

Science Explains Why We Have Favorite Colors

By: Allison Troutner | Feb 10, 2022



Research has found that blues are among the most popular colors because people associate them with positive things like clean water and blue skies. FLASHPOP/GETTY IMAGES

In 2003, one of our most beloved movie heroes, [Buddy the Elf](#), jovially answered his father's business phone call with a question: "Buddy the Elf, what's your favorite color?" and audiences found it endearing (Buddy's dad, not so much). What better way to break the ice than discovering your new friend's best-loved [color](#)? But why do we care what someone's favorite color is? Why do we have favorite colors at all?

Historically, it's been difficult to empirically explain why we have favorite colors. Research has shown that people often associate [colors with feelings](#), and it was easy to prove that people liked

certain colors. However, because there was no [standardization of colors](#), or a smaller subset of colors for scientists to work with, no one could explain *why* we like certain colors.

Ecological Valence Theory

Enter [Karen Schloss](#). As a child, her favorite activity was to organize her [crayons](#). It comes as no surprise that today, Schloss is an assistant professor in the department of psychology at the Wisconsin Institute for Discovery at the [University of Wisconsin-Madison](#) and has conducted critical studies on color preference.

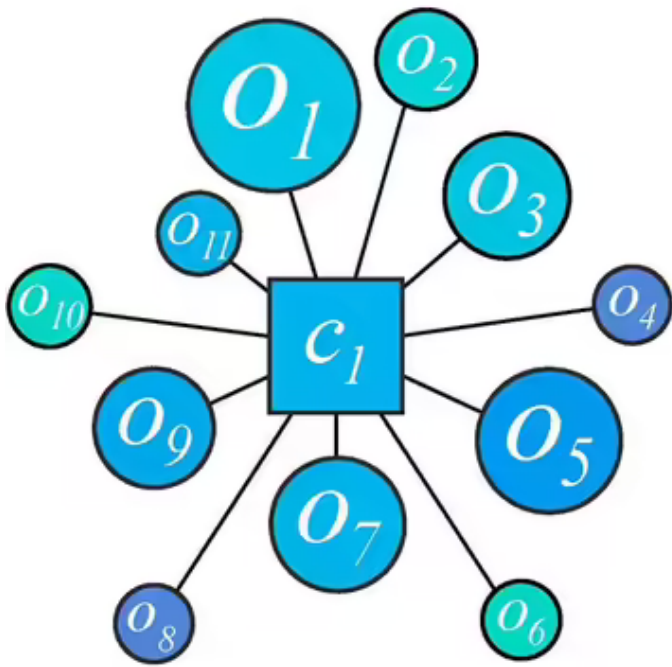
"I certainly have very strong color preferences that changed over time," she says. "These preferences influence a ton of decisions that we make — from the clothes that we wear, to the way we color our environments, and to the products we buy."

Knowing how colors impact our daily lives, she wanted to find out *why*. Through a series of lab studies between 2010 and 2017, she and her collaborator, [Stephen Palmer Ph.D.](#), a researcher at UC Berkeley, set out to find out why we like certain colors more than others.

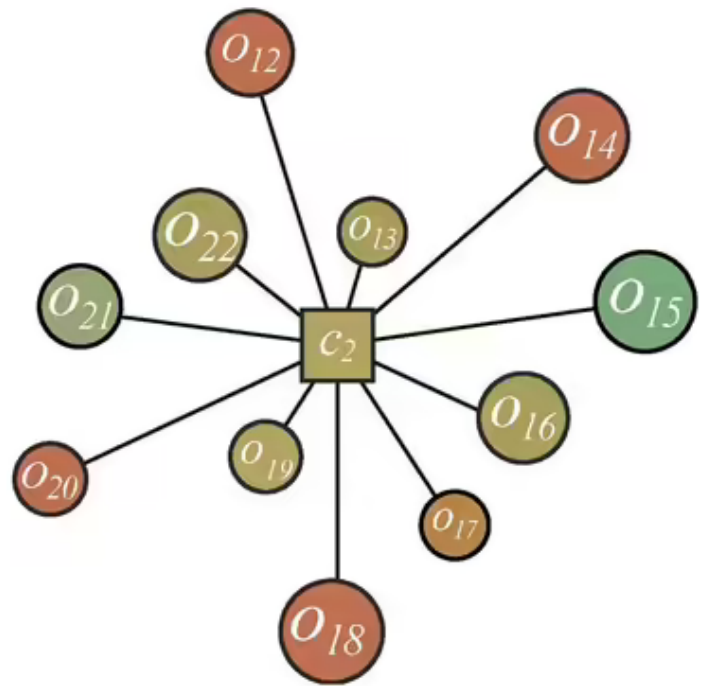
Schloss and Palmer hypothesized the [Ecological Valence Theory](#) (EVT), which they describe in their [2017 paper](#) as the theory that "...people like/dislike a given color to the degree that they like/dislike all of the objects and entities that they associate with that color."

For example, people often like blue hues because it reminds them of clear skies and clean water. On the other hand, people tend to shy away from brown hues because they remind us of feces or rotting food — that was their hypothesis. Were they right?

A. Saturated blue



B. Dark yellow



The graphic here shows the results of the WAVE hypothesis: The object preference is indicated by the size of the circles (the larger the circle, the more study participants preferred it) and object-color match is indicated by the distance between the circle and the central square (shorter connections show stronger matches).

KAREN B. SCHLOSS

Color WAVE

To explore EVT, Schloss and Palmer conducted a [series of lab studies](#) with several separate groups of participants who ranked color preferences, what colors made them think of certain objects, and if those objects represented positive or negative things.

The result: Weighted Affected Valence Estimates, aka [WAVE](#). "We found the correlation was .893," explains Schloss. This means that 80 percent of the change in average color preferences from one group of people to another was based on how much other people like objects related to those colors. "That's really cool," Schloss continues. "That's our first evidence that these patterns of color preferences ... can be explained by those objects associated with those colors."

With this data, the pair could explore different topics of color preferences like individual preferences, changes over time or even cultural preferences. However, WAVE from the original study was only correlational; it didn't explicitly explain what *causes* someone to like a certain color or why that change over time.

Lesions Versus Strawberries: A Color Study

Schloss and Palmer hypothesized that color preference is caused by how someone feels about objects of that color. "The idea is that if we bring to mind for you particular objects that are, say positive and associated a particular color or negative, we should be able to change your color preferences over the course of even a laboratory experiment."

To test this, they **presented participants** with objects associated with the colors red and green. One group saw positive red images like strawberries and roses, but also negative green images like vomit and mucous. The second group saw the opposite: negative red images such as lesions and positive green images like forests and kiwis.

"What we found is that we were able to significantly increase people's preferences for the colors that were associated with the positive things they saw," Schloss explains. "If you saw positive red things, you could significantly increase your preference for the red colors, then if you saw positive green things."

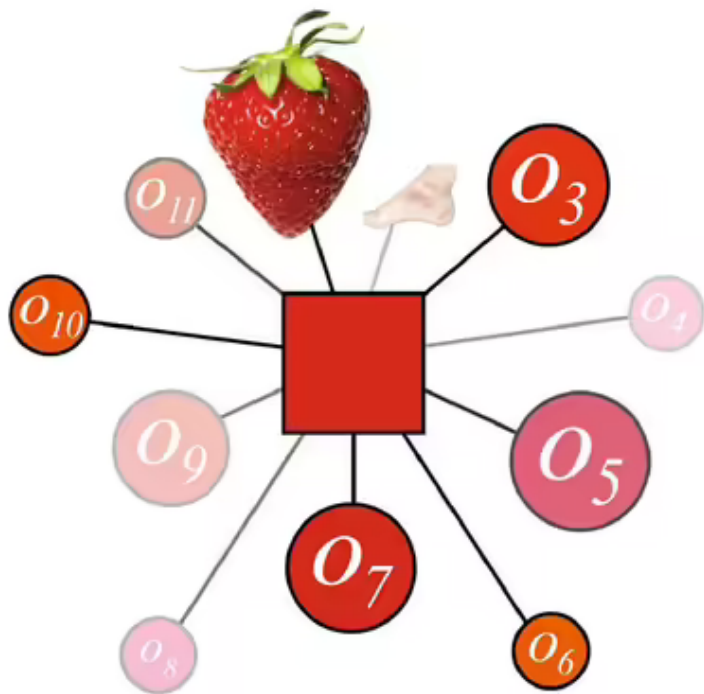
For most people, Schloss says, the negative red things like lesions, **are gross**. However, she continues to say that some of the participants could have been pre-med. So things like lesions might be fascinating to this subset of people. Their next step was to see if they could predict how much a person's preference would change based on how much that person liked the images they saw. Turns out, they could.

"If you activate the associations of particular objects, that can have a larger influence on your preference for the color," says Schloss. By activating, she means reminding you that an object exists, basically bringing it to the top of your mind.

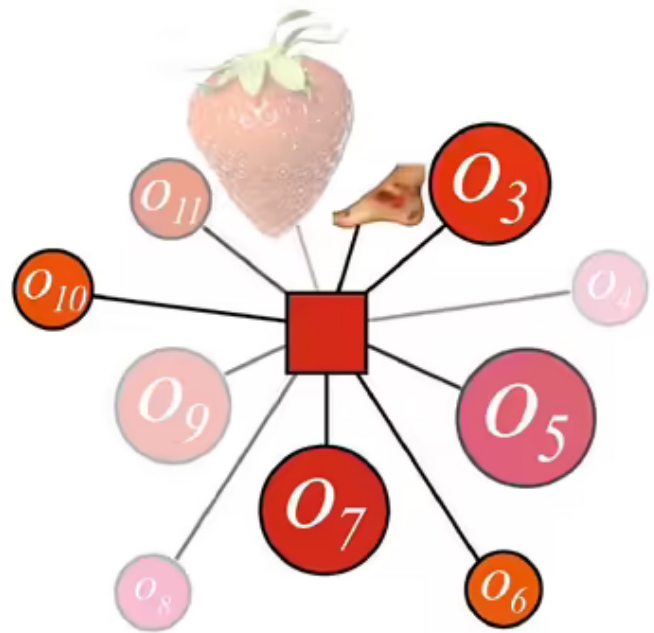
"Those [objects] are going to have more weight than the ones that I didn't activate," Schloss explains. For example, if participants saw positive images of red strawberries and not lesions, they were more likely to have a positive association with the color red.

This explains why a person may have positive or negative feelings about certain colors. It comes down to your experience with objects of those colors over time.

A. Person A



B. Person B



This graphic visualizes why one person might have a positive or negative reaction to the color red depending on their association of particular objects. The study was able to prove that over time, someone might change their preference for the color red depending on whether the strawberry image or the lesion image was activated.

KAREN B. SCHLOSS

Young girls tend to gravitate toward pink and purple colors because they are often exposed to clothes, toys and television shows they enjoy that use these colors. On the flip side, when they see vomit and other disgusting substances in the yellowish-greenish hues, they'll be more apt to turn the other when they see those colors. In fact, yellowish-greenish colors are the least liked across the world, Schloss says. Turns out, vomit is pretty much the same color for everyone, and equally repulsive.

An Evolutionary Drive to Be Happy

Scientists like Schloss have explored the idea that color preference may be part of our evolutionary design. "I can say that the idea is that color preferences act as a steering function that guides us toward things that are positive for our general health and well-being and away from things that are negative," Schloss explains.

It's like why humans typically don't like very bitter tastes because evolutionarily that taste is associated with poisonous foods. Color preference can be understood in a similar framework,

Schloss says. However, she points out that objects don't always have a rhyme or reason for their color. For humans today, choosing a [color we like for our loveseat](#) helps us thrive (i.e., be happy) and avoid colors that cause us to fail, i.e., be unhappy, as Schloss describes in her [2015 paper](#) published in the journal *Attention, Perception, & Psychophysics*.

"I can choose the color the of the case of my cellphone any color that I want ... and so, there are those arbitrary aspects of it," says Schloss. "But the idea is that we have this learning mechanism to learn associations between colors and objects or concepts, and then use those to inform our judgments about colors. This could have been something that may have been adaptive for us to have."

So, while having a favorite color isn't a life-or-death choice for modern humans, answering Buddy's ice breaker question, "What's your favorite color?" can offer us more useful into our likes and dislikes than we previously thought.



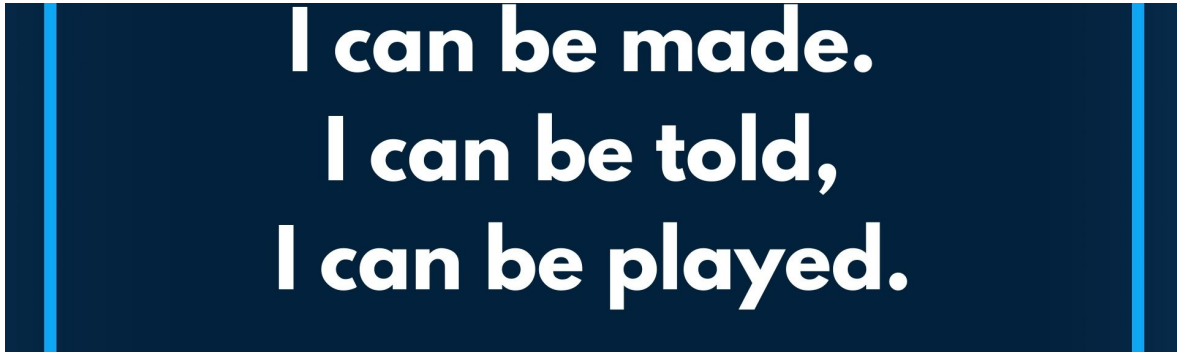
According to the scientific research, someone might love the color orange because they associate it with their favorite fruit.

IAN ROSS PETTIGREW/GETTY IMAGES

Now That's Interesting

Blue hues are the [most popular](#), even [cross-culturally](#). Research, like Schloss' explains this because blue is nearly always associated with universally positive things, like clean water and blue skies. In fact, in her studies, blue was the only color for which participants never listed a negative object.

Games



**I can be made.
I can be told,
I can be played.**

[Can You Solve This Riddle?](#)



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Color Wheel Theory: How to Talk About Color

By: [Jesslyn Shields](#) | Apr 9, 2019