Thinkers, artists, and scientists have long debated the nature of color: what are its origins, and how does it affect us?

Early humans watched their fires blacken the ceilings of the caves where they lived. They saw blue and red in the sky and brown and green on the ground. In time, people began to understand that color not only made the world more beautiful, it was also able to convey emotion and symbolize power. Using colors they extracted from insects, plants, and minerals, primitive humans copied animals, painting their bodies to signal aggression toward an enemy or to attract a mate.

Over the centuries, the sources of colors such
as blue, purple, and red were carefully guarded
and were often worth as much as gold. In
the 19th century, a young chemistry student
became the first to manufacture a synthetic¹
dye,² and suddenly the world became a much
more colorful place. By the 20th century,
as scientists discovered the psychological
effects of colors, everyone from advertisers to
educators found ways to make use of color to
influence our feelings and behavior.

RED

Red, the color of human blood, has traditionally symbolized intensity, fire, love, and anger. In Eastern cultures, it also ▲ The sumac leaves of New England, U.S.A, display an amazing range of color.

represents luck, wealth, and success.

- 30 In humans, the color red can send different messages. Some people redden, for example, when they are angry or embarrassed, sending a clear signal to others about how they are feeling. British anthropologists Russell Hill and Robert Barton of the University of Durham found that when opponents in a game are equally matched, the team dressed in red is more likely to win. Why? According to Barton, "red seems to be the color, across species, that signals dominance"—giving those dressed in red an advantage in sporting events. In many animal species (including humans), contact with this **bold** color causes the heart rate to accelerate. However, one of red's lighter shades, pink, can have the opposite effect on people. Men in prisons are reported to be more passive when the walls are painted a specific shade of pink.
 - Humans have also used the color red in everything from politics to advertising. Many food products in the U.S., for example, are packaged in red containers. Why? The color makes the product look as if it is advancing toward a shopper.

¹ Synthetic products are made from chemicals, not natural materials.

² A dye is a substance which is mixed into a liquid and used to change the color of something such as cloth or hair.

YELLOW

Yellow, the color we most often associate with sunshine, is found throughout nature and the man-made world as a color that commands attention; indeed, it is one of the easiest colors to see. This highly visible shade is found on everything from school buses to traffic signs and pens used to highlight important information in a text. The color is also used to caution people; soccer players, for example, are shown yellow as a reminder to behave. It can be used as a stimulant³ as well: in a number of studies, yellow has been found to help children focus on their work and do better in school.

BLUE

Blue, the color of sky and sea, has long been associated in many cultures with water, holy or religious objects, and protection against evil. Over the years, darker shades of the color have also come to represent calm, stability, and power. Dark blue, for example, is the color of the business suit or police uniform; it tells others, "I am in control" or "You can trust me." In other cultures, blue has been associated with sadness. It's common in English, for example, when feeling sad or depressed, to talk about "feeling blue," while in Iran, blue is the color of mourning, worn when a person dies.

Like pink, blue has a neutral, calming effect on people. Rooms painted blue help people to relax or sleep. (Sleeping pills are often colored blue to suggest exactly this idea.)

The color also seems to inhibit hunger. Blue food is rarely seen in nature, and when it is, such food is usually no longer healthy to consume (with the exception of certain fruits like blueberries). Thus, eating off blue plates may reduce one's hunger. So if you're planning to lose weight, try adding a blue light to your refrigerator—it will make the food inside look less appetizing. It's just one more example of the power that color can hold over us.



Popular with European painters for three centuries, "mummy" was a rich brown color made by grinding the remains of Egyptian mummies.



▲ Legend attributes the color purple to a dye extracted from a kind of shellfish. In the past, 30 g (1 ounce) of purple dye for royal clothes required tens of thousands of the creatures. Today dyeing with shellfish is still done in Oaxaca, Mexico.

³ A stimulant is something that increases your heart rate and causes you to be more active.