



08/2013

THE STRATEGY OF COLOR

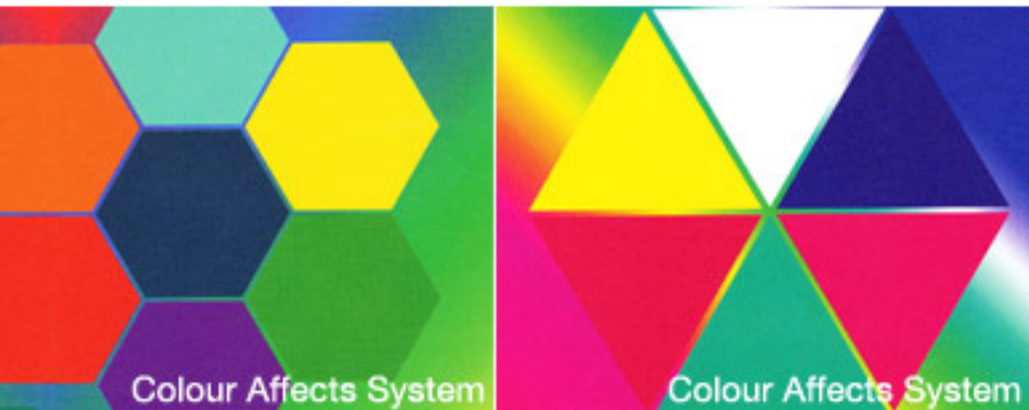
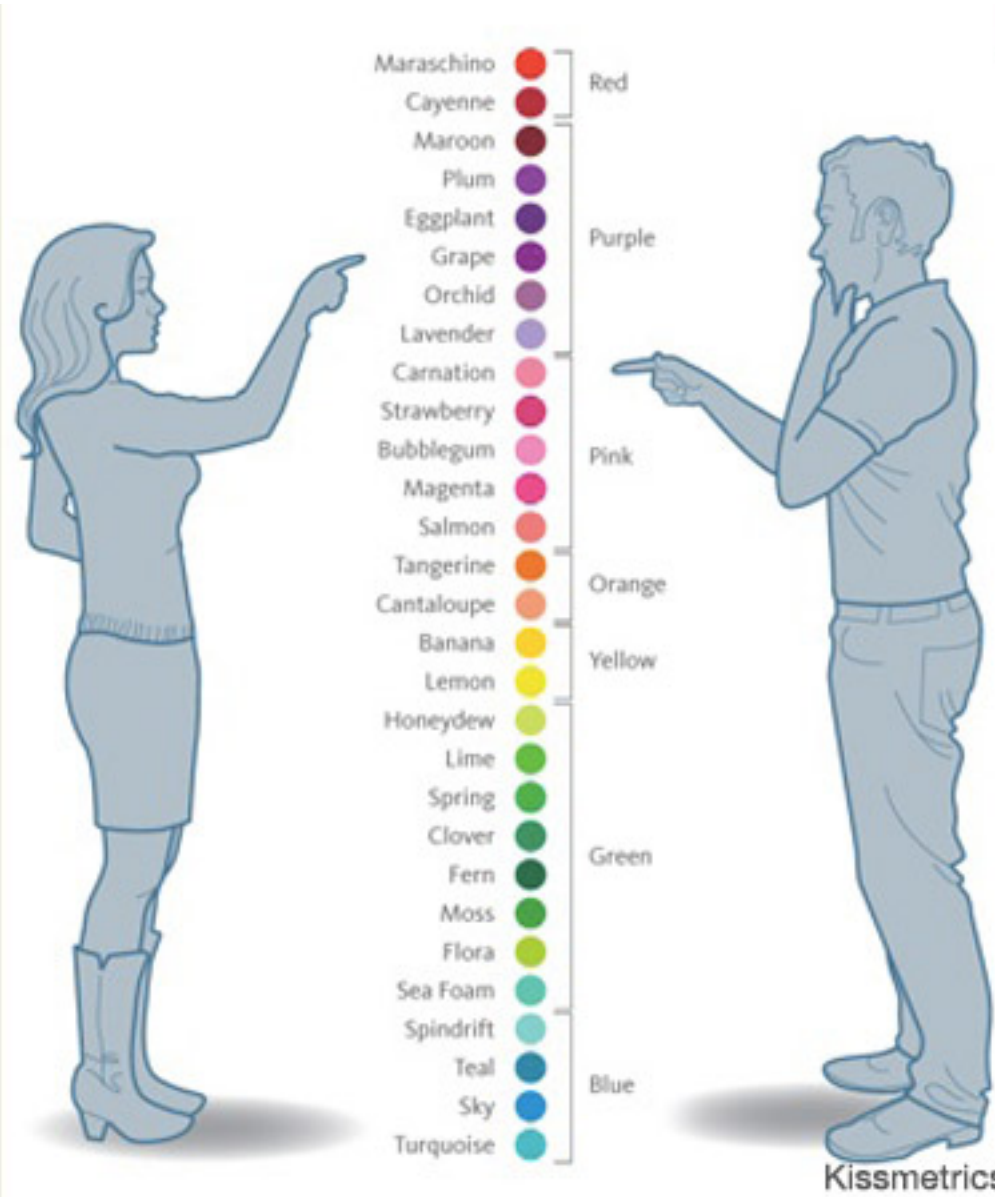
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Color is more than what meets the eye; color affects our total being. Using this universal language, humans can communicate as color is ingrained through nature's signalling system. Beyond the visual, color psychology experiments show that blind people can sense color energies through their fingertips. It is also tied to religious, cultural, political and social influences. **Angela Wright** identified links between patterns of color and patterns of human behavior in 1984. Called the **Colour Affects System**, she created four main color families, corresponding to four basic personality types, where every color within the family harmonizes.

Using colors in combination is key to influence perceptions, as we rarely see colors in isolation.

Color is linked to **language** and most people generally use relatively simple names to denote colors. Interestingly, men see color much more simply than woman, identifying a block of purple, where women see eggplant, maroon and violet. In tandem with the the rising exposure to both natural and synthetic colors, **Crayola** has been doubling its range of color names every 28 years.

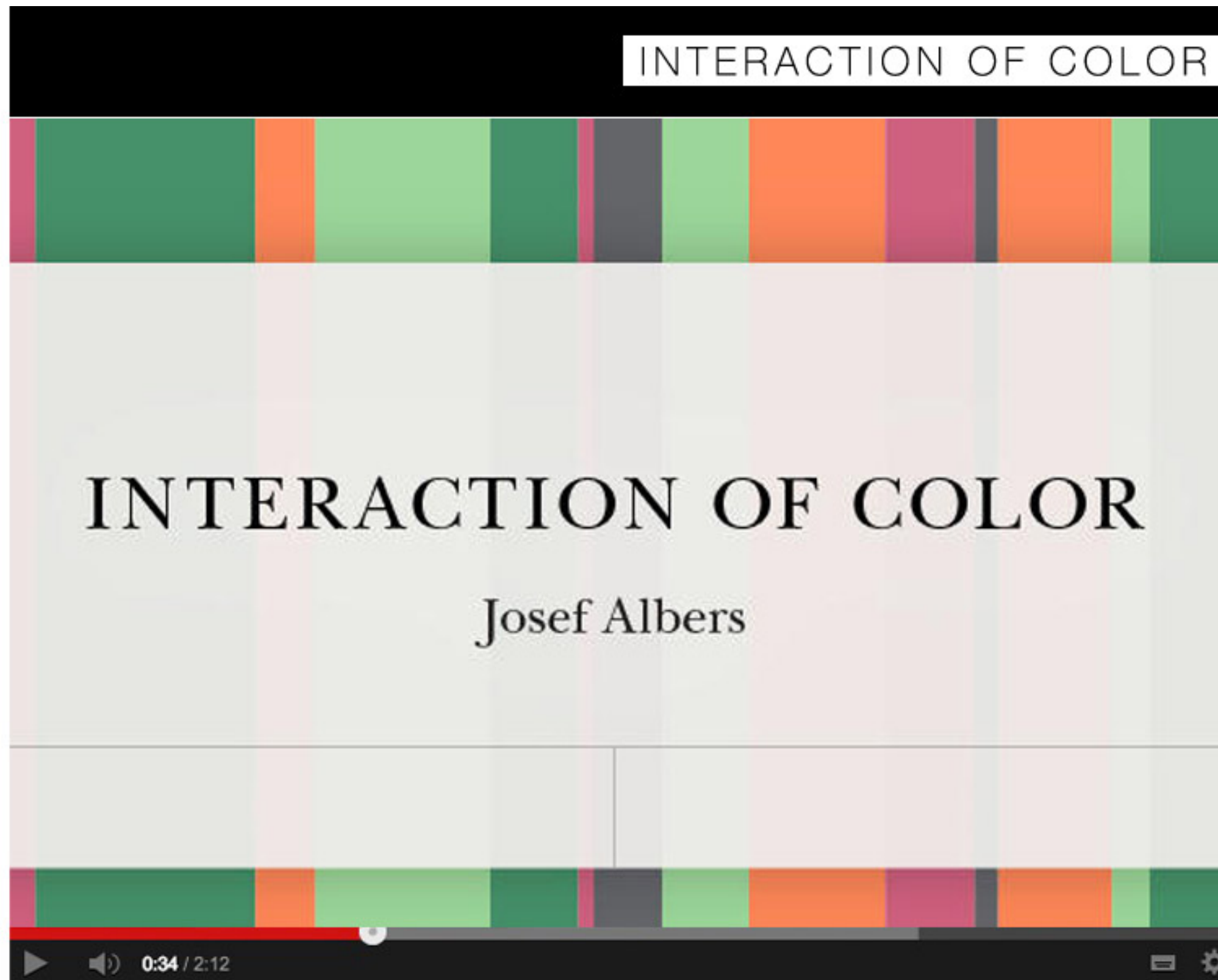


One of the most resounding works on color is **Josef Albers'** *Interaction of Color*, published in 1963. The book hypothesizes that colors are governed by an internal logic. Based on learning by perception, rather than theories of color, the book was originally devised as a teaching aid for artists and students.

“Color is really the mise-en-scène in which everything else takes place.”

- *Peter Mendelsund, Graphic Designer*

Yale University Press has just launched the digital edition of this masterpiece, to celebrate the 50th anniversary of its publication. The **Interaction of Color app** for iPad combines the full text of the original book, with the set of 140 color studies, as well as insightful commentary from textile designers, artists, and design directors. The app brings color to life and reminds us that color is instinctual and should not just be seen, but experienced.



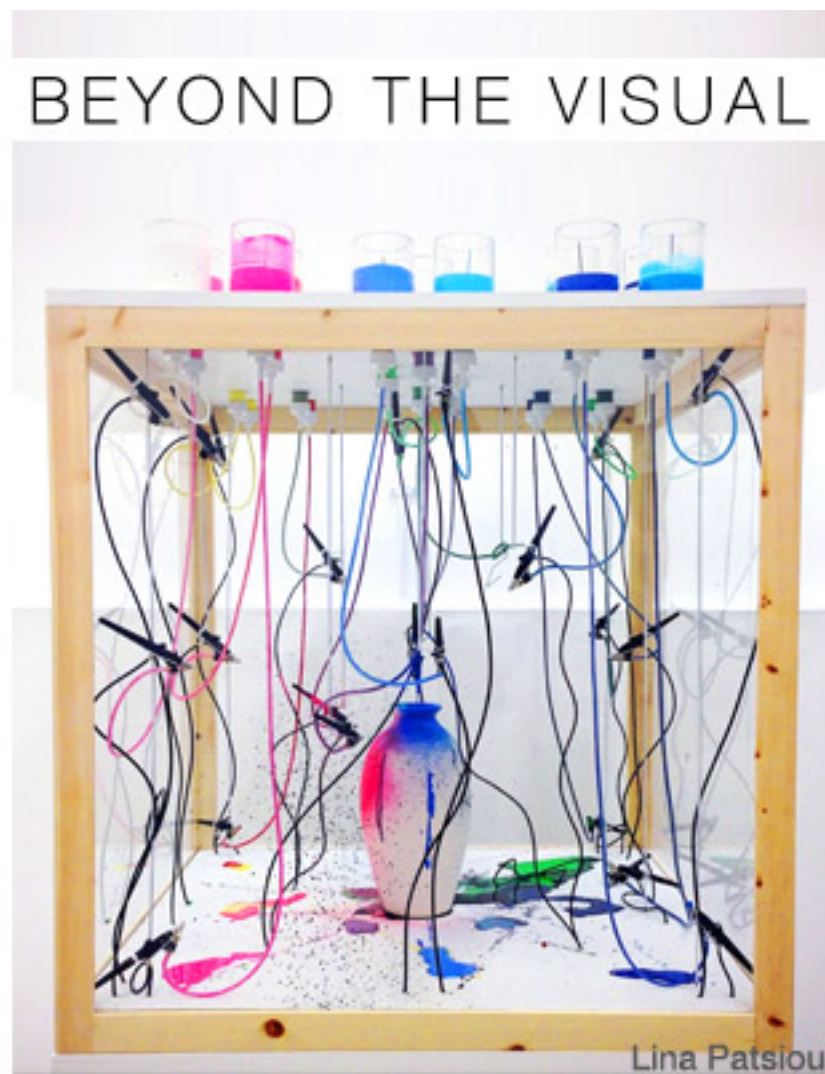


Neil Harbisson

Born without the ability to see color, **Neil Harbisson** wears a head device that enables him to hear sound waves of color, which he uses to create artworks. This cyborg-level of perception means that he experiences supermarkets and art galleries like musical compositions.

Technology is pushing the boundaries of color theory, and expanding our notions of visual perception.

Color is also becoming a consideration for new tools, including 3D printers. **PWDR** is an open-source printer that uses powder and ink to create pigments. Meanwhile, **Richard Home** has also hacked the **RepRap** printer to enable 3D printing in many colors, calling his creation the “Rich Rap.” RCA graduate **Lina Patsiou** has created a new language system whereby letters of the alphabet are matched with color. Her project allows users to spray secret messages onto objects using this color coding system.



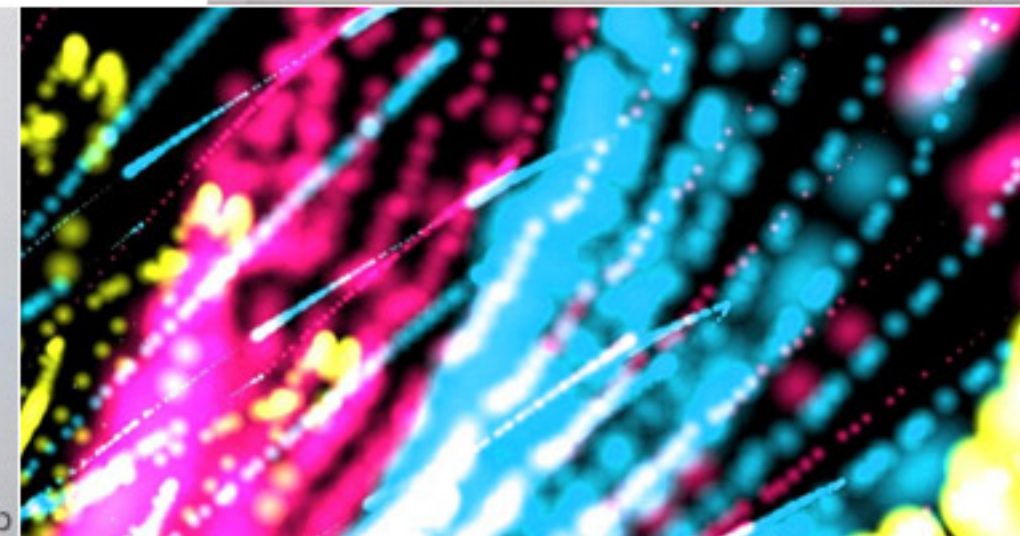
Lina Patsiou

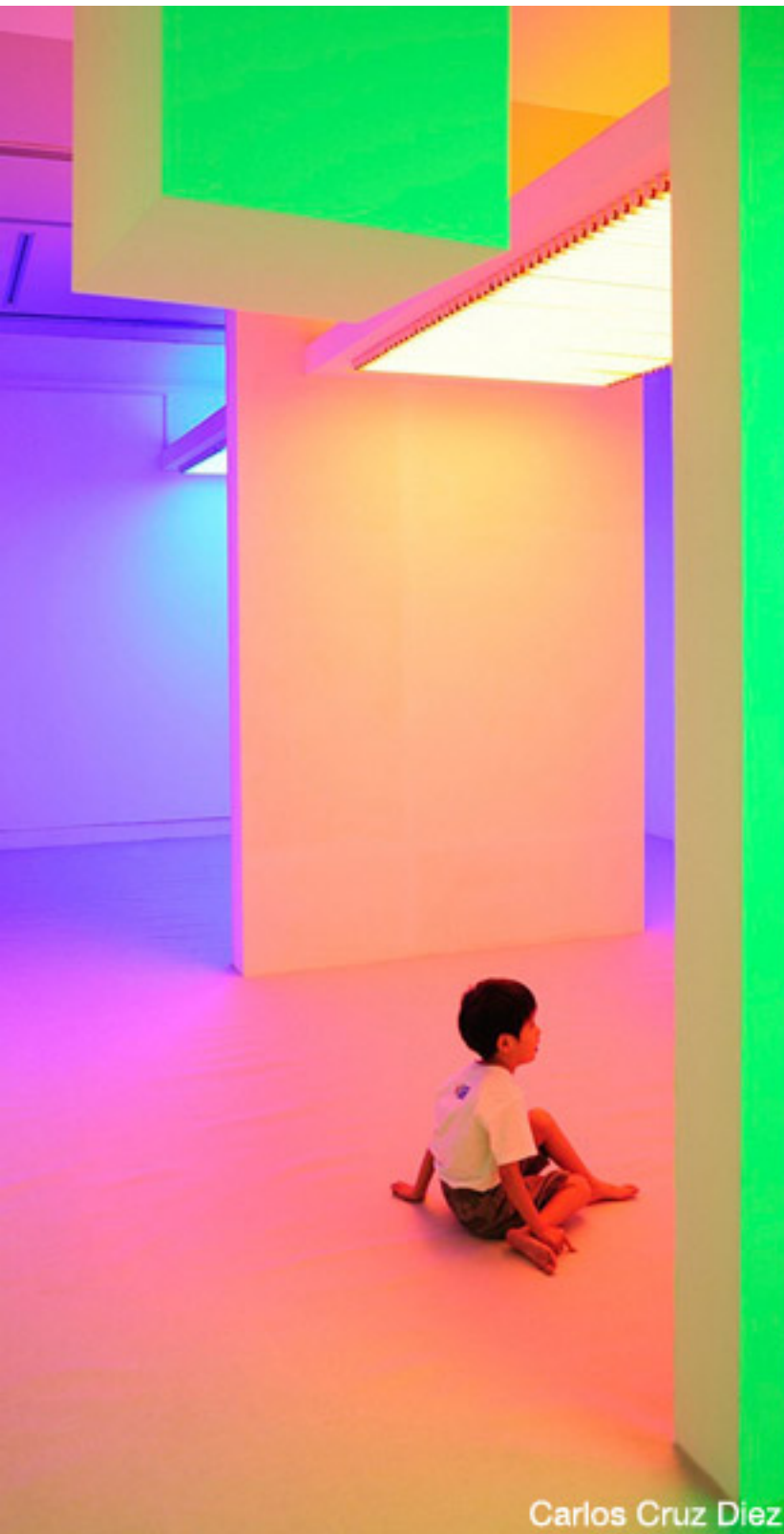


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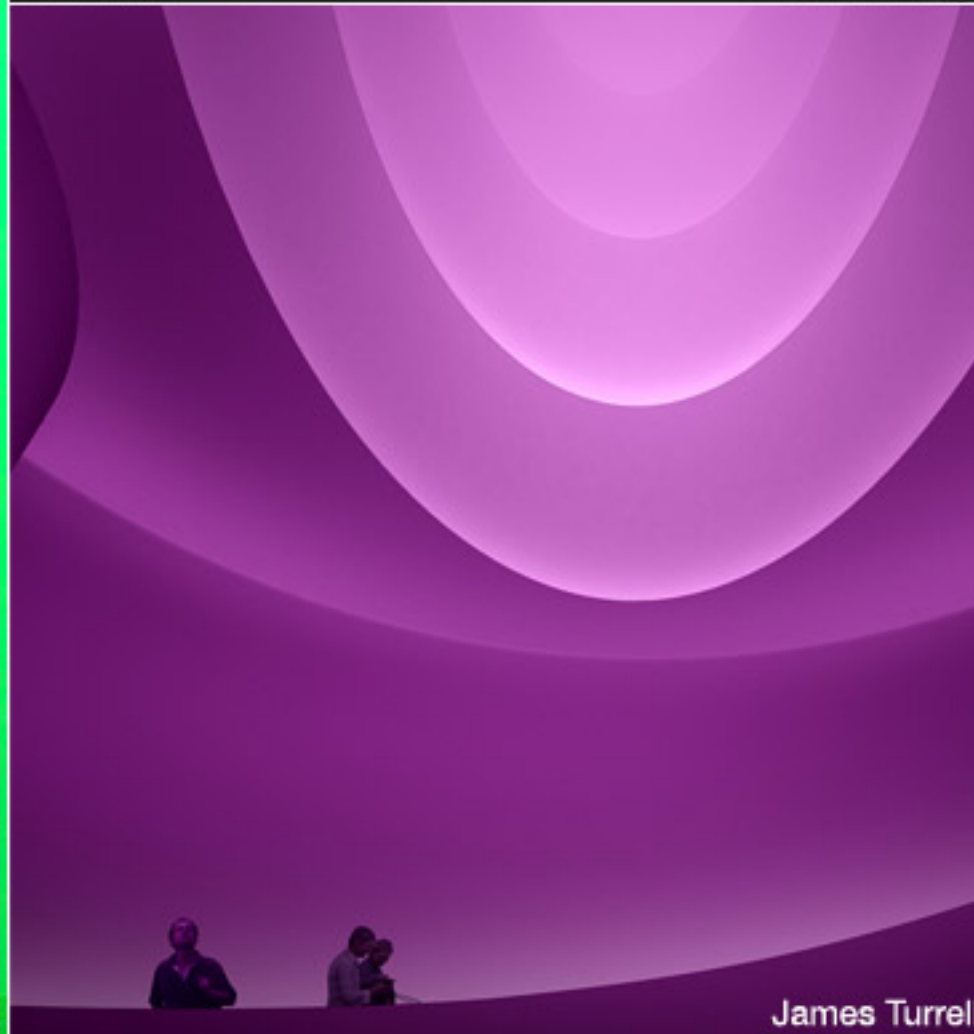


Rich Rap





Carlos Cruz Diez



James Turrell

SPATIAL SUBSTANCE

Several artists are experimenting with color on a physical level. One of the most well-known - **James Turrell** - uses color and light to create spaces and enveloping environments. Turrell created **Skyspace at Rice University**, featuring LED lights projected onto a ceiling that change color as the sun rises and sets. His work is currently on show at the **Guggenheim Museum** in New York. Here, slowly shifting LED lights create a compelling atmosphere with colors ranging from white to peach, plum and charcoal. The immersive space has a musical quality in the way the colors ebb and flow.

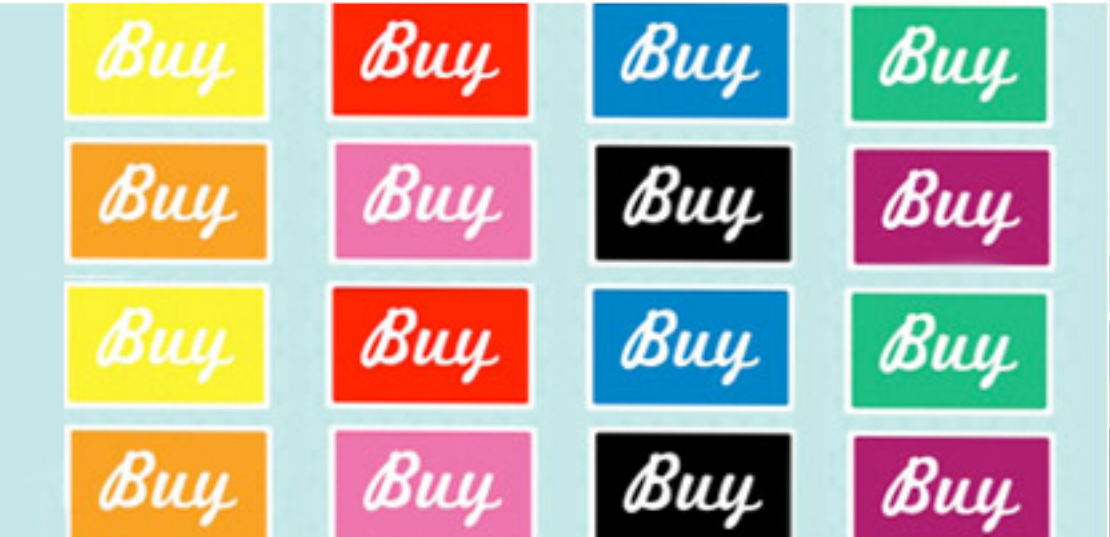
Colors, when used as substances, have the power to elicit emotional responses.

Likewise, artist **Carlos Cruz-Diez** created a series of installations called **Chromosaturacion** where color becomes a substance. The installations reveal rooms flooded with light, the latest of which consists of three rooms of red, green and blue, showing the intersection of the three hues. As the viewer walks from room to room, the immersive color powerfully floods the senses, altering perceptions and feelings.

Consumers make a decision about color in about 60 seconds. The right color brings them a step closer to buying, while the wrong color turns them away completely. As a vital communication tool, color holds strong subliminal messages: it creates a strong brand image, cements the brand's identity and ultimately makes the sale. "Color is still vital when we buy a product," says **Paul Buckley**, consumer and marketing psychologist at the Cardiff School of Management UK.

"It gives so many indications to consumers; it really does the work of a thousand words."

Selecting the proper color is critical, which is why companies are spending considerable time and energy choosing the right color. At **Topshop**, the ever-present window mannequin has been transformed into a bright spectrum of moving color. Meanwhile **Emmanuelle Moureaux** has created an installation from interlocking sticks at three Issey Miyake stores in Tokyo, as well as bringing blocks of color to create rhythm in the newly designed eyewear shop **Zoff**.

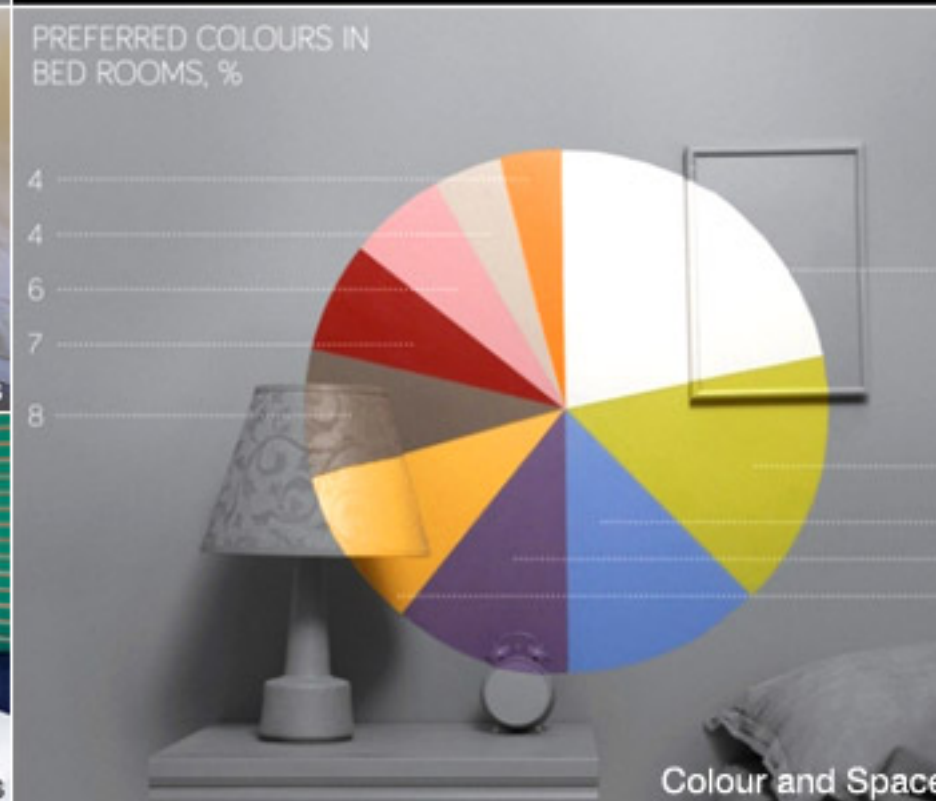
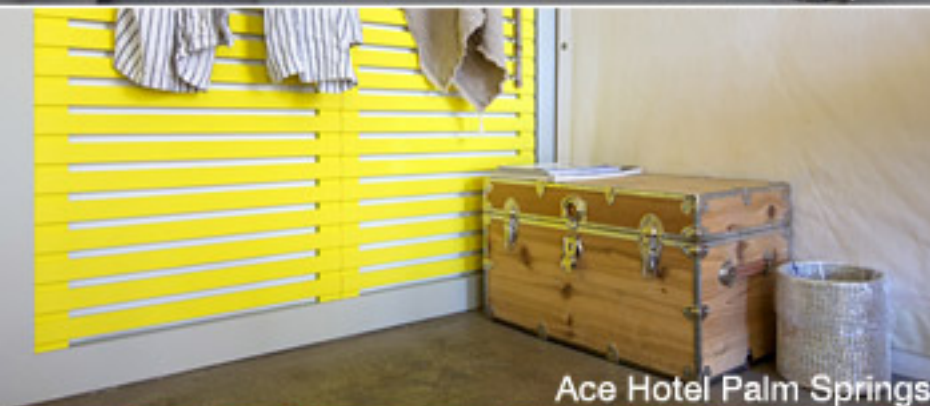


LIVING COLOR

Delving into the workings of color, **Arkitip** carried out a **color study** at Ace Hotel Palm Springs whereby five identical rooms were repainted using three different color combinations, based on **The Comex Group's** color schemes. Five journalists then visited the hotel, each staying in a different room for one night, to experience the different colors and what affect it had on their mood.

Everything changes with color; it changes the backdrop, the ambiance and our mood yet we scarcely realize its powerful impact.

Proving that statistics are better in color, **Colour and Space** is a data visualization tool that mines Pinterest data to find the most common colors in homes. Made by decorative paints brand **Jotun** and Danish designers **Mie Frey Damgaard** and **Peter Ørntoft**, it helps people redecorate their homes and informs brands on what color product to produce, as well as revealing our relationship between color and space in different areas of the house.

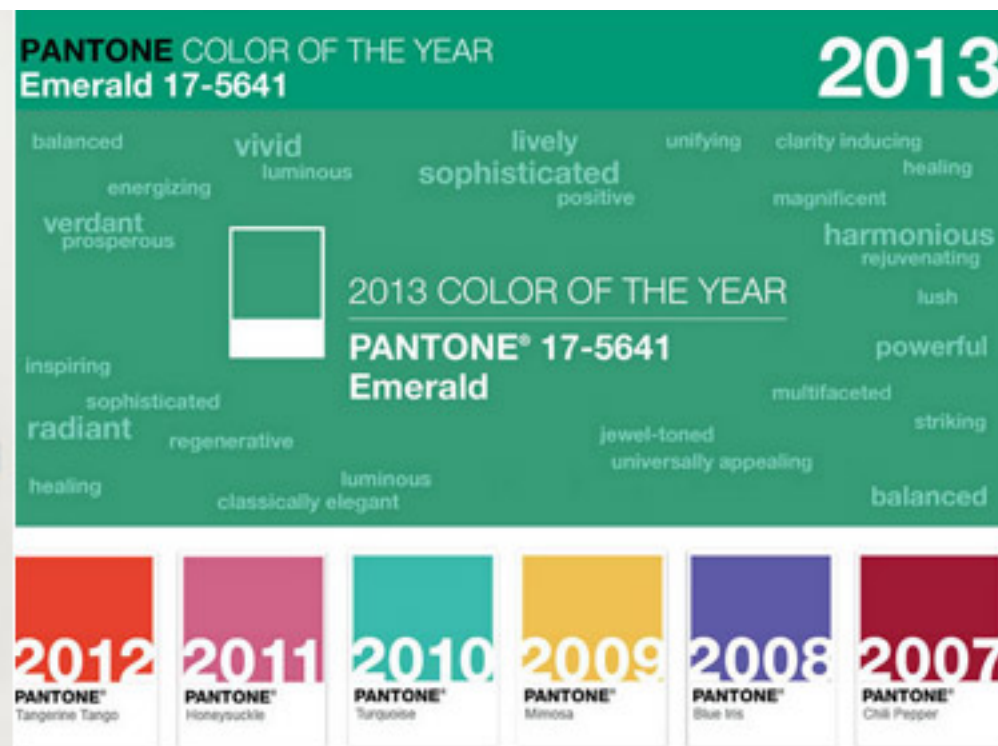




Hella Jongerius for KLM



designfabrik®



COLOR (R)EVOLUTION

Today, professional colorists are an integral part of design management teams at such global corporations as Hilton, Disney and Toyota. Color is moving beyond the cliché to capture the hearts and currency of consumers. Dedicating its time to the labyrinth of color, **BASF's designfabrik®** has over 20,000 colors at its fingertips, which when combined with 70 plastic finishes can create over one million color impressions. This penetrating approach to color goes to show that surface is intrinsically linked to color, as well as revealing its crucial role in the effect of a given tone.

Brands are looking for more and more actionable trend intelligence to make more informed color decisions.

To celebrate its 50th anniversary, **Pantone** created an infographic, highlighting the history and evolution of color through color. Light is another major factor that influences the selection of color, as evidenced by **KLM's** newly designed **world business class cabin**. Headed up by Dutch designer **Hella Jongerius**, the team developed the palette by bringing fabric swatches onboard flights to observe how colors could be perceived differently in various lighting conditions.

An understanding of **cultural codes** is essential in business. Colors carry different connotations, and certain colors cross cultural boundaries better than others. What is deemed neutral in one country could be sharp in another, and a positive color in one culture could be negative in a neighboring country. In most of the West, white is pure; in China, however, it is the color of mourning, while red means happiness, rather than danger or sexiness. Targeting the codes of color, **International Color Guide** delves deep into various cultures and provides an overview of the symbolism of color within each culture, questioning how well we know color.

Perceptions of color have been intrinsic to many societies for centuries so marketers must be aware of the symbolic impact of brand colors.

As noted on Bloomberg Businessweek, “Businesses will see greater success in international marketing when they research important color meanings and use those colors appropriately to reach their target markets.”



United Kingdom



LOST IN TRANSLATION

China

India

The world is more color-coded than ever. It's becoming increasingly glocal too, as global companies embrace locality.

Thinking globally yet acting locally is a key trend for future businesses, and this also extends to the use of color.

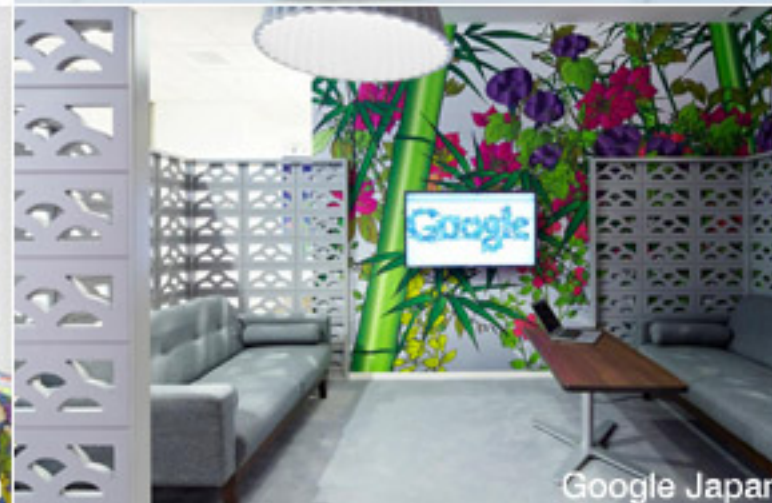
Google, for example, requested that each of its national offices around the world reflect the unique culture of its location. In Japan, the **new office**, designed by **Klein Dytham**, now references traditional Japanese festivals, bathhouses, fishponds and timber houses. In keeping with the brand's global identity however, different zones are marked by different colors and follow the palette of Google's logos; some of these logos can be spotted in the patterned wallpapers, which the architects based on Japanese architecture. Other Google offices also bring elements of local history and culture into the space: the Tel Aviv office includes a meeting area filled with orange trees, while the London headquarters feature Union Jack flags and allotments where staff can grow vegetables.



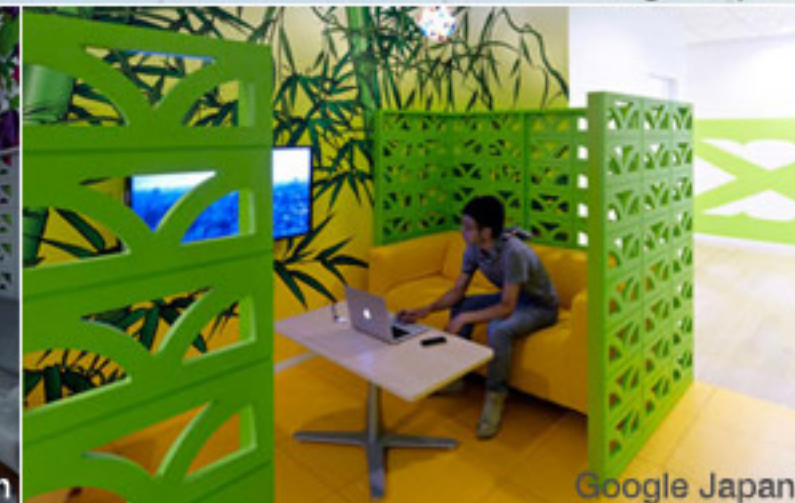
Google Japan



Google Japan



Google Japan



Google Japan



In ancient Egypt, the Pharaohs wore a white crown. In India, the color connects to divinity and wisdom, while in China and Japan it is the color of mourning. Intricately linked with moonlight, it is also said to illuminate our deepest fantasies, echoing the practices of the ancient Greeks who wore white to bed to ensure pleasant dreams. The sum of all colors, it now typifies pure thoughts. It makes us pause – encouraging us to clear away clutter and embark on fresh beginnings.

“White” argued Kandinsky, “resonates like a silence that can suddenly be understood.”

Despite its blank sense of nothingness, there are more shades of white available commercially than any other color. Japan has six different terms for the color; the Inuit community has perceived seven different varieties, while BASF has a startling 1,735 shades to hand – and every brand seems to want its own version. Pantone, a global authority on color, further confirmed its ever-increasing popularity stating white to be the best selling color of the classic American tee.



PIGMENTS



Lead white is one of the most manmade pigments and dates back to the 4th century BC. A byproduct of lead, its purity depends on the purity of the lead. Despite its brilliantly white quality however, it is toxic and today is only sold to artists and for industrial purposes.



First introduced in 1840, zinc white has a much colder, cleaner appearance than lead white and doesn't cover nearly as well, and it's far less expensive. When used in its pure form however, it is non-poisonous, permanent, and will not yellow.



Kaolinite is a naturally occurring soft clay, first discovered at the Kao-Ling Mountain in China. It is an essential ingredient in the manufacture of china and porcelain, and is widely used in the making of paper, rubber and paint.



Titanium white is the white of the 20th century. With a tinting strength superior to both lead white and zinc white, it is also the strongest, most brilliant white available to artists in the entire history of art. Approximately 4.6 million tons are consumed annually worldwide.

Yellow is a color with extremely positive associations. In most cultures, it is primarily linked with the sun, and therefore positivity, growth and abundance. Yellow is also representative of Buddhism and spiritual enlightenment. In India, it is linked to saffron and spices while in **China**, during the Qing Dynasty, it was a color that could only be worn by the emperor. Meanwhile in Russia, yellow is a traditional wedding color.

Yellow is the color of highest visibility, and is the first color infants can see.

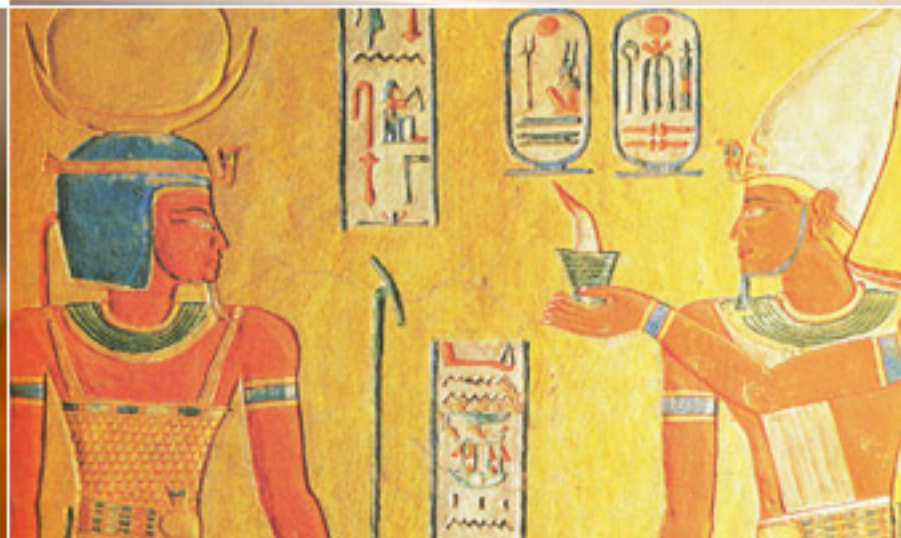
At the darker end of the yellow spectrum, orange emerges as a color of vibrancy - it stimulates appetite and encourages social behavior. Orange is a volatile color that sparks either positive or negative reactions. In The Netherlands, orange is the symbol of royalty, and has recently been used extensively by Marcel Wanders at Amsterdam's new **Andaz Hotel**. Artist **Alexa Meade**, who coats sitters in paint, exemplifies the beauty of orange and yellow in her *Mango Lassi* portrait.



Alexa Meade



Qing Dynasty



Andaz Hotel Amsterdam

PIGMENTS



Yellow ochre is the oldest yellow pigment. Taken from the earth, it has been used since 40,000 BC, originally for cave paintings and body decoration. It has been used by tribes in Africa, New Mexico and Australia, with various connotations, often symbolizing the sun and the purity of the earth.



Yellow weed, *Reseda luteola*, was used for dyeing from the neolithic period up until the invention of chemical dyes. It was used as a dye in Turkey and North Africa, as well as a lacquer and to decorate wallpaper in the 18th century. Originating in India, **turmeric** is cultivated as a spice, but is also the most utilized dye plant in Asia.



Naples yellow is a lead color that was used as early as 500 BC. It creates a very permanent color but is rarely now used in its original form due to toxicity. Used in paintings and artworks, it's apt to capture sunlight and skin tones.



Orpiment is a yellow stone with a slight sparkle, recalling the luster of metallic gold. An important trade item in the Roman Empire, it was originally used as a painting pigment, but like Naples yellow, is highly toxic.

Red is the color of fertility, danger, force and protection. It is the one color that holds more or less the same significance across cultures and continents. In **China**, it is traditionally worn at weddings to symbolize joy. Red stimulates attention and focus, increasing blood pressure, heart rate and metabolism. Great to illicit last minute purchases, red can be used at point-of-purchase to encourage sales.

Red is the color of blood and therefore signifies life and vitality.

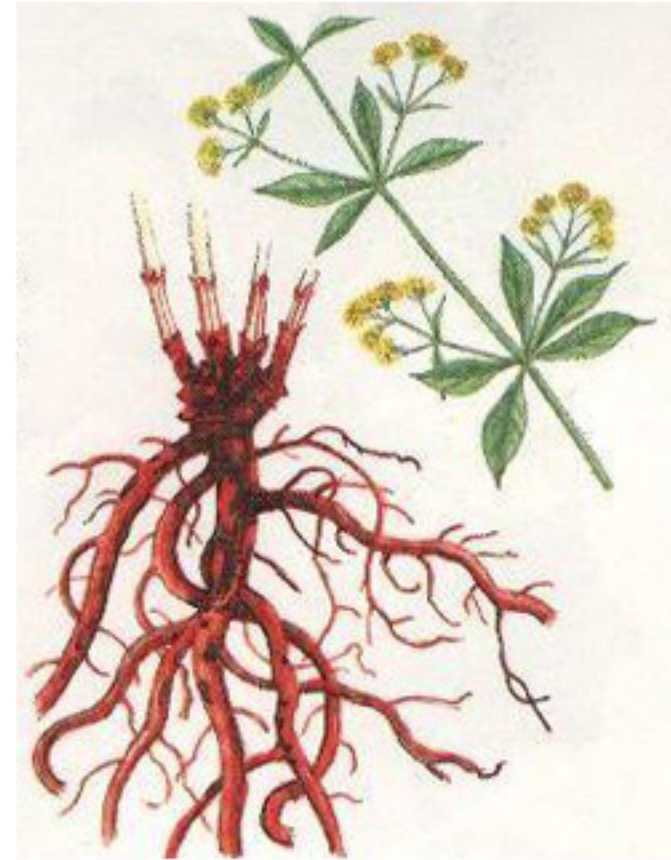
Dutch design duo, **rENs**, explored the varieties of red in their **ROOD BY rENs** project. Each piece of dyed cloth is determined by the textiles used and the saturation of the dye. **Formafantasma** has also experimented with Turkish red, in its **silk textiles series**, inspired by the archives of the Textiel Museum, Tilburg. Likewise, **Raw Color** has created 13 color panels in an experiment entitled **Tinctorial Textiles**. Researching natural pigments from three plants: madder root, woad and reseda, the result is a beautiful selection of semi-translucent panels that layer to create further hues.



PIGMENTS



Carmin is a bright red colored pigment produced by the scales of cochineal insects. As well as its uses in fabric dyeing, carmine can be used as a food dye, and a colorant for make-up products. Originally discovered in Central and South America, it was brought to Europe in the 16th Century.



Madder or *Rubia tinctorum* is the traditional vegetal source of red pigment. Used since ancient times to dye leather and woven fabrics, it is believed to have originated in India and then spread to the Mediterranean to develop what is known as Turkish red, a very fast red dye used to color cotton.



Brazilwood dye comes from the *Caesalpinia* tree and appears as a light brownish red, like mahogany. This dye produces rich reds, with vibrancy and is inexpensive and easy to use. Upon discovering Vera Cruz, Portuguese explorers renamed the country Brazil, after the plethora of Brazilwood trees growing there.



Vermilion is created by synthesizing mercury and sulphur into cinnabar; the longer the substance is ground, the finer the color becomes. The color has global appeal - used in China for lacquerware, it is often referred to as Chinese Red, while in India women use it to mark their hairline to signify marriage.

Poised between red and blue, **purple** has both warm and cool properties that uplift and calm the mind. For China, it is a high-class color, associated with the unity of yin and yang. In Japan, purple is the color of privilege; in Thailand, it signifies mourning; and in Ukraine, patience. The Tibetans regard it as sacred, while Iranians believe it to be the color of what is to come.

A thoughtful color, purple is considered the color of poetry.

Adding purple to a working environment is said to benefit creativity; however, it must be noted, it can cause unrest or uneasiness unless the undertone is clearly defined. Generally speaking, purple is also the color of choice for teenage girls. Marketers should be aware that using purple effectively can highlight a sense of luxury and richness. Depending on the shade and its positioning, purple can be exciting and energizing or mysterious and mystical. That's the beauty of purple – it has depth, a dreaminess, and an inner voice. As **Luciana Boccardi** added, it is, without a doubt, the color of fairytales.



PIGMENTS



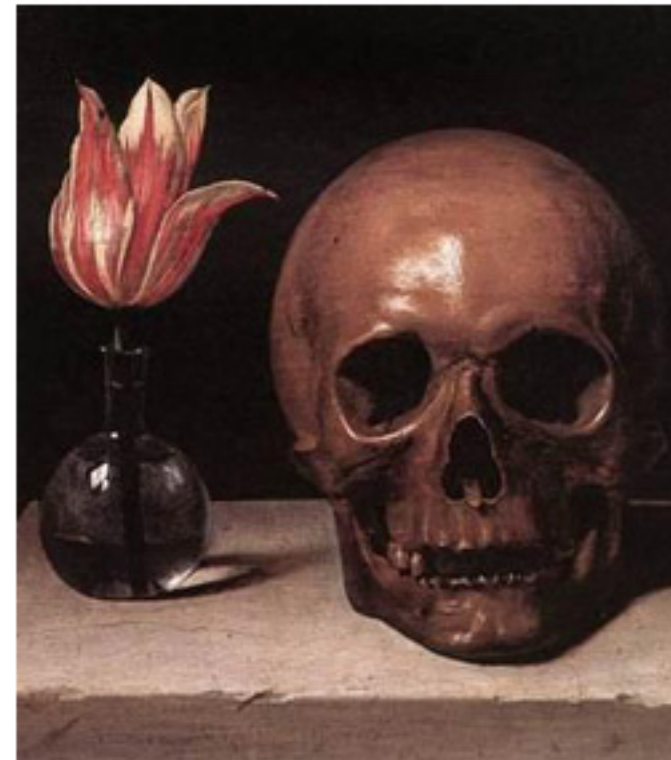
According to Roman mythography, **Tyrian purple** was first discovered by Heracles, or rather by his dog whose mouth was stained purple from chewing snails along the coast of Levant. One gram of this dye is made from the secretion of 10,000 of these large sea snails, which not only explains its high price but also the color's historic connections with wealth and status.



Cobalt violet was the first modern synthetic color in the purple family, manufactured in 1859. Similar to its older sister cobalt green, its drawbacks included high cost and weak coloring power; it was quickly replaced by the cleaner, stronger pigment manganese violet.



Hematite and **manganese** are the oldest pigments for the color purple. They were used by Neolithic artists in the form of sticks, or ground and mixed with fat, for use as paint. Hematite comes from the Greek word *hema*, meaning blood. Manganese violets are popular for artists' colors, cosmetics and plastics.



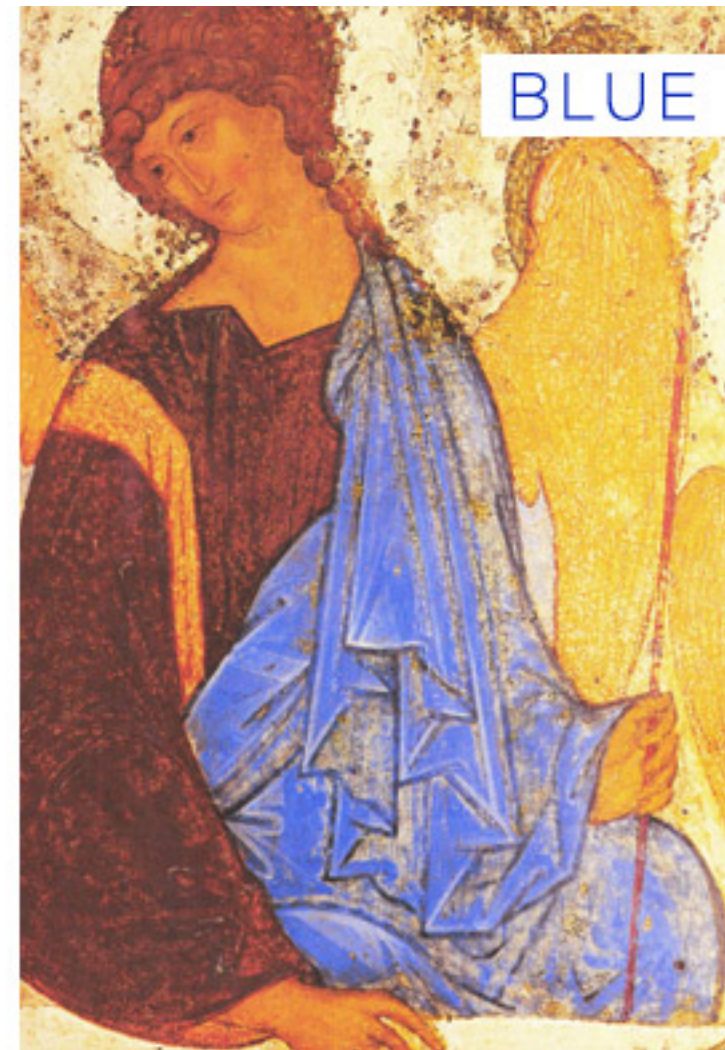
Traditionally associated with a synthetic reddish purple pigment, **caput mortuum** derives from iron oxide. The term was originally used in the 17th century by alchemists referring to the "worthless" residue left after experiments. Today, in non-pigment form we would probably call it rust.



“Blue has no dimensions. It is beyond the dimensions of which other colors partake,” artist [Yves Klein](#) wrote in 1957. In an attempt to prove this assertion, Austrian architect [Peter Kaschnig](#) covered a house in ultramarine paint and remained there for up to 12 hours, after which he claimed the color offers very little relief. Despite blue’s lack of nuance however, it is still the number one color choice.

Many consider blue to be the safest global color because it has positive or at least neutral connotations in most countries and cultures.

Research has shown blue encourages communication, inviting contact and promoting interaction; notes written on blue paper are recommended for remembering important information. Historically speaking, painters have used blue to represent heaven, and in Christian works of art the Virgin Mary is frequently wearing blue garments. Rare in nature, blue pigments were affordable only to the wealthy; hence the association with aristocracy, royalty and the term *blue blood*. Today, it is regarded as the color of distance, of the ocean and the sky, and used to show perspective.



Peter Kaschnig



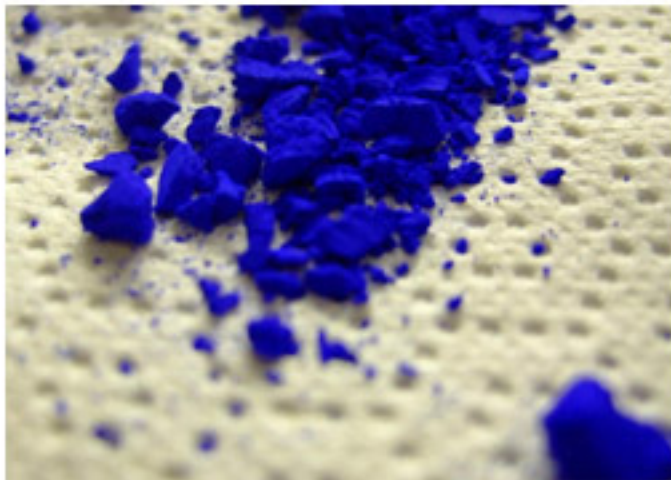
PIGMENTS



The first blue pigment was [azurite](#), discovered by the Egyptians and used to create Egyptian blue, which quickly spread throughout the ancient world. During the Middle Ages, the recipe for Egyptian blue was lost, resulting in azurite and ultramarine being the only blue available. Produced artificially from the 17th century, it was later replaced with Prussian blue.



[Egyptian blue](#) is one of the oldest manmade colors commonly found on wall paintings in Egypt, Mesopotamia and Rome. It is a very stable synthetic pigment of varying color with many specimens well over 3000 years old appearing to have changed little by time.



[Indigo](#) was probably used as a painting pigment by ancient Greeks and Romans. Marco Polo, however, was the first to report on the preparation of indigo in India in the 13th century. Indigo provided the *blue* of denim jeans, while the word *jeans* comes from the French phrase *bleu de Gênes* - literally the blue of Genoa.



A [new pigment](#) based on manganese was recently discovered at OSU, completing the quests of ancient Egyptians, the Han dynasty and Mayan cultures for thousands of years. The near-perfect blue pigment is safer to produce, much more durable and should lead to more environmentally benign blue pigments.



The natural world's most intense color belongs to a tiny African berry. Iridescent in color and metallic, it outshines any other plant or animal substance in the world. Known as [Polia condensata](#), its marvelous, magical hues are a result of layers of cells that refract light in a manner usually seen in butterfly wings and beetle shells.

Green is regeneration and rebirth; it refreshes and restores; and is the color of spring. Many cultures associate blue and green together, and studies show that greens with an undertone of blue are among the more popular colors.

Commonly found in nature, green is the image of freshness, of breathing and therefore of life; from this stems the symbology of hope.

For Australian Aboriginals, it is the color of the land, while the Middle East celebrate the New Year by saying “green.” It is also the emblem of the Muslim religion; a protective color for the dead in Egypt; and a popular choice in Japan and for the Cherokee community. Having said this, green has also garnered mysterious and sometimes malign properties that can be summed up in the symbolism linked to the emerald, often deemed to be color of envy. Nowadays, green is perceived as a calming and serene color that brings balance to the human brain.



PIGMENTS



Another artist's pigment, sap green, was popular until the 19th century for its lively hue and transparent qualities. It originally derived from the berries of the **buckthorn** plant, native to Northern Europe. Its color tends towards olive and was especially popular in the Romantic era of watercolor.



A new generation of greens was introduced in the late 18th century: cobalt green, emerald green, and viridian. **Viridian** is a non-poisonous color that replaced verdigris and emerald green as a glazing color by the turn of the 20th century.



Terre verte is the name given to a number of minerals, particularly celadonite, found in Verona, Italy. The light, cold color was popular in medieval tempera paintings and was used under pinks to neutralize skin tones. Cheaper than malachite, it was popular until the advent of synthetic hues.



Verdigris is formed when copper corrodes. It can be achieved naturally by exposure to air or seawater, or through the purposeful application of acetic acid. It was used frequently as an artist's pigment until the 19th century, as it was the most vibrant green available at the time, but lost popularity due to its unstable qualities.



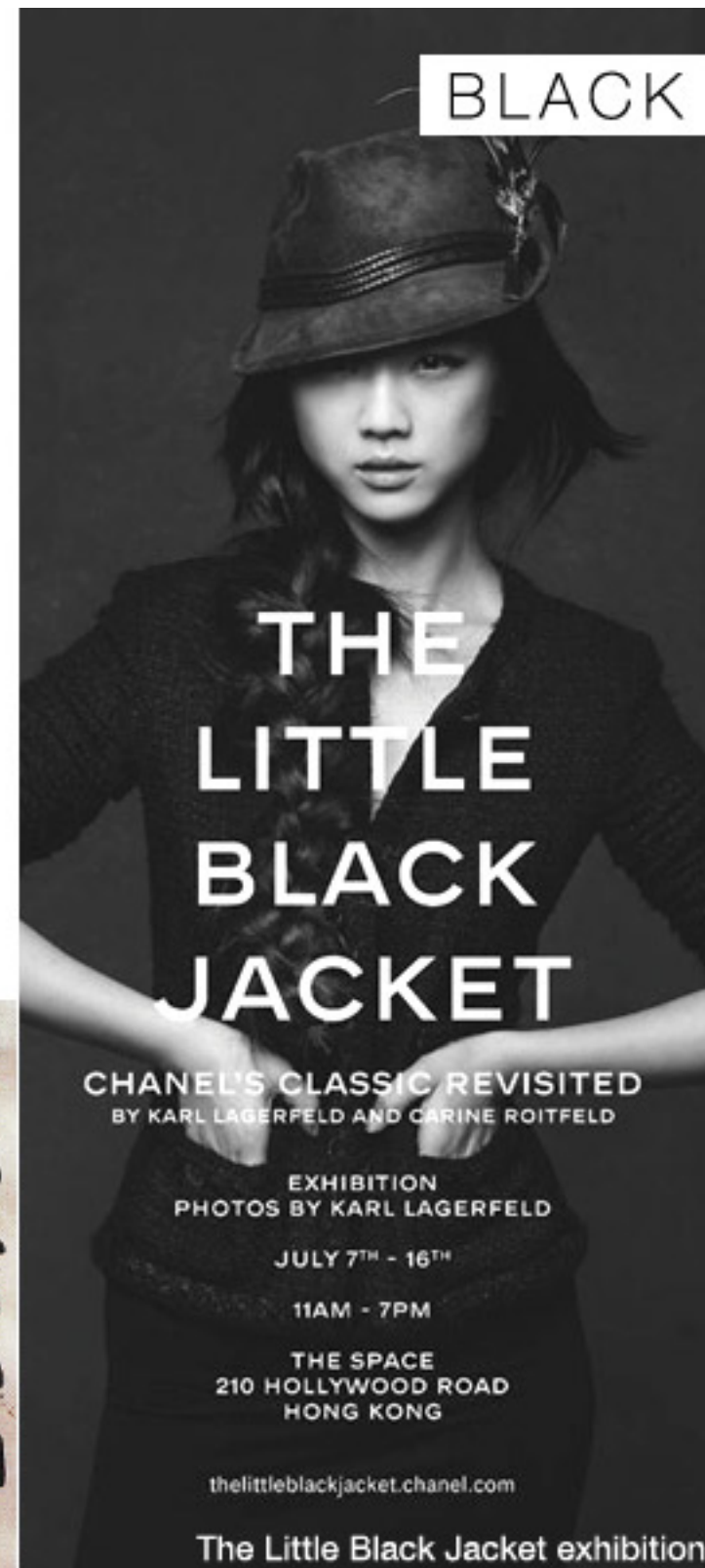
Weathering and oxidation of copper ore allow the beautiful turquoises and greens of **chrysocolla** and **malachite** to occur. Malachite is distinctive for its ringed patterns. As a gemstone, malachite is believed to protect children especially, and when worn appears to reflect the true feelings of a person.



White reveals and black conceals. A complex character, there are two sides to this color. Bound with superstition, and with a depth that exceeds any other color, it is often regarded as a bad omen. In some civilizations however, it has no negative connotations and is not even regarded as a symbol of mourning: for the Chinese it is a yin (female) color and thus earthly, instinctive and maternal. In Arabic culture, black ink was used to write the Quran and is therefore a strong symbolic color, while in India the eyes of the children are lined with black kohl to safeguard their souls from evil.

With the ability to swallow all other colors, Rumi called it the pinnacle of the palette.

Pierre Soulages says it is the color of his childhood, while Renoir called it “the queen of all colors.” Today, black is seen as sophisticated, elegant and classic – in all cultures – and has established itself as the quintessential color of luxury and power. This enduring legacy is evident in the traveling Chanel exhibition entitled, *The Little Black Jacket*.



PIGMENTS



Vine black was traditionally produced by charring desiccated grape vines and stems. In medieval times, it was referred to as the best of the blacks; however, it is now referred to as more of a bluish-black, given the coolness of the greys that it produces in its midst.



Lamp black is a type of carbon black obtained from the soot of burned fat, oil, tar or resin. It was commonly used in Egyptian tombs and murals as an alternative to charcoal, which was less pure and dense. Dating back to prehistoric times, it is one of the oldest pigments still used today.



Bone black is an impure black carbon pigment prepared from charred bones. For the best grades, pure ivory was also burned. Treasured by painters for its warm tones, it has been found throughout the history of art – notably in the deep velvety recesses of Rembrandt's paintings.



Israeli horticulturists have developed a new gothic crossbreed of tomato that is red on the inside but black on the outside. Called *Black Galaxy*, its dark color comes from a pigment similar to that found in blueberries; photosensitive, the longer it's left on the vine, the darker it becomes.

"The best color in the whole world, is the one that looks good, on you!"

- *Coco Chanel*