

# Research of “Emotion and Color”

- **Colors in psychology**

"Given the prevalence of color, one would expect color psychology to be a well-developed area," researchers Andrew Elliot and Markus Maier have noted. "Surprisingly, little theoretical or empirical work has been conducted to date on color's influence on psychological functioning,<sup>1</sup> and the work that has been done has been driven mostly by practical concerns, not scientific rigor."

Despite the general lack of research in this area, the concept of color psychology has become a hot topic in marketing, art, design, and other areas. Much of the evidence in this emerging area is anecdotal at best, but researchers and experts have made a few important discoveries and observations about the psychology of color and the effect it has on moods, feelings, and behaviors.

Why is color such a powerful force in our lives? What effects can it have on our bodies and minds?

While perceptions of color are somewhat subjective, there are some color effects that have universal meaning. Colors in the red area of the color spectrum are known as warm colors and include red, orange, and yellow. These warm colors evoke emotions ranging from feelings of warmth and comfort to feelings of anger and hostility.

Colors on the blue side of the spectrum are known as cool colors and include blue, purple, and green. These colors are often described as calm, but can also call to mind feelings of sadness or indifference.

## **Black**

According to color psychology, these are the characteristics of black:

- Black **absorbs all light** in the color spectrum.
- Black is often used as a **symbol of menace or evil**, but it's also popular as an indicator of power. It's used to represent treacherous characters such as Dracula and is often associated with witchcraft.
- Black is associated with **death and mourning** in many cultures. It's also associated with unhappiness, sexuality, formality, and sophistication.
- In ancient Egypt, black represented **life and rebirth**.
- Black is often used in fashion because of its **slimming quality**.
- Consider how black is used in language: Black Death, blackout, black cat, blacklist, black market, black tie, black belt.

## White

According to color psychology, these are the characteristics of white:

- White represents **purity or innocence**. While a bride wearing white was often thought to convey the bride's virginity, blue was once a traditional color worn by brides to symbolize purity.
- White is bright and can create a sense of **space or add highlights**. Designers often use the color white to make rooms seem larger and more spacious.
- White is also described as **cold, bland, and sterile**. Rooms painted completely white can seem spacious, but empty and unfriendly. Hospitals and hospital workers use white to create a sense of sterility.
- Some of the **positive meanings** that white can convey include cleanliness, freshness, and simplicity. The color white often seems like a blank slate, symbolizing a new beginning or a fresh start.
- On the negative side, white can seem **stark, cold, and isolated**. Consider how a large, white, empty room might seem boring, bland, and stark.

## Red

- Red is a bright, warm color that evokes strong emotions.
- Red is associated with love, warmth, and comfort.
- Red is also considered an intense, or even angry, color that creates feelings of excitement or intensity.
- Consider how red is used in language: redneck, red-hot, red-handed, paint the town red, seeing red

## Blue

According to color psychology:

- Blue is described as a favorite color by many people and is the color most **preferred by men**.
- Because blue is favored by so many people, it is often viewed as a non-threatening color that can seem conservative and traditional.
- Blue calls to mind **feelings of calmness or serenity**. It is often described as peaceful, tranquil, secure, and orderly.
- Blue is often seen as a sign of stability and reliability. Businesses that want to project an image of security often utilize blue in their advertising and marketing efforts.
- Blue can also create feelings of **sadness or aloofness**. Consider how a painting that heavily features blue, such as those produced by Picasso during his "blue period," can seem so lonely, sad, or forlorn.

- Blue is often used to decorate offices because research has shown that **people are more productive in blue rooms**.
- Blue is one of the most popular colors, but it is one of the **least appetizing**. Some weight loss plans even recommend eating your food off of a blue plate. Blue rarely occurs naturally in food aside from blueberries and some plums. Also, humans are geared to avoid foods that are poisonous and blue coloring in food is often a sign of spoilage or poison.
- Blue can also lower the pulse rate and body temperature.
- Consider how blue is used in **language**: blue moon, blue Monday, blue blood, the blues, and blue ribbon.

## Green

- Exciting
- natural
- optimistic

## Yellow

- **Warmth:** Yellow is a bright color that is often described as cheery and warm.
- **Difficult to read:** Yellow is also the most fatiguing to the eye due to the high amount of light that is reflected. Using yellow as a background on paper or computer monitors can lead to eyestrain or vision loss in extreme cases.
- **Frustration:** Yellow can also create feelings of frustration and anger. While it is considered a cheerful color, people are more likely to lose their tempers in yellow rooms and babies tend to cry more in yellow rooms.
- **Energetic:** Yellow can also increase metabolism.
- **Attention-grabbing:** Since yellow is the most visible color, it is also the most attention-getting color. Yellow can be used in a small amount to draw notice, such as on traffic sign or advertisements.

## Purple

- wisdom
- soothing
- mysterious
- regal

## Brown

- Brown is a natural color that evokes a sense of strength and reliability. It's often seen as solid, much like the earth, and it's a color often associated with resilience, dependability, security, and safety.
- Brown can also create feelings of loneliness, sadness, and isolation. In large quantities, it can seem vast, stark, and empty, like an enormous desert devoid of life.
- Brown brings to mind feelings of warmth, comfort, and security. It's often described as natural, down-to-earth, and conventional, but brown can also be sophisticated.

## Using color for emotional design

There are several studies that show a similar pattern, on the way that hue relates to the three emotional domains. We translated one of these studies to a visual color map (Figure 1), based on the data in Suk and Irtel (2008).

Pleasure and control peak in the cool colors, but drop in the hot colors. Conversely, arousal dips in the cool colors but peaks in the hot range, especially into red.

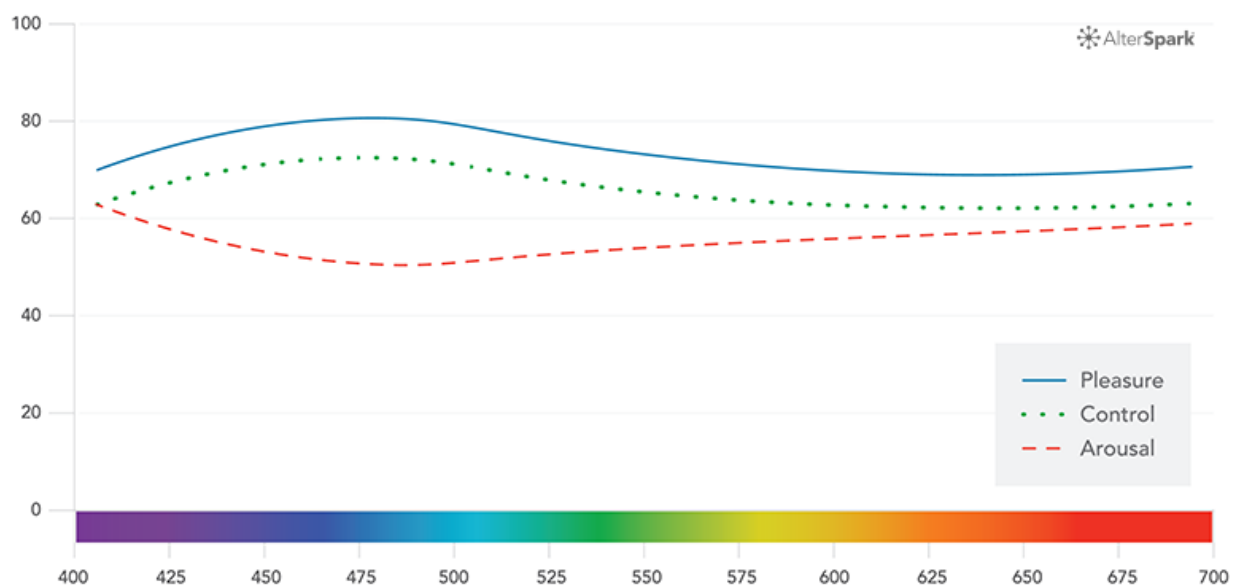


Figure 1. Hue in wavelength (perceived by cones)

Figure 12 shows the achromatic scale from black to white, with the three emotional domains. Overall, the positive, optimistic, and relaxed emotions

lie closer to white and light grey, while the most depressing color is in the grey zone with higher arousal and stress-like emotions closer to black.

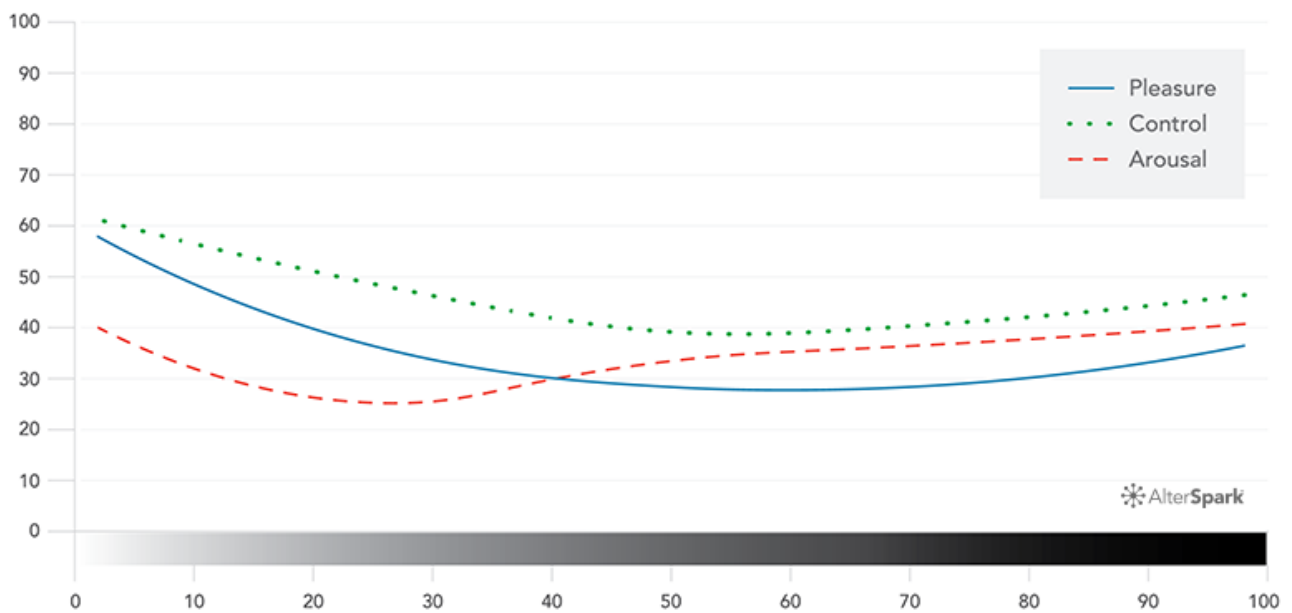


Figure 2. Achromatic (white to black perceived by rods)