

Synaesthesia: a neurological mystery

Wendy Fidler explores the sensory overlaps that synaesthetes experience, and marvels at their magical, creative abilities.

What is Synaesthesia?

Synaesthesia (Greek, *syn* = together + *aisth_sis* = perception) is a mixing of the senses, an involuntary physical experience of a cross-modal association. That is, it occurs when the stimulation of one sensory modality reliably causes a perception in another one.

In his book *The Frog who Croaked Blue* Jamie Ward, senior lecturer at the University of Sussex, argues that sensory-mixing is the norm even though only a few of us ‘cross the barrier’ into the realms of synaesthesia. It is thought that everyone is closely acquainted with at least six or seven people who have synaesthesia, but we may not yet know who they are because until very recently synaesthesia has been largely hidden and unknown. In recent years science, and brain scanning in particular, has been uncovering the secrets of synaesthesia and the findings are leading to a major shift in how, historically, we thought senses were organised.



Paul Gauguin actively explored the theory of synaesthesia during his time in Tahiti

Synaesthesia can be considered an alternative sensory window onto the world. Colour synaesthetes associate numbers and letters with colours; the colours are always the same for each letter or number.

Some synaesthetes see the actual numbers in colour – which could create havoc with reading and writing if the number/letter colour is white and the page is white – others have a sensory impression of the colour but still see the number/letter normally on the page.

Some studies have shown infants responding to sensory stimuli in a way that seems to indicate synaesthetic perception. The researchers conducting these studies suggest that many children have the ‘crossed connections’ of synaesthesia, but lose them as they grow up. A recent study in the prevalence of synaesthesia in children indicates that around 500,000 UK children have the condition. This is around two synaesthete pupils per primary school, though only 5% of head teachers have heard of the condition.

In her first-hand account of having synesthesia, *Blue Cats and Chartreuse Kittens*, Pat Duffy says “What each of us sees is the reality we know. I am at no more liberty to change the white colour of the letter O than I am to change its circular shape; for me the one is as much an attribute of the



Many synaesthetes, including Marcia Smilack, use their special gifts creatively to enhance their professional work:

“If you look closely, do you notice anything unusual in this picture? Look up high, on the left, near the mast . . . yes, that’s a fish that was swimming so close to the surface of the water that it became a part of my picture which is why I named it *Fish in the Sky*. This image offers a good way to show you what synesthesia feels like because to appreciate both the reflection and the fish, your focus must be in two places at the same time which is not possible. Yet how can you say the reflection is any less real than the fish? That which is perceived in peripheral vision is no less real than that which is the focus of the eye. My synesthesia similarly operates in peripheral vision.”

Marcia Smilack – Reflectionist and synaesthete

letter as the other.”

Synaesthesia is often linked with creativity, and famous synaesthetes include Nabakov, Liszt, Baudelaire and Rimbaud. Though not a synaesthete himself, the artist Paul Gauguin actively explored the theory of synaesthesia during his time in Tahiti; according to that theory artworks should unite rather than divide artistic genres. Gauguin explained that his paintings involved a “musical part” – their composition, lines and colours – and a ‘literary part’ – the creation of a story that justified his aesthetic decisions. ■