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## For musician with synesthesia, the cello can sound too furry. Or too red

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*Toronto musician Greg Jarvis of the band Flowers of Hell always saw shapes when he heard music. Now he's discovered there's a name for his condition*

Greg Jarvis was marking a student's music-history paper when he encountered an unfamiliar word - synesthesia - linked to perceptual experiences that he had always considered a normal part of life. That was how he discovered, at age 34, that most people don't see shapes when they hear music, as he has done for as long as he can remember.

"I just took it for granted," says the Toronto musician, whose band the Flowers of Hell put out a new disc last week on the aptly named Optical Sounds label. "It was what listening to music was." He assumed that everyone saw patterns of dots when they heard drums, fuzzy lines when someone played rock guitar and unattractive squiggles when having a conversation.

The first thing Jarvis did after reading up on synesthesia was to decide to make more music of his own and spend less time on other people's (he worked for about a decade in the record industry). If he had a rare ability, he figured, why not explore and exploit it?

That's one of the curious cultural facts about synesthesia: its tendency to spark people's creativity, whether they have the condition or not. Synesthesia is a real object of clinical study, but for centuries it has also been a fertile idea for artists, scientists and philosophers looking for underlying patterns in experience and the world.

Long before synesthesia was recognized as a physiological condition, people tried to invent it. Sir Isaac Newton's suggestion that the seven colours of light he saw through his prism were analogous to the seven notes of the diatonic scale triggered a 250-year debate on the links between music, light and the senses that perceive them. Colour organs, music-related paintings, cross-sensory poetic metaphors and son-et-lumière shows tried to prompt what Baudelaire called (in *Les Fleurs du Mal*) "métamorphose mystique/ De tous mes sens fondus en un!" Synesthesia was seen as an aesthetic ambition, not a condition of anyone's daily life.

Several prominent artists who trafficked in this kind of synesthesia probably didn't have the condition themselves; they include the poet Percy Shelley, the painter Wassily Kandinsky and the composers Alexander Skryabin and Bela Bartok. French composer Olivier Messiaen, one real synesthete, made his coloured hearing the basis for his whole art, developing a system of modes and "colour chords" that corresponded to his visual experience of sound.

Jarvis's kind of visible music is uncommon even among synesthetes, many more of whom, like Messiaen, see sound as colour. The novelist Vladimir Nabokov saw colours when he read text or individual letters. Other synesthetes' visual or aural experience is linked to sensations of taste. It used to be thought that real synesthesia was very rare, though recent research suggests that as many as one in 23 people may have it to some degree.

Interest in synesthesia declined as Romantic dreams of sensory fusion faded, and as science became more skeptical of subjective experience. But in recent decades synesthesia has become a hot research topic, as neuroscientists find proof that even an apparently basic perception may trigger a complex subjective process in the brain.

Advanced brain imaging has shown significant "crosstalk" across sectors formerly thought to have little contact. From this point of view, synesthetes are people whose crosstalk is so loud, it breaks into their

conscious awareness. One current hypothesis holds that we may all have been synesthetes in the cradle, and that most of us lose this "joined perception" (the word's literal meaning) as our brains become adept at separating taste sensations from those of colour and sound. It's the Romantics' sensory fusion in reverse.

Even adults who don't see colours when they count or sing are adept at bringing together different types of sensory information. When someone speaks to you, your brain fuses sounds detected by the ear and images of the moving mouth into one seamless experience. If that person talks about a high note or a loud shirt, you don't need to ask them what altitude has to do with pitch, or how a shirt can produce any degree of sound. We're all swimming in a sea of synesthetic imagery, which may be fed by sensory crosstalk that becomes conscious only when it bubbles up into metaphor.

So what's it like to be really synesthetic, and - as neuroscientist Richard E. Cytowic asks in one of his engrossing books on the subject - what's it good for? For Jarvis, it seems to be like having another, intermediary sense. His shapes don't block or intrude on his normal sight, he says; they occur in "a whole different field of vision." They're present whenever any sound is audible, but he doesn't always notice them.

"It's just like your sense of smell," he says. "Your nose is working all day, but you don't remember everything it picks up." Other synesthetes find their sensory crosstalk so powerful that they can recall that someone has a "blue" name, but not that that name is Peter. According to Cytowic, many synesthetes have high intelligence, excellent memory and a lousy sense of direction.

Jarvis's shape-hearing obviously enhances his enjoyment of the music he likes, and probably helped form his taste. Music heavy on rhythm, like some kinds of dance music or American minimalism, are boring to look at, he says, and atonal music just looks wrong.

"I've always made records and been drawn to records that totally light up my synesthesia," he says, "things like Phil Spector's wall of sound, or [psychedelic band] Spacemen 3, where they're using layers and layers." Richly scored classics by Beethoven or Wagner also fit the bill. He calls his own music a fusion of "classical and shoe-gaze."

His new Flowers of Hell recording, a single 45-minute jam called O, unfolds in very leisurely fashion, as the nine players improvise slowly within a virtually imperceptible song structure. Simmering long notes and almost arrhythmic stretches of sound predominate. It's probably a good record to hear while sprawled on a beanbag chair and enjoying the stimulant of one's choice. I might like it more if I had synesthesia - if my visual field lit up the way Jarvis's does.

By coincidence, the man who mixed the record, British musician Tom Knott, is also a synesthete. He was unaware of the concept, or that his way of hearing was unlike other people's, till he met Jarvis.

"Tom's a colour synesthete," Jarvis says. "So I'd be saying to him, 'Can you fix the cello? It's a bit furry to me,' and he would say, 'Good, I was thinking it was too red.' "

Two other musicians might have agreed that something was wrong with the cello without using those words. But they probably wouldn't have felt the sense of recognition and kinship that I see on Jarvis's face as he tells the story. We may all live in worlds of our own, neurologically speaking, but that goes double for synesthetes, who have daily evidence of the personal nature of even basic perceptions.