# The Girl Who Smelled Blue

## *The Colorful Case of Willetta Huggins*

BY JESSE BERING

One night many years ago I took a lovely blind girl out to the movies on a date. (Yes, a girl—this was before I'd come out!) Let's call her Charlotte. Now, *seeing* a movie is something that most of us take for granted. But for the visually impaired, going to the movie theatre is an altogether different phenomenological event. Back then, naïve and egocentric as I was, it didn't even occur to me that my literally blind date might have trouble following the details of the film in the absence of onscreen visual cues. And to make matters worse, the film was *Face/Off,* the plot of which revolves around one character literally having the face of the other. As such, there are a number of scenes where being able to see what's happening up there on the screen seems like it might come in handy. This fact suddenly dawned on me, and I felt the urge to explain. That, as it turns out, was a big, ableist faux pas. "That's actually the other guy," I whispered to Charlotte. "The brother thinks he's about to talk to the Nick Cage guy when it's really John Travolta's character." "Yeah, I *know* that." (Add "you stupid sighted schmuck" and you'll get the gist of her tone.)

In hindsight (sorry) I don't know why I should have found Charlotte's auditory deciphering of some meagre John Woo wizardry especially surprising. She was brilliant. In our psychology graduate stats class, it was Charlotte who—merely listening to the lecturer conjuring up complex hypothetical problems—was the first to raise her hand with the correct answers, not any of us actually seeing him writing down the very problems on the chalkboard and trying to work them out on paper. I still find it astonishing, and perplexing, how the symbols and formulas inherent to such challenging mathematical concepts are represented in the mind of a congenitally blind person. But whatever nonvisual faculties Charlotte employed to process this abstract information, she was using them at lightning speed.

The idea that the loss of one sensory modality leads to the enhanced capacity of other sensory modalities is an old one in psychology. William James described a deaf-blind woman named Laura Bridgeman[1] who was said to have such an acute sense of touch that she could identify people by shaking their hands years after first meeting them this way. He also wrote of a blind woman employed in the laundry of a mental asylum who sorted the freshly washed linens of the residents based on their odors. Helen Keller claimed to recognize her friends by the singularity of their scents, too.

From an evolutionary perspective, it's unsurprising that blind people would rely heavily upon other senses, such as that of smell. Odors provide salient, oftentimes strategic, information—signaling anything from whether a slab of meat has gone rancid to the ominous smell of smoke to a potential mate being, erm, unhygienic. Although there's some neurological evidence of enlarged olfactory bulbs in people blind from an early age[2], most of the evidence in this area suggests that the visually impaired do not have a physiologically heightened sense of smell, per se, but rather are simply more attentive to and aware of odors. That is, the compensatory mechanisms appear to be cognitive rather than sensory[3].

For example, in a 2018 study published in *Neuroscience*, Canadian brain researcher Simona Manescu and her colleagues found that early-blind participants were no better at discriminating between wines using their noses[4] than were sighted people. Yet a classic study by Ruth Rosenbluth revealed how young, early-blind children in Isreal were significantly better at naming a variety of random household smells[5]—things like honey, rubber, bleach, and kerosene—than their sighted peers. And in France, a group of researchers interviewed blind children about the role of odors in their everyday lives.[6] Smells were essential. "It is interesting," the researchers noted, "that the children…tended to repress their sniffing behaviors in public, attesting to

social pressure that depreciates such behaviors."

In 1922, however, one Willetta Huggins, a deaf and blind 17-year-old residing at the Wisconsin School for the Blind, stretched any theory of compensation to its limits through the most unbelievable displays of nasal savvy ever. And by unbelievable, I mean that some scientists thought they smelled a rat. Before you make up your own mind, let's examine what Willetta was able to accomplish with her nostrils. Well, the left nostril, anyway.

About a year before Willetta became a sensation, the superintendent of her school, J. T. Hooper, began to do interviews about this mysterious pupil, this "wonder girl" who could literally smell colors. "Blind Girl Finicky About Her Clothes,"[7] read a headline in *The Wisconsin State Journal*. "She makes all of her own dresses. Not only that, she designs her clothes, working out the patterns by smelling and feeling." A profile in *Popular Mechanics* magazine[8] recounted how, as part of a publicity stunt organized by Hooper, Willetta was locked in a bank vault at Chippewa Falls and handed six envelopes, one at a time. Each contained a different colored yarn. Inhaling their contents, she named every color correctly.

On another occasion, she was able to sniff out strangers in the room, and note how many were present. "There are three people in the room, including myself," Willetta said. "Tabby cat is also here," she added. Then, after some further pleasantries, she suddenly remarked: "Tabby cat has gone out." "The visitors looked around the room," wrote the astonished journalist. "The cat was gone."

Color me unimpressed on that last one. Let's just say there's a reason my cat is on a gastrointestinal diet. Still, there's no denying that Willetta exhibited a preternatural sense of smell. Escorted by Hooper on a visit to the governor's mansion in Madison, where she happily showed off her skills in front of the cameras, Willetta approached Governor John Blaine. She leaned in and smelled his suit. "It's gray and black—a mixture." "And what is the color of my waist?" asked another girl. Willetta sampled the air. "It's white, but the collar is edged with yellow."

How did she hear that question, you ask? In addition to smelling colors, Willetta had other special talents as well. Most involved the tactile sense. Inspired by Helen Keller, who appeared with her in a few photo-ops, Willetta could understand speech by placing her fingertips on the speaker's head or larynx. And she could discern the currency of bills and read newspaper articles by running these same fingertips along the surface of the paper.

But sniffing out hues was arguably Willetta's trademark, making her unique among the blind.

To eliminate the possibility that she might, in fact, have been able to see the colors all along, Willetta was examined by experts and confirmed as "totally blind and totally deaf." An ophthalmologist by the name of Thomas J. Williams trotted out Willetta before a gathering of the Chicago Medical Society[9] and, just in case, fitted a pair of obfuscating goggles over her eyes. Wafting a skein of differently colored wool beneath the girl's nose, Willetta was flawless in naming the mélange of hues: dark blue, yellow, pink, green, blue, fiery red, brown and white. She did the same with a bouquet of paper flowers. And when handed the official stenographer's small blotter—pink, blue and white—the blind girl got it right again.

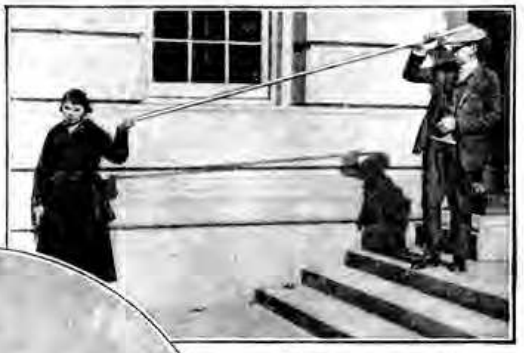
For those seeking a rational explanation, one contender was that Willetta wasn't smelling colors insomuch as she was discriminating between the odors of dyes used in the production of fabrics and other objects. But believers were quick to point out that the girl had been able to tell apart red zinnias (a type of daisy) from white ones, as well as differently colored sweet peas. And now that I think about it, how did she know that cat was, in fact, a tabby?

Although many were content to accept the carnival-act displays as prima facie evidence of Willetta's ability, some doubt lingered due to the dubious etiology of the case. Orphaned at a young age—her father had died of tuberculosis when she was four, and her mother of a venereal disease a few years later—at 10 Willetta was found living with her grandma by a fieldworker for the School for the Blind. She was said to have had some vision until then, but lost it entirely soon after moving to the School, with her meagre hearing then following suit.

Joseph Jastrow was deeply skeptical of all the hubbub surrounding Willetta. Head of the University of Wisconsin's Department of Psychology, Jastrow was a pioneer of the emerging discipline of experimental psychology[10] and a leading authority on optical illusions (you've probably seen his eponymous Jastrow illusion at some stage, and his classic duck-rabbit illusion is the stuff of textbooks). He was also something of an early science popularizer, with a syndicated self-help column and a passion for explaining science. Most importantly for this case, however, Jastrow—the unshakably rational son of a famous Talmudic scholar—was an ardent skeptic of superstition, and while he acknowledged that many blind people do develop impressive abilities in their remaining senses, Willetta's claim of "smelling colors" seemed to him a step into the realm of mysticism and improbability. "It is the duty

# Can We See with Our Noses

## Amazing Feats of 17-Year-Old Blind and Deaf Girl, Who Smells Colors and Feels Sound, Convince Scientists that Unused Powers Lie Asleep in Our Senses



Through her sensitive finger tips, this remarkable 17-year-old deaf-blind girl feels words as they vibrate down a long pole resting on the head of the speaker

CAN we learn to see with our noses? Can we learn to hear with our finger tips? Can we develop eyes in the backs of our heads or wherever else we happen to need them?

The amazing case of Willetta Huggins, the 17-year-old blind and deaf girl of Janesville, Wis., makes these questions much less fantastic than they would have seemed a year ago. For Willetta can do some of these things.

While we human beings have been developing to a high degree our senses of sight and hearing, have we failed to develop at the same rate our senses of smell and touch? The accomplishments of this little girl, handicapped from babyhood, seem to prove that this is so.

### *She Smells Color!*

Willetta can recognize colors by their smell. She can hear spoken words by placing the sensitive tips of her fingers against the throat of the speaker. She can identify different people by their personal odors. *She knows, even, when the family cat enters the room for a moment and then leaves.*

Physicians and psychologists are still debating the exact nature and extent of Willetta's powers. Scientific tests of her case are still in progress. There seems little doubt, however, from the experiments made that she really does possess a remarkable development of the senses of smell and of touch.

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Willetta Huggins, deaf and blind, hears the world of voices by placing her fingers on the receiver diaphragm of a telephone instrument. It is possible, scientists believe, that Willetta differs from the rest of us only in that she has learned how to use senses that we have neglected

When she was nine years old, Willetta was left an orphan. A year later she was admitted to the Wisconsin School for the Blind at Janesville. She was then partly blind and nearly deaf. Within five years she had lost what remained of her hearing and a year later she became totally blind.

Under this double misfortune she grew, as was natural, somewhat morose and listless. For a time she showed little interest in anything. Suddenly this changed. She was introduced by her teachers to Helen Keller's method of "hearing" by feeling the lips.

### *Her Interest Is Awakened*

Almost overnight Willetta lost her listlessness and indifference. She not only found out that she could use the method made famous by Miss Keller, but she discovered a better method. She found that when she placed the tips of her fingers on the throat of a person who was speaking, she could "feel" what was said merely by the vibrations of the throat. It was not necessary for her to touch the lips at all.

This unusual ability and the rapidity with which she learned the use of it, attracted the attention of her teachers and of the medical men attached to the institution. It was found that her sense of smell was no less extraordinary. The fame of her accomplishments spread. Attention was attracted in Chicago and on April 26, 1922, Willetta was examined before the Chicago Medical Society.

There is still some controversy about exactly what she can do, but the following facts are well attested:

She can recognize spoken sounds when her fingers are touching the throat of the speaker. She insists that she does not hear the sounds. She says that she "feels" them. She can also feel sounds in the same way through a wooden rod, such as a billiard cue, one end of which is pressed against the chest of the speaker, the other end of which she touches.

She carries around with her a portable telephone of the kind used by deaf people, but she does not put it to her ear. Instead, she touches the vibrating diaphragm in the telephone with the tips of her fingers. She asserts that she feels the vibrations of sound in this way. She has been able, under test, to hear concerts and stage performances and to describe correctly what was happening. Aided by her telephonic apparatus, she can carry on a conversation with all the ease of a person who has perfect hearing.

### *Feels the Ink on Newspapers*

She can read newspaper headlines, the denominations of paper money, and similar matter printed in large type merely by running her fingers over it. She says she feels the ink on the paper.

There is little doubt, also, that she can really smell colors. In a series of careful tests arranged by Dr. Thomas J. Williams, of Chicago, and Professor Robert H. Gault, of the Department of Psychology of

To demonstrate that persons with normal sight and hearing can develop the sense of touch so as to distinguish sounds with their hands, two students at Northwestern University conducted this speaking tube test under the direction of Professor Gault, noted psychologist. With eyes and ears bandaged, and

of psychologists to oppose vigorously the popular notions through which the ready acceptance of stories of unusual senses results," he wrote in the *Journal of the American Medical Association,*[11] insinuating that his gullible colleagues were being duped by their "will to believe."

In fact, when Jastrow personally tested Willetta in a dark room (rather than just covering her eyes), her performance was less than astonishing: "With the light extinguished she was unable to do anything at all." Jastrow's conclusion was that Willetta likely had some residual sight remaining, and her remarkable earlier performances had been the result of her using a "slit of vision" beneath the goggles to the see the colors of the objects under her nose. While Jastrow stopped short of accusing Willetta of outright fraud, he let the possibility sit there uncomfortably. "The awkward question cannot be avoided as to whether intentional deception encroaches upon self-deception on the part of the performer in this instance."

Jastrow's killjoy assessment rankled his contemporaries, many of whom thought he'd intimidated Willetta with his doubting attitude. Superintendent Hooper suggested that Jastrow's brusque manner and the dark, stuffy room he used had unnerved Willetta, who was said to have a "hysterical" disposition and who would smell colors only in fun games, or where she could show off before strangers, not in clinical tests. "If this girl read with a slit of vision as Professor Jastrow states when she performed the tests before our members,"[12] wrote John Nagel, President of the Chicago Medical Society, who had himself tried on the goggles used by Willetta, "it is even more marvelous than his theory of the will to believe."

Enter Robert Gault, a psychologist from Northwestern University who'd been following Willetta's circus of a story and wanted to settle the matter once and for all. "She is extremely temperamental," Gault told a packed audience during the annual meeting of the American Psychological Association in Cambridge.[13] It was a cold, snowy day in late December, and he was reporting the results of his own tests on Willetta, which he'd recently conducted at her school. "I mean by this that she is easily made resentful, easily depressed and made to cry. Oftentimes if the operator, even by chance, appears to intimate that he doubts her or that the test is a matter of great seriousness, she will fall into an emotional state that is at once prejudicial to a conclusive test." It was a pointed jab at Jastrow. Furthermore, while putting Willetta in a dark enclosed room, as Jastrow had done, would seem a sensible enough way to test her color-smelling abilities, "if one is seriously looking for evidence of olfactory sensitivity," Gault pointed out, "such a room must have a free circulation of fresh air." Alas, no such room could be found at the school. Besides, as he'd learned from Hooper, placing the girl in a dark room "would arouse an unfavorable emotional reaction."

**Demonstrations of Extraodinary Senses?** (Above) Willitta deduces the color of Helen Keller's dress by smelling it. *Wisconsin State Journal,* April 1923. (Below) Seated in front of a wireless-telegraph she touches the diaphrams of the earpieces with her fingers to read the vibrations.
**Previous page:** (top picture) Willitta feels the vibrations of words as they travel from the top of a man's head, and down a pole to her fingertips. (Middle picture) She touches the diaphram of a phone earpiece to sense words. *Popular Science Monthly,* April 1923.

Gault's answer to these logistical challenges was to rig some special automobile goggles for Willetta that would defy Jastrow's slit-of-vision interpretation. The goggles were "of the cup-shaped variety, lined with black paper, stuffed with cotton wool and bound

around the head with stiff elastic." He then added a strip of two-inch wide adhesive plaster, which was firmly attached to Willetta's skin and covered the cotton wool that projected below the goggles. Gault had twenty of his students, all with normal vision, try this apparatus on themselves, and not a single one could make out a dark wall from a lighted window. So essentially, even if Willetta did have some vision remaining, using such a device would be rendering her completely blind anyway. Wary of upsetting the girl and undermining her performance, Gault also did his best to turn the testing procedure into a lighthearted game, throwing a pile of 90 random yarns onto the table before Willetta and asking her to pick out all that were on the order of blue. "It turned out that there were 22 in the heap that could be properly so described," said Gault. "Four of them she failed to find. She succeeded exactly in selecting the 13 that were red and a tint of red. There were 19 that were yellows: tints, shades and mixtures. These she selected correctly… She placed an orange yarn with the yellow group remarking as she did so that she could have included it with the red group."

Impressed yet befuddled by her performance under such impossible conditions, Gault surmised that Willetta might be gaining some clues by touching the wool. To address this, he held the yarn directly under the girl's nose and asked her to name the colors. "She was unsuccessful," Gault reported. "She said, 'the smell goes out into the air.'" To capture the aroma, Gault secured a small glass tube open at both ends. Using tweezers, he placed inside of it a single strand of yarn while the other end was inserted in Willetta's nostril. She nailed it: she was 30 for 30 with randomly presented colors. Except, pointed out Gault, "I was surprised to find that whenever the tube was in the right nostril the girl was unsuccessful."

It turns out Willetta had a nose bleed that afternoon in, you guessed it, the right nostril. A few hours later, however, that nostril too was back in working order. But when a bad head cold struck some days later, her performance, using either nostril, plummeted.

To Gault, all of this confirmed that Willetta was indeed using her sense of smell to perform these colorful feats. Contrary to Jastrow's claims, he found no way by which she could be using some remaining vision—consciously or unconsciously—to pull a fast one on the Academy. Still, like Jastrow, Gault believed there must be some rational explanation. After all, although zinnias and sweet peas were never put to the test under these controlled conditions, her color-naming abilities disappeared when it came to smelling glass or

glazed earthenware, and when Gault decided to shine colored light upon her face, even directly upon her nose… nothing. Yet, even though other people could be trained to do a reasonable job at sniffing out whether two pieces of yarn colored with aniline dyes were different or similar, "no one [but Willetta] has been found who can name the colors in such a test."

Gault even floated the idea of Willetta being synesthetic. "It must be recalled," he reminded his audience in Cambridge, "that the girl was not blind before she was ten years old… If in her childhood she invariably connected odors and colors, and the same odor with the same color, she does not recall it—and she could hardly be expected to do so even if it were the fact: for as long as she could see she might easily overlook, or forget, at any rate, the synesthetic phenomenon if, indeed, it existed at all."

So the matter of Willetta Huggin's astonishing color-smelling abilities was put to rest in a bed of ambiguity. That is, until she made news again a few years later for a very different reason. And the ending, perhaps, is the strangest thing of all in this spectacle of a story. In January 1924, the *New York Times* ran an article with the headline "Deaf and Blind Girl Pronounced Cured,"[14] featuring none other than Willetta. After exhaustive tests by medical authorities, Willetta was now being declared "practically normal in both senses." "Willetta attributes her cure to faith in God and advice from Christian Science practitioners," read the article.

Unless you're inclined to believe that prayer and faith made a blind and deaf girl see and hear virtually overnight, I think it's reasonable to conclude that Jastrow, the grouchy skeptic who intimated that the girl was a fraud, was vindicated by this outcome. And indeed, since Gault determined through his studies that even those who weren't visually impaired could detect differences between colored strands of yarn at a level greater than chance, it's not much of a leap to postulate that an intelligent teenager with a particularly sensitive, but not magical, nose might teach herself to link specific colors with specific scents. She may not have been using a "slit of vision" to deceive audiences, but she used her eyesight nonetheless.

So, whatever happened to Willetta Huggins? Her trail seems to run mostly cold after her spiritual awakening. In late 1970, someone, somewhere apparently managed to track her down as living in the Midwest[15] under an assumed name, an accredited Christian Science healer unwilling to speak about her own colorful past. **S**

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