Simply red—why one colour became so powerful

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Cochineal: making a comeback. Credit: madame.furie, CC BY-SA

Who gets to walk on the red carpet? What makes red-letter days so

special? Where is the red line that must not be crossed? When do we go to red alert? Why do you see red? And how can one colour have such diverse meanings in our lives?

These questions are not answered by Newton's famous experiments with prisms, which led to the colour red being defined as the long end of the visible spectrum. The wavelength of light is a very abstract idea and completely irrelevant to our everyday experience of colour. It does nothing, for example, to explain why contestants in red sports kits are statistically more likely to win than those in other colours.

Red is simply sensational and its dominant place in today's world of colour owes much to events that took place many thousands of years ago. One of humankind's earliest observable activities was their decorative use of colour – in fact, it is one of the things that makes us human. And we can track down red's hold over us by tracing the way artists got their colour over time – from animals, vegetables and minerals.

Most animal reds are hidden within creatures – like blood – and are not on open display. The excavation of Neolithic burial sites has turned up jars filled with dull-coloured dried insects, kermes, which have a brilliant hidden red that was used as textile dye. It was also a Neolithic food colouring and the colour red is still associated with health today.

Colours of the New World

Another insect, cochineal, was also harvested for its red and, when Europeans colonised the New World, cochineal, or "grain", was one of their most cherished prizes. Thousands of tons of insects were shipped across the Atlantic, in a trade second only to silver. Cochineal was also used as a food colouring and, after being unfashionable for some decades, it is now coming back thanks to the unfortunate side-effects of artificial food-colourings.

The New World also provided a source of vegetable reds. Some redwood trees were harvested for their red dye and one of these was brazilwood. Not surprisingly, many brazilwood trees came from Brazil in the 16th and 17th centuries but, in the 13th century, Europe imported most of its brazilwood from South-East Asia. Brazil was in fact named after its red dye, not the other way round, just as neighbouring Argentina was named after its silver.

In Europe, the indigenous red vegetable dye was madder, which was an exceedingly valuable cash crop until the mid-19th century. The introduction of a synthetic equivalent, alizarin, completely decimated the entire agricultural sector in about a decade, but luckily, madder-growers turned to grape-growing and a new industry was born.

Blood and iron

The earliest surviving evidence of reds used for decorative effect are mineral reds. Red rocks were collected tens of thousands of years ago and they evidently had ritual significance as they featured in funerary practices and could be used in burials hundreds of kilometres from their geological source. A hint about red's significance is found in the name of the most common red mineral, haematite or "blood-stone". This was the original European "war paint" after ancient Greeks smeared their bodies in haematite before going into battle as it was supposed to staunch the flow of blood. This is ironic, since haematite was also a source of iron, the metal that caused most bloodshed.

But not all the historic reds were natural. Some were synthetic. Yellow earths could be turned red by putting them in fire, and many of the prehistoric reds were actually manufactured from yellow earths. (Today, the same relationship is found in the artists' pigment "raw sienna", a yellow earth, and "burnt sienna" a red.) The purposeful transformation of yellow earth into reds pre-dated the firing of pottery.

Iron smelting too, probably came from experiments in the ritual preparation of synthetic pigments and cosmetics, so the metal could well be a by-product of magical practices in turning stone red. And synthetic red things have retained their magic, after all, thanks to Harry Potter, we now all know that the Philosophers' Stone is red.

A "red thread" twists through the historic use of colour from animals, vegetables, minerals and synthetics. That thread associates the colour with transformation, dynamism and, above all, life. It is the colour most closely associated with power and the dangers associated with it – what works for you and what can work against you. All things change, but you hope they'll go your way – something red clearly signifies and why red is "ingrained" (a word that comes from cochineal's dyeing power) in many cultures as the colour of luck.

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