

Those Who Hear in Color

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The color of your voice was pink like fresh-spun cotton candy, she says when I come to check on her after a few hours in the emergency department. She smiles. Yes, she says, I remember you.

She, a woman in her early 20s, came in earlier that day with a bruised and swollen left hand and worry about having a fracture after a fall. I picked up her care as one of the medical students working during the shift. When I first came to find out what brought her to the emergency department, she was hesitant to speak her story and told it to the floor—*I was on a scooter and just lost control, I guess*—in such a way that made me wonder if there was something more to the incident that she was hiding. As she waited for me to suggest a plan, her hands made a motion on her lap as if she was washing them. A habit, or a nervous gesture suggestive of anxiety? I let it go for the time being and told her I would order an X-ray to help with diagnosis. She nodded, and the tension in her body softened.

I return, now, to share the X-ray results: a small fracture in one of the bones in her wrist. No surgery necessary, but we'll treat her with a cast and plan for follow-up in clinic. Now we just have to wait for the attending to come help set the cast. I sit in the chair set against the wall and observe her sitting up in bed, scrolling through something on her phone with her right hand. There seems to be something slightly clumsy to the motion. I ask: *You're left-handed?*

She looks up as she sets the phone down. *Yeah, she says. Good catch.*

That's because medical students have time to sit and notice. And I've been thinking back on her words. A strange story about falling from a scooter. And, aside from that: *"Pink, like fresh-spun cotton candy?" I don't think I've ever heard a voice described like that before. That's pretty cool.*

I thought she was simply being creative and admired the way she could paint color into such an ordinary moment. But she stiffens when I say it. *I . . .* She pauses like a wobbling child finding her balance and carefully considering her next leap in a game of hopscotch. *I always hear colors with sounds.* She pauses again. She almost seems surprised, as if an expected reaction doesn't manifest. She sits up a little straighter, some of the tension easing again. *What you said, just now. Your tone was different from earlier. This time your voice was blue. Like the color of cornflowers.*

What a strange confession. I'd never heard anything of the sort. *You hear words . . . as colors?*

She studies me for a moment. I hear the words, too. I just also hear them as colors. In whatever color she heard me ask that question, it must have signaled it's okay for her to go on. *All sounds have colors with them.*

How interesting to hear of such a thing. I want to know more. She describes examples. Certain letters in the alphabet are paired with certain colors. A, and red. B, and blue. C, a vibrant yellow. When she hears a song, she sees a corresponding color. She scrolls through something on her phone and taps the screen. A heavy metal song plays. The strike of drumsticks against the batter head is sparks of gold and silver. Pop bursts with bright colors: red, blue, green.

And, the siren today . . . Her hands make that motion again, like washing. *It was a burst of white.* She sighs. *I was riding the scooter and suddenly there was a police car coming.* She could see the sound of the siren. An explosion of white, rushing up to the shore of her senses and then receding, only to return much stronger again as the car hurtled past her on the road. *I got a sensory overload. That happens sometimes.* She glances at her bruised hand wrapped with gauze where her skin was scratched up by cement. *This one's a first, though.*

We sit in quiet for a moment. It is only later that I learn there is a word for what she experiences. Some know April is a green month and August is a month painted gold. Another may say that the color indigo has the flavor of chocolate cake while periwinkle smells like pizza. There are those who take a bite of broccoli and taste blue. This is synesthesia, in which a stimulus that is perceived through one sense activates another.

It's hard to know when it's safe to talk about, she says when I encourage her to go on. *Some people don't get it. Some think it's strange. Some don't believe me.*

Her experiences with people who doubt her perceptions are unfortunately common among those with synesthesia. Though synesthesia has had sociocultural impact for centuries, many affected individuals find that even physicians hesitate to believe their experiences. This results in affected individuals commonly avoiding mention of their perceptions.¹ However, it is now known that there are many types of this phenomenon. One of the most common forms is graphene-color synesthesia, in which people experience colors when thinking about letters, numbers, or words.² The mechanisms of synesthesia are thought to be related to factors such as connections between sensory cortical areas that may be linked to amplification of normal sensory processes. For

example, in grapheme-color synesthesia, observation of an achromatic grapheme results in neural signals transmitting from the retina to visual areas (visual cortex) and shape-processing areas (such as the posterior fusiform gyrus), as well as to the areas that analyze meaning in the signal (such as the anterior fusiform gyrus). In synesthesia, cross-activation and disinhibited feedback is thought to occur between the anterior and posterior fusiform gyrus and color-processing regions.³ Mechanisms such as this one result in affected patients perceiving colors along with words.

It's okay if some people don't believe me, she says. I believe me. I am the way I am. And it has its benefits.

She found it easier to learn the alphabet and math in school. Heightened awareness, enhanced memory, more creativity—she ticks each off on her fingers. Sometimes listening to a song takes her to a place of beauty, her senses soothed by sound and the soft shades of colors that go together. Always offset, she

points out with a pout, by the songs where the notes and colors clash. And—

The attending comes in, then, to help place a cast around her arm. She's quiet as we work. And when the cast is completed, she inspects our handiwork. She thanks us. I thank her in return before turning to follow the attending out of the room.

Hey, one second. Before you go, she calls after me. I pause. I glance back at her. She smiles and waves. Thanks for just accepting it. It's nice to talk about it sometimes. Thanks, she says, for taking the time to listen.

References

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