Color Names: More Universal Than You Might Think

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From Abidji to English to Zapoteco, the perception and naming of color is remarkably consistent in the world's languages.

Across cultures, people tend to classify hundreds of different chromatic colors into eight distinct categories: red, green, yellow-or-orange, blue, purple, brown, pink and grue (green-or-blue), say researchers in this week's online early edition of the *Proceedings of the National Academy of Sciences*.

Some languages classify colors into fewer categories, but even these categories are composites of those eight listed above, said Delwin Lindsey, the study's lead author and an associate professor of psychology at Ohio State University.

"Though culture can influence how people name colors, inside our brains we're pretty much seeing the world in the same way," he said. "It doesn't matter if you're a native of Ivory Coast who speaks Abidji or a Mexican who speaks Zapoteco."

He conducted the study with Angela Brown, an associate professor of optometry at Ohio State.

Lindsey and Brown used data from the World Color Survey, a collection of color names supplied by 2,616 people of 110 mostly unwritten languages spoken by mostly preindustrial societies. The survey's 320 different colors are organized into eight rows of 40 color chips per row

(black, white and grays are each in their own category.)

The researchers used the survey because it included many people from preindustrial societies whose color names are thought to be relatively uncontaminated by contact with highly industrialized cultures whose color names closely resemble those found in English.

Lindsey and Brown devised a statistical method that let them determine the optimum number of color categories based on the color terms uncovered in the study.

“My own intuition was that if we looked across the world at different languages, people would obviously use different names, but roughly we’d find maybe 11 names used to partition color space,” Lindsey said. “That’s not at all the case.

“By looking at more traditional cultures, we found that many have fewer color names, yet these names correspond to colors that English-speaking cultures also discriminate linguistically,” he continued.

Using a technique called cluster analysis, he and Brown analyzed data gathered by previous color survey researchers. This approach helped them measure the similarity across all the different cultures in terms of how each applies name to color.

“We have names for 11 basic colors in English,” Lindsey said. “Some cultures have two, some have three. We wanted to know if the cultures that say they only have two color terms chose colors similar to those selected by cultures that have more color names.”

They found that colors fall into eight distinct categories.

“Across cultures the average color-naming patterns of the clusters all

glossed easily into single or composite English patterns," Lindsey said.

"Even though people are really diverse, when push comes to shove, they are incredibly English-like," he said. "Many cultures don't have all of the English color categories, but they have many of them. And the ones that aren't exactly English turn out to be what we call composites – simple combinations of adjacent color categories."

That, says Lindsey, helps explain categories like grue (green-or-blue) and yellow-or-orange.

The researchers found a major distinction between warm and cool categories for many of those cultures that have just two or three common colors. That distinction tended to coincide with English colors that are thought to be warm (yellows, reds and oranges) and cool (greens and blues.)

"While there is some diversity in the location of the color boundaries, there is an absolutely rock solid boundary across all the cultures, which English speakers would call warm and cool," Lindsey said.

For example, some societies lump all the cool colors into one category, and all the warm colors into another category, while other societies subdivide warm and cool colors into several categories. In the case of the subdivided categories, there still exist color boundaries that separate warm from cool.

Lindsey said the next stage in this research is to look at physiology of color perception, as some researchers believe that infants have the innate ability to recognize certain colors.

Source: Ohio State University