didn't have sources of artificial light. At night, being able to tell the difference

between objects by shape would have been key to survival.

"Our visual systems evolved to work in both optimal and suboptimal conditions," Fujita explained. "Optimal conditions might be during the day, when I want to distinguish a red apple from a not-so-red apple. The form of the object tells me it's an apple, but I can focus on the color because that's what's important to me. Suboptimal conditions might be at night, when I have to tell whether that object that's moving toward me is my friend or a hungry lion. Then the form of the object is critical."

He suspects that when our eyes see black-and-white images, our brains interpret them in ways similar to night vision: We focus on form and function, and tend to ignore details.

Deng pointed out another circumstance in which people "see" in black and white: when we imagine the distant future. Other studies have shown that people who are asked to think of an event from the near or distant future and then presented with a series of photographs tend to pick less colorful photos as most closely matching their vision.

"It's almost like seeing in black and white is a vehicle for time travel," she said. "When you need to visualize ambiguous, uncertain future events, you want to get away from all those details, to construct that future event in your mind in a meaningful way. Seeing in black and white allows you to construct that event."

Marketers can take advantage of our ability to time travel, too. Deng said that black-and-white images would probably work well in ads for products that will be used in the distant future, such as retirement plans, investments or insurance.

Provided by The Ohio State University