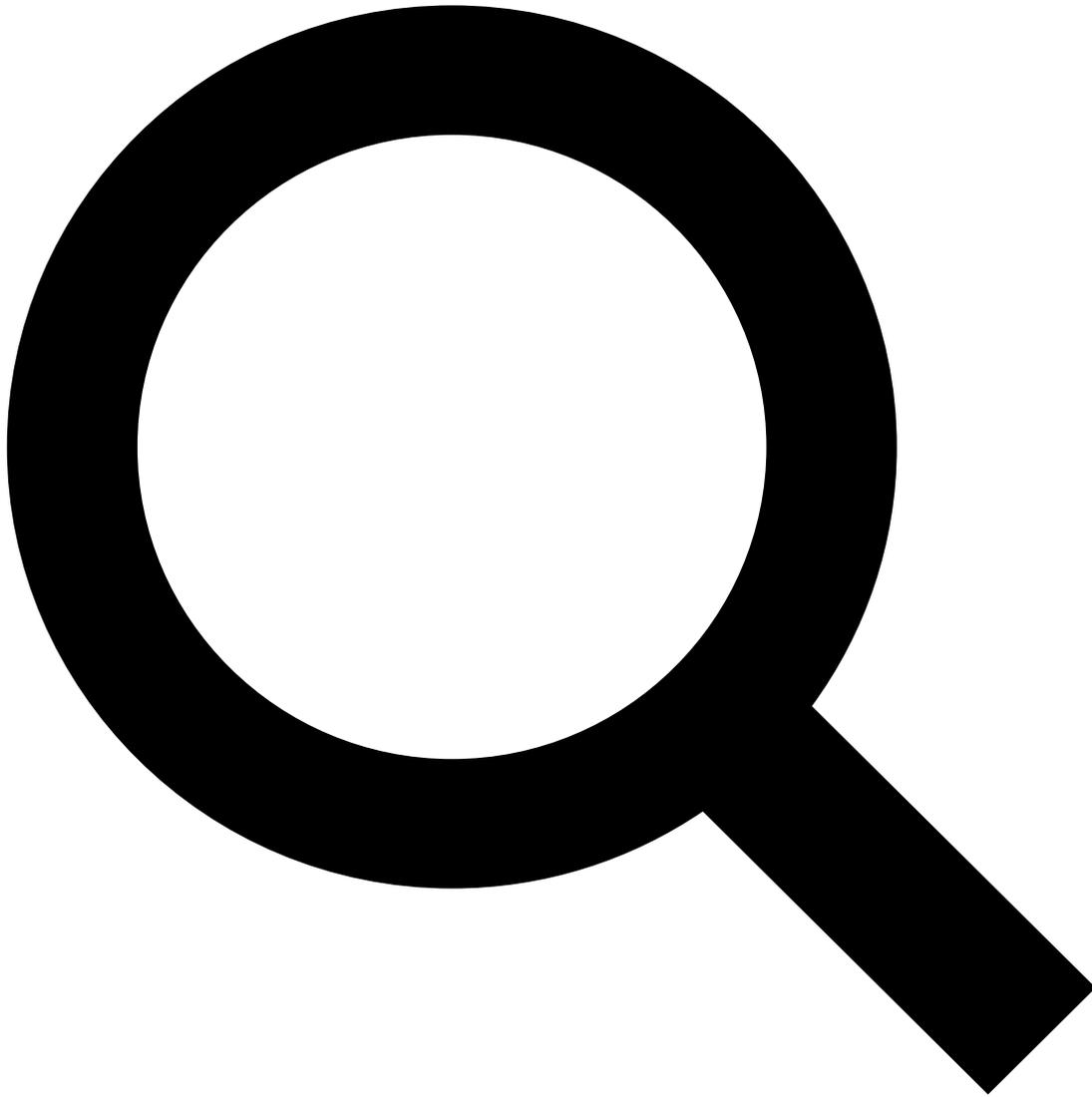


Just ask yourself : Which colour do you prefer ? Have you always preferred it, or did your preference change ? Can you tell why you prefer pink to, let's say, yellow ? If you have no answer to these questions, you may wonder what's so interesting about colour preferences. And if you have no answer, or no interest in the questions, it's perhaps because they are not very well shaped.



Let's first agree that color preference is an important aspect of human behavior. It influences a large number of decisions people make on a daily basis, including the clothes and make up they wear (I will never wear a kaki jacket !), the way they decorate their homes (I like dark furniture), the artifacts they buy or create, to name but a few examples. What is more interesting is that color is, in some sense, a superficial quality that seldom influences the practical function of artifacts. What's more interesting for psychologists, is that we still know very little on which factors actually determine these preferences. We still don't have a good grasp on what they are, and how to capture them descriptively: some studies have reported universal preferences (for blue rather than red); others. for highly saturated colors ; some, finally, stress cultural and individual differences.

Going back to basics

The problem may be that testing for colour preferences has something to do with colour perception, colour labeling and cultural associations - and all these problems are hard to disconnect. Elderly people for instance tend to change their colour preferences, but this may have to do with visual impairment (Beke, L. et al., [Color preference of aged observers compared to young observers](#). Color Research & Application, 33/5, p.381-394).

Going back to basic or exemplar cases can be a good strategy. Reading [Ian McEwan's](#) last novel, [Solar](#), I was just reminded of a striking example of colour preference. The hero of Solar, is a self-serving, compulsive Nobel prize winner physicist who married five times. Paying a visit to his new lover in her Primrose hill dance shop, he observes:

"The eight-years old who longed to be ballerinas were a small fraction of their age group, but they shared with their cohort an inexplicable taste for the colour pink. Not just any shade, but a particular soft, candied, babyish pink...Beard visited Melissa at work one Saturday morning and stood in the high-pitched throng to witness the strange power wielded by a narrow band of the electromagnetic-spectrum. Who was instructing the girls, how did they know how to behave, how to crave for a pink pencil and sharpener, or pink trainers, bed linen, hair grip, satchel, notepaper ? Pedantically, he tracked down a paper by an estimated neuroscientist in Newcastle whose work suggested a gender difference in retinal sensitivity, with females tending to favour the red end of the spectrum. But it could not explain the Saturday stampede through the shop... Then, suddenly, colour exhaustion set in and the magic was gone. Overnight, girls didn't need pink things. It was beyond explanation. There should have been a younger generation of little sisters fresh to pink, but they were not moved."

In this short passage, McEwan manages to show what's so striking in colour preferences, and in human preferences in general : all these little girls jumping around the shop, anxiously united by the same quest for a pink object, almost indifferent to its other properties or value. More importantly, he reminds us about what's so puzzling about these preferences and "tastes" : where on earth are they coming from? How do they come to shared within a group, and differ between groups? Do they play a role in determining groups and sub-groups, or do they emerge as a result of other similarities between the group-members ? Last but not least, Mc Ewan's interests for recent studies in cognitive neurosciences also makes him raise an important explanatory problem : are colour preferences somehow hard wired, or are they formed during life-time, as a result of individual experiences? Do they tell us something about people who have them - be it their ancient or recent history - or do they just pass and go, almost like the fancies the hero has for a woman, then another?

Hard wired colour preferences in human and animals

There is much to say for the hard wired hypothesis to explain colour preferences. In the study mentioned above, Hurlbert and Ling ([Biological components of sex differences in color preference](#). Current Biology 2007, 17(16), R623-R625. reported [here](#)) reveal a gender difference in red/cyan preferences and explain it by a hardwired biological mechanism which evolved in the context of "hunter-gather" societies. Females would like redder colors because their visual system specialized

to be attracted to ripe berries and fruit against a background of green foliage. Another theory suggests that women, as caregivers who need to be particularly sensitive to, say, a child flushed with fever, have developed a sensitivity to reddish changes in skin color, a skill that enhances their abilities as the "emphathizer."

Other arguments for innate colour preferences come from animal studies - with some recent surprising discoveries. Animal colour preferences from sexual or social contexts are assumed to have arisen owing to preferences for specific kinds of food, representing a sort of sensory bias. But the story gets more complicated : once colour preferences have evolved in a sexual context, they may also influence foraging.

Moller and Erritzoe 2010 ([Why birds eat colourful grit: colour preferences revealed by the colour of gizzard stones](#), Journal of Evolutionary Biology, 23, 3: 509-517) show that preferences for specific body colours (i.e. plumage and soft parts) were related to colour preferences for grit ingested by birds. They found positive correlations between presence of lilac and red grit in the gizzard and presence of sexually dichromatic lilac and red colour on the body. Notice that the digestive function of grit has nothing to do with its colour - even less with its similarity with sexually relevant colours ! It depends only on the physical properties of the stones. That's a very striking case of over-generalization of preferences.

Yet as far as humans are concerned, colour preferences are less easy explained. The previous evolutionary story explains why females should like redder colors, but does not explain why males should prefer cyaner colors. Even if males never picked fruits - a dubious assumption - it is unclear why they would prefer cyan. The game for which they looked for would often be seen against a background of green foliage, just like berries and fruits. The explanation is also not fine grained enough - colour preferences are very discriminated and people can express preferences for very specific hues, varying in saturation and brightness from very close colour samples.

Other hard wired theories resort to the calming or exciting emotions [see for instance the suggestion in L-C, Luo, Woodcock, Wright A (2004) [A study of colour emotion and colour preference](#) (Color Res Appl 29:381-389) generated by cold and warm colours. However, they don't get better at explaining preferences and tastes. In a sort of regress, they must explain why people then prefer calming emotions to exciting ones, and not the reverse. The specific problem of colour preferences becomes here quite secondary.

Finally, the link between emotions and colour may also be claimed by the opponents of the hard-wired theories, who claim that associations are made merely on an individual basis, through personal experiences. It could just be that our personal experience are alike in enough respects (we see blue skies, and it's warm and comfortable, we see grey skies, and it's wet and cold).

Fast-moving cultural and sociological influences

McEwan's hero is not quite satisfied with the hard wired explanation : how does this explain the pink craving suddenly coming to an end ? It is difficult to deny that colours preferences are influenced during the individual's life-time by cultural and social associations, ranging from the less robust associations (fashion, role models) to the more robust (early childhood emotional associations, long-time traditions). This explanation doesn't rule out other sociological explanations - here, the sisters of the aspiring ballerinas reacting against the preferences of their siblings, in order to get bought new clothes (instead of inheriting their sisters' old ones). This would fit with the explanation of tastes in terms of 'distinction' (see Bourdieu and the recent [discussion](#) by Nicolas Baumard). But other reactions could also be equally at stake - the mothers getting worried for instance by the association between being a girl and wearing soft colours like pink.

The previous hard wired explanations seemed too narrow and rigid. But now these sociological explanations seem to multiply endlessly.

How to think about what we like ?

Let's go back to the beginning : which colour do you prefer ? Can you tell why you prefer blue to, let's say, green ? The replies to these questions certainly don't target the same preferences as the intuitive ones measured by psychologists, or talked about in the case of birds. Our reflective preferences, the ones we are able to talk about and on which we will take resolutions, are not necessarily the same as the ones that drive us, and on which we may not always be able to reflect.

This distinction itself has still to be argued for – readers of Kent Berridge may suggest it amounts to a distinction between liking and wanting. But they would have to tell whether we are able to reflect more on what we like than what we want – and why. Readers of Rozin's work on disgust may claim it reminds of the difference between cognitive and non-cognitive forms of preferences. There are other ways to go, which may or may not be parallel to the ones made about beliefs (for an intense discussion about this distinction for doxastic attitudes, see György Gergely, Dan Sperber and Maurice Bloch [here](#)). But we need to sort this out.

Keeping this tentative distinction in mind, the case of the little girls who like pink gets therefore interesting again – and not only because they show that neither hard-wired nor sociological theories.

First, they can provide an interesting case of 'ambivalent' preference – between the intuitive drive and the reflected preference. They both crave for it and are (occasionally) able to offer (poor) expressions of, or justifications for what they like : 'because it's the most beautiful colour', etc.

Second, they show how hard it is to determine what the content of preferences are : do they like pink as a feature, or do they like pink objects ? There has been a lot of debates on whether we perceive objects or features – and it's interesting that the question has not been much asked about preferences. The case of birds suggests that preferences are about colour as a feature – but is it the same for human colour preferences, in their wide variety of levels ?

Finally, the fact that the girls finally stop buying pink things suggest that preferences exhibit drastic variation from time to time. Before trying to explain this change, we need to know what sort of change this is : does this mean that preferences have an intrinsically contextual element ? Or are they absolute, and it is just a change in their expression ? I'd like to know.