

SCIENCE

# Of sense and sensitivity

Are you one of those people who taste shapes, see sounds and hear colours? Face it, you're a synaesthete

When Russian novelist Vladimir Nabokov was a little boy he complained to his mother that his wooden alphabet blocks were all the wrong colours. She understood instantly what he meant. He was experiencing a conflict between the colours of the painted letters and the colours of each letter as he saw them in his mind. Mrs Nabokov knew, because

she perceived letters in the same way. Vladimir Nabokov, like his mother, was a synaesthete.

Synaesthesia is derived from the Greek, meaning "joined sensation", and has been known to the medical community for 300 years. The phenomenon is best described as a blending of the senses. Richard E. Cytowic, author of

ILLUSTRATION: TONY EDWARDS

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The Man Who Tasted Shapes, and a world-recognised expert on synaesthesia, describes it as "the rare capacity to hear colour, taste shapes, or experience other equally startling sensory blending whose quality seems difficult for most of us to imagine. A synaesthete might describe the colour, shape and flavour of someone's voice, or music whose sound looks like 'shards of glass', a scintillation of jagged, coloured triangles moving in the visual field."

I first came across this unusual gift not from my own senses, which are most boring and divided into five clear sensations, but from my husband, Michael Lynch. Two years ago he was reading an article in the scientific journal *Nature Scientist*, which detailed the phenomenon of synaesthesia. He came to me, holding the magazine forward, and said simply, "This is me."

The condition had always been there, he said, but he didn't know the word for it. "I'd even heard the term synaesthesia before then but I didn't realise that's what I had. I'd always associated colours with letters and numbers very strongly, but before I read this article I thought it was something I'd picked up from a book I had read as a child."

It was previously estimated that one in 25,000 people experienced synaesthesia in some way; however, new studies have found that the figure could be as high as one in 2000. The obvious problem in finding synaesthetes is that those with synaesthesia often do not realise that their perception is unusual. We non-synaesthetes are usually surprised and baffled to find out that there is another way of experiencing the five senses, that not everyone has a straightforward grouping of sensations for taste, touch, sight, smell and sound. And synaesthetes have trouble grasping the fact that most of us are not privy to such a delightful blending.

According to various global studies, female synaesthetes outnumber males by around three to one. Synaesthetes are also predominantly left-handed or ambi-

dextrous. They are almost always bright, and come from every kind of socio-economic and racial group. There is also evidence to suggest that synaesthesia runs in families, although no established pattern has been found except that male-to-male familial transmission is rare. One family may have a synaesthete in each of four generations, while another family may have four synaesthetes out of five siblings. The Nabokov family is the most famous in terms of this genetic link. Nabokov and his mother were both synaesthetes, as were Nabokov's wife and his son, Dmitri.

There is no indication that synaesthetes are necessarily more artistic than

the relatively common letter-colour based synaesthesia, such as Michael's, will be present in a child before that child learns to read and recognise words. Just how this is possible is not yet known.

Michael associates every letter of the alphabet and every number with a strong, definite colour. He says, "When I see a word, the colour is always there, but it's not necessarily conscious."

He adds, "The colour of the word is made up of the colour of its individual letters, but each letter of a word doesn't necessarily have the same value. Usually the first letter of the word has a fairly strong value, and the vowels of the word contribute more strongly than the other consonants."

The best way to describe it, he says, may be to imagine a drawing of a stained-glass window, with patches of colour and thick borders of other colours between them. The vowels are like the big patches of colour and the consonants are like a structure the vowel colours sit in.

"Let's take the word 'country' — C is bright yellow, so the first colour is yellow. O and U are black and maroon respectively, so they give the overall tone to the word. It's a dark word, with a yellow highlight.

N is blue, T is green, R is a purple maroon, and Y is greyish white. Those colours are there, but they are like the details of the picture. The overall tone is the OU tone."

For Michael, personalities are also connected to each letter. "The letters with most primary colours I perceive as being happy, or more forceful or positive. The letters with duller or secondary colours tend to have negative connotations. A (white) is very open and charming and clean, C (yellow) is cheerful and happy, E (red) is happy and energetic, very forceful, a bit of an overbearing letter. R (purple maroon) has a very standoffish and regal aspect to it. N (blue) is a neutral and businesslike but friendly letter. It's like an efficient, ▶



"Michael's Alphabet", a grid containing the 26 letters of the alphabet and 10 numbers. Each is a tiny portrait, detailing the colour and mood of each character.

other people, although there are famous artistic synaesthetes such as Nabokov, Olivier Messiaen, Arthur Rimbaud and Alexander Scriabin. Beethoven, James Joyce and David Hockney are also thought to have been examples.

A synaesthete's sensations will remain stable all his or her life. That is, if they describe the letter B as red, it will always be this way. They recall having these idiosyncratic senses as far back as their earliest memory, and their perception will remain vivid and irrepresible, beyond their control. And, remarkably,

fowy, pedantic scientist who is nice anyway. D is my least favourite letter, it's an off-pace or mauve colour, and has strong connotations of nastiness and unpleasantness."

Most synaesthetes also claim to have excellent memories, in that they are assisted in remembering details through their synaesthesia. Conversations, prose passages and lines of movie dialogue, even verbal instructions are exactly recalled, because the synaesthete is assisted by the smell, sound or feeling of the words or images involved.

When Michael discovered that his synaesthesia was special, he discussed it with my mother, Patricia Davidson, a fibre artist who works in coloured materials. Intrigued by Michael's revelation, she created an artwork based on it.

This artwork, entitled "Michael's Alphabet", is a grid containing the 26

tasted like something flat, and she looked at me as if to say "What?" ... And strawberries are still flat, with a texture like sandpaper and they are a creamy colour."

Like Nabokov, Helle also thought the letters of the alphabet written on a poster in her classroom as a child were "a bit funny". "They didn't seem right. The colours were wrong," she said.

One of the most intriguing aspects of Helle's synaesthesia is that she speaks two languages, and her synaesthetic relationship with letters is the same whether she is thinking in Danish or English. When she moved to Australia as a young woman, she picked up the language quite quickly.

"I imagined the words in my head, and tried to imitate the sounds I heard. I found it really easy to remember the language." She also believes that no

## "Your voice sounds like caramel ... very flowing, it's soft and pliable, and that lovely creamy toffee colour"

letters of the alphabet and 10 digits. Each is a tiny portrait in itself, detailing the distinct colour and mood each character represents.

One night after a dinner party at our house, a friend of mine, Helle Jørgensen, saw the picture hanging in the hallway and asked Michael to explain it. She suddenly realised that she had the same ability but had never thought that it was a phenomenon. She'd always assumed everyone saw the world in more or less the same way.

Helle not only associates letters and numbers with colour and personality, she also visualises sounds and touch, and her senses also take on a spatial quality. As we were talking, she even had synaesthetic sensations about the sound of my voice. "It sounds like caramel," she explained. "It has the viscosity of caramel, very flowing, it's soft and pliable, and that lovely creamy toffee colour. It's the whole nature of caramel."

She recalls trying to describe her sensations as a child. "I remember the first time I realised I was a bit different. I was four or five, and I was eating strawberries. I was talking to one of my cousins about it, and I said something about the strawberries being funny because they

language adequately describes and explain synaesthesia.

Scientific understanding of the condition has been marred by the obvious problems associated with distinguishing between a first-person interpretation of personal senses and an objective outside way of measuring these private feelings. The lack of obvious agreement among synaesthetes compounds the difficulty. Michael and Helle's different perceptions as to the colour of vowels, for example, is the kind of difference that has sometimes been taken as proof that synaesthesia is not "real". Also, the condition flows from deeply ingrained notions of the workings of the mind — the conventional laws of neural anatomy and psychology. It also grates against commonsense and ideas of "normalcy".

However, scientists like Richard E. Cytowic hope that synaesthesia may in the future assist people deficient in one of their senses. If the blind could be taught to sense colours in words they hear, or if the deaf could learn how to "hear" the flavours of certain foods, maybe synaesthesia could move beyond being an enchanting sensory hiccup and into therapeutic scientific application.

Monica Davidson ■

### CONDITIONS OF ENTRY

#### Portrait of a Lady Contest, page 10

1. Individuals or "two to enter" from part of these Conditions of Entry. Entry is open to all residents of Australia and New Zealand, other than employees of HCP Publishing Pty Ltd, Publishers, or New Zealand, other sponsors and their immediate agencies, and the families of those sponsors.

2. Competition opens on February 13, 1987, at 10:00am and closes midnight, Wednesday, April 15, 1987. Entry is open to you until by closing 1987 147 123, as indicated on page 10 of this issue. 2 April 87 entry maximum call entry, mobile and telephone entry. The draw for the major prize will be held at Capricorn Theatre Pty Ltd, 103 Market Street, North Sydney, on April 17, 1987, by a person appointed by HCP magazine. All entries will become the property of HCP Publishing Pty Ltd and may be used in future marketing programs.

3. The promoter is HCP Publishing Pty Ltd, 10 Park St, Sydney, NSW 1522 and Publisher, Filinvest Entertainment, 5 Morea Avenue, Belconnen, NSW 2605. Entries not completed in accordance with rules and conditions or awarded after the closing date will not be considered. The judge's decision is final in any aspect of the competition is final and binding on every person who enters. No correspondence will be entered into.

4. The total value of all prizes is approximately \$6000. The major prize, valued at approximately \$6000, consists of two economy-class return flights from the New Zealand to London from Sydney, Melbourne, Brisbane, Perth, Hobart or Darwin (not to a city share with Alcatraz Australia from Adelaide, and more flights between accommodation at a 5-star hotel or similar standard. Travel is to/from any of these international gateway will be at the expense of the winner. The prize must be taken after May 1, 1987, and be completed by June 30, 1987, and is subject to booking availability. There are 20 second prizes, each consisting of a Portrait of a Lady easel/desk set valued at approximately \$200, which will be randomly won by 20 winners over the duration of the competition. Prizes are not transferable or transferrable for cash. Any change in value of the prize occurring between the publishing date and the date the prize is claimed is not the responsibility of the promoter.

5. The major prize winner will be notified by security post and their name published in the July/Aug 1987 issue of HCP on or after June 12, 1987.

6. The promoter and the above sponsors take no responsibility for insurance, health, luggage, travellers' cheques, passports, visas, taxes, personal expenses, meals, transport and accommodation other than as specified.

7. NSW Permit No. 72570257 issued under the Lotteries and Art Shows Act, 1967. Vic Permit No. 875887 issued on 18.07.87. ACT Permit No. 79967132 issued under the Lotteries Act, 1984. Approved by RT Racing and Gaming Authority, Perth WA, 28/07/87. SA License No. 74176.

### CONDITIONS OF ENTRY

#### Win a Spectacular Holiday in Tasmania, page 16

1. Individuals or "two to enter" from part of these Conditions of Entry. The competition is open to residents of Australia only whose date of residential subscription is 02 No 1 year or more is required between 12.01.87 and 31.03.87 and is subject to a completed and valid card or, if paid by cheque, receipt for payment. Current subscribers who move or submit their subscriptions will receive double entries in the draw. Employees of HCP Publishing Pty Ltd, Caswell Promotions Layer, Castle Mountain Lodge and their associated agencies, and the families of those employees, are not eligible to enter. Promoters must be over 18 or accompanied by an adult.

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4. Total prize value, as at 15.01.87, is up to approximately \$10,000. The prize consists of a 5-day trip for two staying at the Castle Mountain Lodge in Tasmania. This includes 2 economy return flights to Launceston from other state capital cities, 2 days or less in Launceston, 2 nights' four-star accommodation plus full buffet breakfast, a tour of the Cascade Brewery including lunch, and 2 pairs of Bata sunglasses. The winner will be responsible for any expenses incurred in getting to and from an Australian capital city for departure. The prize, valid until 31.03.88, including school holidays, is not transferable or redeemable for cash and is subject to booking availability. The promoter and above sponsors take no responsibility for insurance, health, luggage, travellers' cheques, passports, visas, taxes, personal expenses, meals, transport and accommodation other than as specified. Any change in value of the prize occurring between the publishing date and the date the prize is claimed is not the responsibility of the promoter.

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