



A Color that is a Form of Thinking

Carolyn Christov-Bakargiev

Color is an obvious aspect of the world, and yet so elusive when you stop and think about it. Certain material surfaces absorb all electromagnetic waves except those that bounce back from them. These waves hit our trichromatic retinas and then through some form of alchemy, unknown to the finest neurologists, they are processed in the V4 part of our brains in the back of our heads where we translate and “see” them as hues of particular saturation or brightness. Different species see different colors and some have more cones, or photoreceptor cells, in the retina than we do.

Because of our involuntary mental ability called “color constancy,” our brains correct and render uniform all the myriad and changing perceptions we experience (within boundaries) in the world. In other words, we transform changing and vibrating hues until their color appears constant and stable within those boundaries: an apple is overall green, a lemon is overall yellow, etc., thus achieving an awareness of a world made up of many different bodies, animate and inanimate. Color constancy allows us to distinguish one thing from another rather than experience the world as a large blur or blob of shifting colors and fluid shapes, because we change what we perceive to make areas of color homogeneous.

Also, our brains see colors a fraction of a moment before they distinguish shapes, so we see a red ball first as a red something and then as a ball. For thousands of years we ground rocks, crushed flowers, and boiled small bugs to extract from them particles detached from their original thingness; we called them pigments and we made them stable by mixing them with various other natural elements in order to reproduce the colors of flowers, of fish, of butterflies in our human world—so poor in color diversity, so rich in analytical thinking. We could call this fooling around with the elements and seeing how they recombine “analog” chemistry. We did it so that we could paint, so that we could dye, so that we could signal, so that we could decorate, so that we could seduce, so that we could love. We sought to make color eternal and stable, yet often failed. We learned color by subtraction—how to mix colors, aware that too many of them together would blend into gray, brown, or black, because all rays would be absorbed and none returned toward our eyes.

So we think of color perception as something concerning vision, and vision has been overwhelmingly criticized over the last fifty years as the most hierarchical of senses,

Gustav Metzger
Supportive, 1966–2011
7 Kodak SAV 2050 slide projectors
with control units, rotating polarized
filters, liquid crystals (detail)
500 x 2300 x 900 cm
Courtesy ©mac^LYON collection
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one that allows for detachment and power over what is being looked at: the gaze of the guard in the Panopticon. Yet color vision is perhaps the most sensual of all the senses, or at least it is no less about touching than so-called touch.

In 1704, Isaac Newton told us that colors were objective and measurable, that they were like numbers—usually invisible—yet surely “out there” in the world. A century later, the empirical experimenter Johann Wolfgang von Goethe published his *Farbenlehre* (Theory of colors, 1810), in which he ridiculed Newton. He proved that Newton’s theory of the spectrum as white light split into differently colored rays when viewed through a prism (like a rainbow through mist after the rain) was just one specific case (albeit a perfect one) in a multitude of other possible cases, and that strange colored things occurred at the boundaries of black when looking through a prism. He also named the “afterimage,” the complementary color (such as green) that we see when we look at its complement for long enough (in the case of green, red), thus proving that color is produced in the brain. It is perceived differently according to what is next to it.

To liberate color from its obligation to faithfully represent something in the world outside, and to see it theoretically, abstractedly, some artists in the mid-nineteenth century such as Édouard Manet chose one simple element, such as a lemon, and centered it in their paintings. This was a democratic gesture, removing all the exotic and expensive delicacies from the still life, and leaving only the simple fruit that could be found in his garden in Paris or in the South of France. This gesture also prefigured modern abstraction and the monochrome.

In the early nineteenth century in Germany, a follower of Goethe’s experimental attitude, Friedlieb Ferdinand Runge, changed the world. Messing around with coal tar, a derivative of the industrial processing of coal that was up until then thrown away, he produced the first chemical color to be synthesized from carbon fossil fuel. He called it cyan blue, and it was aniline. It was a color made out of dark brown by tearing carbon fossil from the bowels of the Earth—a kind of magic proving the unstoppable progress of science. He published his book of chemical color experiments, *Der Bildungstrieb der Stoffe* (The formative tendency of substances), in 1855. Walter Benjamin expert Esther Leslie (Benjamin, incidentally, color-coded his thoughts and notebooks well before highlighters were invented) wrote about this in 2005, showing how the chemical turn of the nineteenth century had ushered in a positivistic blind faith in modernity’s ability to harness the universe through science—we could make virtually any color in the natural world artificially.¹ This blind faith in progress and science ultimately transformed into the creation of standard palettes for color, with names and numbers attributed to them: RAL and Pantone of the 1920s and 1930s, later those of IG Farben, the color company that also created Zyklon B. In 2009, Michael Taussig returned to this subject in *What Color Is the Sacred?*²

“Toward the end of his life,” Paul Cézanne wrote of Tintoretto in the late nineteenth century, “he who had a chromatic range that could rival with rainbows, said that

¹ E. Leslie, *Synthetic Worlds. Nature, Art and the Chemical Industry* (London: Reaktion Books, 2005).

² M. Taussig, *What Color Is the Sacred?* (Chicago: University of Chicago Press, 2009).

he liked only black and white... His daughter had died... It is because colors are evil, torturers, you understand. To paint a swirling rose of joy, he must have suffered a great deal."³ While chemistry produced ever more colors in the late nineteenth century and at the start of the twentieth—and the citizens of electrically lit cities reveled in these marvels while voting in Fascist governments—modernist architects, philosophers, and intellectuals shunned the facile usage of colors. They did this in the spaces for art (the white cube), in the subject matter of their studies, and in their wardrobes, preferring the gray of Theodor Adorno or black and white clothes. Colorful dress was acceptable only in warm or hot countries, non-Western indigenous cultures, and the association between the spiritual and color was deemed naive and primitive. Thus radical expressionists and avant-garde artists imbued in Theosophy and Anthroposophy, from Wassily Kandinsky and Gabriele Münter to Marianne Werefkin, from Alexej Jawlensky to Mikalojus Konstantinas Čiurlionis, from Giacomo Balla and Luigi Russolo to František Kupka, from Hilma af Klint to Paul Klee, were suddenly relegated to the status of “early modernists,” unable to understand that they were deluded in their ideas about synesthesia—the relations between color and music, color and the vibrations of light.

As color became standardized, it became Pop: a green, blue, or red Marilyn was the same as long as it caught people’s attention, and sold like cans of soup. Thirty years after television and color photography had become a normal presence in people’s lives, in the mid-1990s came the digital turn and the birth of a screen-based society, dependent on devices. With today’s handheld smartphones, all of a sudden, color has taken yet another turn in our lives. Today, the “elsewhere” generation, always in touch with some “other” place through social media, spend more time training their retinas on RGB (red, yellow, blue) colors—those of the backlit screen, those of the spectrum that Newton was talking about, those that when mixed together turn into white. Offline, analog colors—colors of pigments printed onto paper with CMYK (cyan, magenta, yellow, black) inks, the color of cloth slowly imbued with extracts from a cola nut (Otobong Nkanga), the Ottoman red of a boiled Armenian cochineal bug (Aslı Çavuşoğlu)—become hard to distinguish one from another. We “see” fewer tones in the world outside of our screens. As digital palettes are standardized and commercialized, direct vision seems correspondingly more sad and dull—not “bright enough.”

Telling the stories of colors (Michel Pastoureau), thinking about colors and pigments historically, and differently, creates avenues for their individuation, avenues of attention. We wonder if there are more complex ways to think about colors. What if Goethe’s “afterimages” could lead us to the notion of “before-images,” a term recently coined by Bracha Ettinger,⁴ so that what we perceive as color in the outside world is understood as a residual image harking back to an electrical neurological activity in the brain, like when we see chakra colors during intense meditation, or in dreams and hallucinations? And what are those colors produced in the brain, in the deepest darkness, in black holes, by fish in the

³ Quoted in D. Formaggio, *Tintoretto* (Milan: Arnoldo Mondadori, 1951), p. 22: “Verso la fine della sua vita, lui, che aveva una tavolozza che poteva rivaleggiare con l’arcobaleno, diceva di non amare altro più che il nero e il bianco... Sua figlia era

morta... Per il fatto che i colori sono maligni, torturatori, capite. Per dipingere questa rosa di gioia, turbinante, bisogna avere sofferto molto.”

⁴ B. L. Ettinger, Turin lecture, Fondazione De Fornaris at GAM, Turin, December 5, 2016.

deep blue sea (Chus Martínez), forms of light that do not come from the sun nor from any externally originated electromagnetic wavelength? Does this not mean that thought can also be produced in sheer bodily perception, in the touching of the retina and the meanderings of V4? That nature, as Goethe called it, is theory? And if so, then wouldn't Annie Besant's colored thought-forms be nothing esoteric, but merely the study of our abilities not only to see color constancy within bound forms, but also to break away from those boundaries that we create to distinguish all the animate and inanimate makers of the world, and allow a deeper form of perception in order to see colors as they constantly interact (Karen Barad), producing auras and vibrations, instability, entanglement, and cosmic continuity? Although, or perhaps because, colors are used to seduce, manipulate, design, and control behavior, can we muddle them up, play and produce a different logic, a different color from that of our screens? A color that is a form of thinking? "They needed coloured fire, and had only ground earths," Besant said of visual artists in 1905 as they tried to reproduce with pigments the bright images produced in our brains. Now that we have only "colored fire" and liquid crystals (Gustav Metzger) on our screens, we need new tools.

The gecko can distinguish blue from gray in the dark. Bees and butterflies see more colors than humans, their vision reaching into the ultraviolet range. They also appear variously colored to us, and their hues shimmer. To perceive a surface as shimmering means to experience quickly changing colors and brightness. When bombs fall, the differently colored animate and inanimate things that make up our cities, streets, homes, people, and gardens fall into rubble; they mix until they reach an entropic shade of brownish gray like at Ground Zero or in Aleppo. And so Henri Matisse, in the middle of World War I, and again in World War II, painted paintings of lively, vital color. Artist Etel Adnan, in late 2016, told me that "color is life. And as long as we live, we are alive."

This exhibition welcomes the vital impulse of colors.