

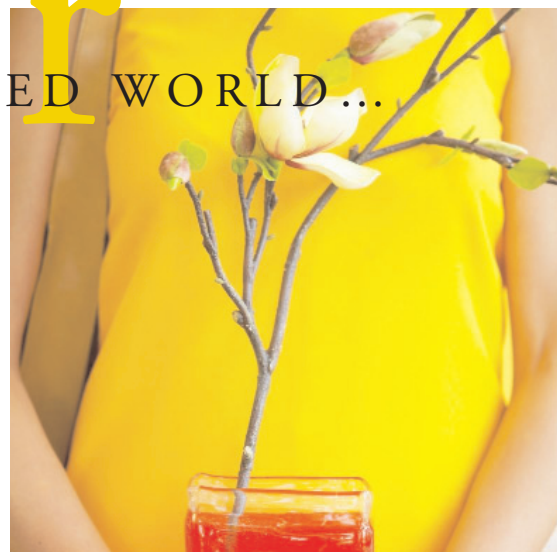


THE BUSINESS OF Color

Color

WE LIVE IN A COLOR-SATURATED WORLD...

...and make choices about color every day. Yet there's a lot about color that isn't understood or hasn't been explored. What are the connotations of color? What effects do colors have on people...and why? Do our eyes and brains process different colors in different ways, and could that be important to know?



In primitive cultures, color was loaded with religious and symbolic meaning. Black, red and white were the most commonly available pigments. They came to be associated with night, blood and bone, an association that held across different cultures and locations and is considered archetypal.

As technology improved, so did the ability to produce stable, durable pigments in an ever-widening array of colors. While scientific processes have resulted in many more colors, many questions remain about their effects on people.

Individual color preference is widely regarded as a personal matter influenced by cultural issues. Our perception of colors is reflected in the language we use to describe them, and the names given to colors influence our feelings about them — robin's egg blue...olive green...mushroom...rose.

Paint manufacturers have long known they can stimulate sales with the name of the paint — and thereby affect people's emotional response to it. Similarly, OPI Products, Inc. has created a strong marketing presence based on creatively named palettes of nail polishes.

"Windy City Pretty" in OPI's Chicago collection may be a very similar pink to "Miso Happy with this Color" in the Japanese collection, but the names carry different connotations and make them seem like very different colors.

Accumulating knowledge of how the brain reacts to colors could become the best basis for selection of palettes for healthcare facilities, schools and other environments where the stakes are high.

Men prefer blue Women prefer red

■ ■ ■ Do you believe the statements?

It's not all about creative naming and connotations, however. Certain physiological responses to colors and the waves of light that generate them suggest that responses to color may be fundamentally more about science than aesthetics.

Something that's known: The rods in human eyes respond to the stimulation of different wavelengths of light. Different wavelengths cause different physical responses. For example, the wavelength that produces red requires the eye to adjust to catch it. Therefore, in purely physiological terms, red is an agitating color. Blue and green wavelengths are easier for the eye to perceive and, therefore, these colors are physiologically restful.

In today's workplace, colors are often selected to create impact and bring about desired responses. They're also useful as a directional device, affecting perception of space and focusing attention.

"What's most fascinating to me about color is how emotional it is," says Laura Guido-Clark, a consultant based in Berkeley, California, who is an expert in the "skin" of products ranging from Mattel's Barbie merchandise to Toyota automobiles. "Working with color is often humbling because it's so powerful." She discovered the power of color for herself as a child, she says, when she watched Dorothy leave black-and-white Kansas and enter a Technicolor world in "The Wizard of Oz."

Maybe *because* color is so powerful, many people seem to be afraid of it — especially in business environments — preferring instead to stay with safe choices and neutrals.

Some people’s anxiety about color may come from the fear that others won’t like the choices made. There’s also an uneasiness that comes from not fully understanding — and therefore not being able to explain — why certain color choices were made.

Consider, for example, these statements:

- Men prefer blue.
- Women prefer red.
- Children do better in a schoolroom with a blue ceiling.
- Olive greens offset high-pitched sounds, while lighter colors counter muffled sounds.

Do you believe the statements? Should you? Some of them reflect personal reactions to color, while others appear to be based on physiological response.

Color as a Science

THE ASSOCIATIONS WE MAKE...

...with color and emotional and physical states have been the subject of many studies and surveys, notably with the works of Johannes Itten and Josef Albers that started in the 1920s. Among their findings: green can help patients tolerate pain, pink calms violent prisoners down faster.

The use of pink in this way is often referred to as “drunk tank pink” and is based on the studies of Dr. Albert Schauss, director of the American Institute for Biosocial Research in Tacoma, Washington. He showed that the color Baker-Miller Pink — approximately what Benjamin Moore #1328 looks like — had this calming effect. He found that even if people try to be angry or aggressive in the presence of pink, they can’t be. The heart muscles can’t race fast enough. It’s a tranquilizing color that saps energy.

A summary of work done by Drs. Morton Walker and Gerard and Faber Birren also records physiological responses. When exposed to red, an individual’s pituitary gland

sends signals to the adrenal gland and adrenaline is released. Heart beats faster, blood pressure increases, breathing becomes more rapid, taste buds become more sensitive, appetite improves, sense of smell heightens. Conversely, when exposed to blue, an individual’s brain secretes hormonal neurotransmitters that tranquilize. Pulse rate slows, body temperature lowers, breathing deepens and appetite is reduced.

Another study by Dr. Albert Styne revealed that cool colors under cool fluorescent lighting resulted in a quieter, neutral, inward-focused mood — the space seemed larger and cooler, noises seemed quieter. Meanwhile, warm colors under warm incandescent



lighting resulted in an animated, active, outward-focused mood — the space seemed smaller and warmer, noises seemed louder.

While these physiological responses have been scientifically recorded, there is also substantial evidence that shows these reactions are short term versus sustained over a long period of time.

Some theories suggest that the arousal effects of color come not from the color, but from the strength and brilliance of the color — i.e., the arousal or irritation effect comes from the limited stimulation of only one hue. Exposure to a single strong hue will have arousal effect. In other words, strong green is just as stimulating as strong red.

Another element to consider is a phenomenon called synesthesia — a physiological response that explains certain effects on human perception. For example, why does yellow-green bring a sour taste to the mouth? Each sense has a parallel path to the brain, but there is crossover and each brain area has a continuous effect on the others.

Yet another theory was espoused by renowned color consultant Carlton Wagner, who claims our response to color depends on many factors, including gender, age, intelligence, education, socioeconomic background and regional attitudes. Wagner believed that colors could be categorized according to their effect on our perception, and broke them into two categories — classifiers and declassifiers.

Classifiers, according to Wagner, can narrow the appeal of a product or elevate its status.

They include...

- forest green
- burgundy
- bluish reds
- yellowish reds

According to Wagner's work, declassifiers can broaden the appeal of a product or cheapen its image.

These colors include...

- orange
- red
- yellow
- grey

■ ■

Colors can be categorized according to their effect on our perception

Does Grey Still Matter at Work?

IN TODAY'S WORKPLACE, COLOR PLAYS...

...typically a very practical role in terms of user comfort and minimizing eye fatigue.

Eye fatigue is caused by four things:

- glare — highly reflective surfaces cause strain
- contrast — the muscles of the eyes expand and contract when they encounter contrast, which leads to fatigue.
- pattern — distracts the eye
- monotony — the use of only one hue causes the eye to create an "after image" (the opposite color) and leads to excessive muscle action.

To reduce eye fatigue in areas of immediate focus, the solution is to avoid highly reflective surfaces and select colors that minimize contrast. The ideal ratio of contrast is 3 to 1, assuming an even distribution of illumination. For example, white has a 90% light reflective value, and black has 5%. That makes the ratio 18 to 1 — far from ideal. Research has shown that the best colors to use in areas of focus are off-white, taupe, light grey, light beige, sand, grey-green and, in general, muted colors.



While muted colors are good for areas of focus, the corporate world often uses neutrals everywhere. The effect of this type of design can encourage detachment at the same time that managers are demanding more engagement. Today's typical office space is a neutral world — a sea of beige and grey computer equipment and inoffensive office decor. It all goes together, but does it do anything to motivate people?

Tom Peters, author of *In Search of Excellence*, spoke to this idea in an interview. He said, "This thing called design...has become central to enterprise strategy...The real world of enterprise...is about risks and blood and passion and life and human beings. It makes no sense to me that the places where we are supposed to do productive work are incredibly impersonal."

Given its ability to appeal to different target groups and send different messages, can and should color play an enhanced role in the workplace?

The answer appears to be yes. At its best, color can stimulate a culture of creativity and drive performance through the flow of ideas and information in the workplace. It can help stimulate a culture of innovation, collaboration, communication and learning.

■ ■ ...the opportunity is to apply complex thinking and defined processes to understand the behaviors, reactions and needs of people in work environments today.

By combining color and texture, surface materials in the workplace can be both stimulating and satisfying, says Guido-Clark. "Surface interest is extremely important. Humans respond to things diverse coming together as a seamless whole of disparate parts. It makes your environment seem much more real."

Ideas and data about how to create and manage effective workplaces are growing in sophistication. Corporate clients are turning to designers to create and implement solutions that will enhance the workplace experience — not just for the aesthetic impact but as impetus for the behaviors that will drive the business.

Assumptions abound. The trend — and the opportunity — is to put the assumptions aside and apply complex thinking and defined processes to understand the behaviors, reactions and needs of people in work environments today. •

Color Talks

INTERESTING RESEARCH INTO COLOR...

...is currently being done by LH Color in New York City. Founded by Leslie Harrington, a designer and 20-year color marketer from the paint industry, and Anat Lechner, Ph.D., professor of management at the Stern School of Business, New York University, the company is focused on advancing the state of knowledge about color and its relevance to business — making it more scientific and accurate, and thereby more valuable.

Existing color knowledge, according to Harrington and Lechner, is composed of a lot of folklore and relatively few empirically supported theories.

They hope to change that by applying scientific methodology to the study and application of color, including how it's used in the workplace.

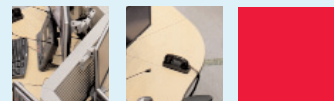
In an ongoing study, LH Color is examining the relationships between color and emotions to better understand its use as a strategic lever.

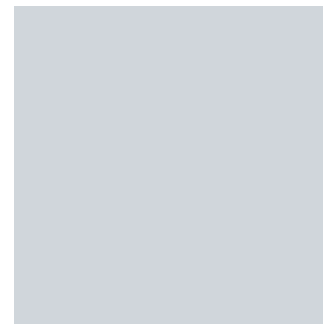
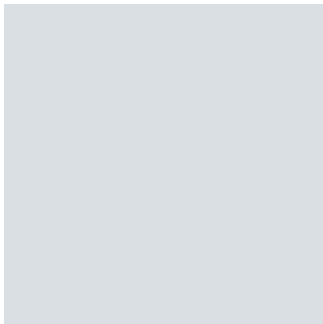
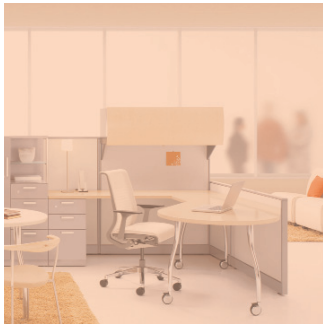
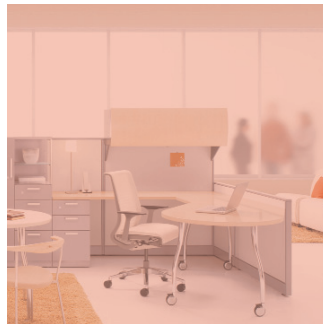
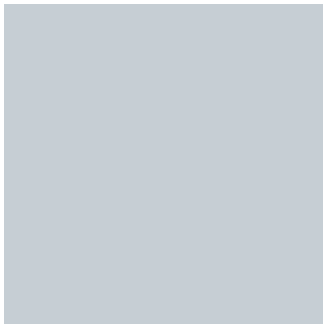
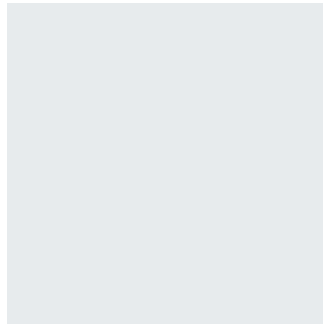
Managing emotions by design is becoming a critical area of focus for their research. "Design is a matter of framing contexts of experience. Experience is perceived cognitively and emotionally before behavior is affected," says Lechner

"We asked if there is an underlying platform of emotional meanings to color, one that remains consistent over time and context. We assumed that such consistency will indicate the existence of a color language that connects colors and emotions or meanings in a systematic way," Harrington and Lechner write in their report, "Color as an Emotional Language."

One of their research projects tested color-emotion associations across gender, age and professional groups. Respondents were given a questionnaire that presented 29 emotion descriptors [joy, anger, love, etc] and 10 color selections and asked to make associations.

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Color Talks (continued from page 5)

The initial phase of their research was exclusive to U.S. participants, but they have since begun to expand it to include international investigations.

Phase 1 results of their work show strongly consistent color-emotion associations for the primary colors of red, yellow and blue. Specifically, they were consistently associated with positive emotions, while neutrals (with the exception of white) are more associated with negative emotions.

Another finding was that people seem to have a clearer understanding of what colors do not mean than what they do, as seen in figure 1.

The study data shows some difference in the way color language is spoken across gender, professional and age conditions.

For example, in terms of gender differences...

- Red, Yellow and Orange are perceived more negatively by men than by women.
- Blue is viewed as more emotionally “active” by men.
- Black is viewed more positively by men than by women.
- Green, Purple, White, Grey and Brown show little gender differences.

In terms of differences between professionals and non-professionals...

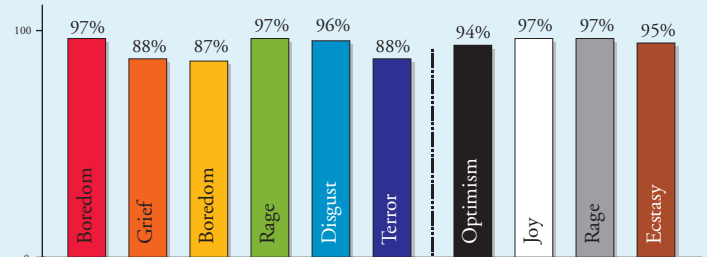
- Orange and Yellow are viewed as being more passive by non-professionals.
- Blue is viewed as being more passive by professionals.
- Green and White are viewed more positively by professionals.
- Purple, Black, Grey, and Brown exhibit little to no difference in associations for professionals versus non-professionals.

In terms of age differences...

- Red and Purple are viewed more positively by respondents over the age of 29.
- Orange is seen as more peaceful by respondents under 29.
- Yellow, Green and Blue show no age relationship.

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Figure 1: COLOR – STRONG EMOTIONAL DISASSOCIATIONS



People seem to have
a clearer understanding of
what colors do not mean
than what they do...



Color Talks (continued from page 6)

“It is our belief that these differences may become significant when color decisions have to be made in reference to offerings that target groups by age or gender,” Harrington and Lechner note. “As many corporations are grappling with changing their strategies to better compete in a dynamic and complex world, redesigning their workplace and using color consciously may be the only design choice that can touch emotions and recruit people’s motivation to support the strategic changes,” these researchers contend.

As an outcome of their initial work, Harrington and Lechner have created individual “summary stories” about the 10 colors they tested. One example is printed here with permission (see “Gray” below).

These findings raise questions about the use of gray in the workplace, Harrington and Lechner suggest.

“Can we really expect out-of-the-box thinking in an environment that generates boredom and disengagement? What cognitions are associated with such emotions and what behaviors are likely to result?” asks Lechner. “Mirroring and supporting complex business demands with workspaces that use color knowledgeably and in a sophisticated way to evoke the positive emotions of trust, excitement and courage is critical to support collaboration and innovative thinking and enable sustainable business success.”

Gray*

- Gray is linked to Boredom more than any other color. It also has weaker links to Sadness and Grief.
- It is not linked to Joy, Surprise and Optimism, in opposition to Yellow and Orange which are strongly linked to these colors.
- Gray lives in the negative territory of the emotional grid.
- No significant difference between men and women was noted in the data.
- No significant difference between professional and non-professionals was noted in the data.
- Older respondents are more variable in their opinions about Gray.

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