Science says Kandinsky was right – paintings can be heard

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We all link music and art, but only a tiny minority of us is aware of the crossover of senses in our brains, according to a UCL (University College London) neuroscientist, speaking today at the BA Festival of Science. New research has found that vision and hearing are inextricably interlinked in everyone's brain, but only synaesthetes, who have a rare condition in which the senses mingle, are conscious of it.

The results show that most of us prefer image and sound combined, rather than either in isolation. We also tend to agree on which images match particular sounds. This could have implications for how we understand art and develop art forms that combine visual images with sound – such as ballet, opera, visual jockeying and animation.

In his talk at the 'Beautiful Brains' symposium, Dr Jamie Ward, of the UCL Department of Psychology, said: "Kandinsky wanted to make visual art more like music – more abstract. He also hoped that his paintings would be 'heard' by his audiences. This seems more achievable now that we have found such a strong link between vision and hearing.

"Although information from the world enters our heads via different sensory organs – the eyes and ears in this instance – once they are in the brain they are intimately connected with each other. Impressively, they are connected in non-random ways, so that some combinations of sound and vision go together better than others."

During a series of experiments, Dr Ward asked six synaesthetes to draw

and describe their visual experiences of music played by the New London Orchestra. A control group of six people without the condition were asked to do the same. Animated films, combining the music and drawn images were created by an animator, Sam Moore of the University of Wolverhampton, and shown to the public visiting London's Science Museum. A hundred images were shown to over 200 people and these visitors were asked to choose the image that provided the best fit to the music. Respondents consistently chose the images drawn by synaesthetes over control images. This shows that while people without synaesthesia are not able to hear a painting or see a piece of music in a literal sense, they are able to sense the crossover and tend to choose the 'correct' image.

Dr Ward said: "While some synaesthetes can actually hear a Kandinsky in a very real way, the rest of us don't have such a pronounced crossover of senses. But, this research shows that all of us have links between our hearing and vision – even if we don't really realise it. We hope that understanding synaesthesia will enable us to understand more about how our senses are linked in our brains, and how this may help us create and appreciate works of art that combine music and sound."

Describing 'Composition VIII, 1923' by Kandinsky, one synaesthete said: "The jumbled mass of lines gave various tones, which changed as my eyes travelled round the picture. When looking at the large multicoloured powerful circle at upper left, I get a pure tone which can be too much, so to relieve my mind of this I travel back to the cacophony of jumbled lines and shapes. This painting therefore is a good balance of contrasting noise – pure tones and cacophony – which was a delight to see. The more I looked at it, the more I came to appreciate the image and to like the 'music'."

Another synaesthete, describes her experience of this painting: "There is a huge splurge of sound left-hand top – booming and vulgar! Below it is

a mousy little meee sound which then translates into ‘oh’s and ‘ah’s and pops at the various circles. The lines are sharp and are moving to the right with the sound of steel – like blades scraping against one another. The triangle and boomerang shape are surprised and pop up laughing with a ‘whooo’.”

The next stage of the research will use brain scans to look at what happens in the brain of synaesthetes when Kandinsky triggers sound or when sound triggers a Kandinsky-like vision.

Source: University College London

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