

PSYCHOLOGY

"Sees" with Fingers

An average American suburban housewife who has the extraordinary ability to detect colors using only her fingers for sense organs is being studied—By Elizabeth Mirel

► PATRICIA AINSWORTH STANLEY is a typical American suburban housewife—almost.

She has a husband, Ferrall Stanley, four sons aged 17, 15, 14 and 9, and a ten-acre home on the edge of Flint, Mich. She belongs to a bowling team and she likes to sew.

But there is one thing that makes Mrs. Stanley what she hesitantly calls "a rarity."

She can "see" with her fingers in the pitch dark.

How she does this nobody knows, least of all Mrs. Stanley.

"It has been an awful mystery to me so far," she says, ". . . but I'd like to know what it is and what's causing it."

A woman and a girl in Russia are asking the same questions about themselves and their extraordinary abilities.

One is Rosa Kuleshova, 22, of Nijni Tagil, a town in the Urals. Miss Kuleshova can read ordinary print and identify colors as if she had retinas in her fingertips.

Miss Kuleshova's ability has been reported in Russian popular and scientific journals and was reported in the American press in January 1963.

It has been verified by the Academy of Sciences of the USSR, the equivalent of the prestigious National Academy of Sciences in the United States.

The case of 9-year-old Lena Bliznova of Kiev was recently reported. She can read and identify colors with her fingers. She can also identify colors with her shoulders.

Mrs. Stanley, 42 years old, first found out about her ability to tell colors with her fingertips in 1939 when she was a senior in high school in Owensboro, Ky.

"We were doing an experiment in class," she told SCIENCE SERVICE. "We were blindfolded and given objects of different colors to see what we could do with them," Mrs. Stanley recalled.

She got the colors right.

This was witnessed by her teacher, Miss Mary Barret, and confirmed by Dr. Marion Gillim, now of Barnard College, the women's college of Columbia University, New York.

"I didn't think much about it then," Mrs. Stanley said. Up until now, she added, even her own husband and children were not aware of her rare capability.

After the case of Rosa Kuleshova was publicized, Dr. Richard P. Youtz, psychology professor of Barnard College, arranged through Dr. Gillim to talk with Mrs. Stanley.

She agreed to explore the mysteries of her tactile color sense with him.

"I didn't think I would be able to do it again at all," she said. It was and still is Mrs. Stanley's hope that in undertaking the experiments, she might somehow and some

day be helping the blind find a substitute for vision with the eyes.

The studies, previously known only to professional colleagues of the Psychonomic Society, were described by Dr. Youtz. Over and over again the studies demonstrate that Mrs. Stanley can "see" colors with her fingertips.

"One is inclined to be skeptical," Dr. Youtz admits. But let the studies speak for themselves:

In a sample experiment, Mrs. Stanley was blindfolded with a sleeping mask lined with tissue and seated before a black plywood box about the size of an orange crate. Leading out of the front panel of the box were two black velveteen armholes into which her hands were fitted. There was no light in the box.

Three cards were put into the box through a door in the back. One card had a red square on it; two cards had blue squares. A transparent plastic cover was placed over the cards to keep the texture the same. Heavy black tape surrounded the edges.

Dr. Youtz asked Mrs. Stanley to pick two cards of the same color and name the colors. Mrs. Stanley fingered the cards, indicated two of them and said they were blue. She did this five times in a row. She never saw the cards and she was never told if her answers were right or wrong.

To pick the colors correctly once is a chance of one in three. To do it five times in a row is a chance of one in 243. But Mrs. Stanley has done the series of five over and over again with many different colors. The odds for this are less than one in 10,000, far beyond chance.

Possible mental telepathy between Dr. Youtz and Mrs. Stanley was avoided by using what is appropriately known as a "double-blind" procedure. This means that neither Dr. Youtz nor Mrs. Stanley knew the color of the cards she touched.

Light and dark colors feel different to Mrs. Stanley.

"A light color feels smoother and thinner, and a dark color feels thicker and . . . heavier . . . and rougher . . . I don't know how to say," Mrs. Stanley commented. She cannot explain how she tells one dark color from another dark color, or one light color from another light color.

Occasionally Mrs. Stanley confuses pale yellow with white, because the colors are both so light.

Mrs. Stanley cannot read with her fingertips.

She cannot tell colors when her fingertips are below 75 degrees Fahrenheit but she can tell them at 80 degrees and above.

She identified red, yellow, green, blue,

purple, white and black cloths in early experiments.

Mrs. Stanley's color-sensing ability holds good even when she is wearing thin transparent plastic gloves, thin rubber gloves or very thin cotton gloves of the type used when medications are applied to the hands.

But she can not identify the color of objects submerged in warm water.

Perhaps something in the water, Dr. Youtz speculates, obstructs sensing the colors by the fingers. It is possible, although physically quite unlikely, that infrared radiation is the source of energy that "illuminates" the colors in the blackened box.

According to the Russian journals, evidence on Miss Kuleshova's ability to "see" with her fingers in the pitch dark is dubious.

Dr. Youtz's work is being sponsored by the National Institute of Mental Health, Bethesda, Md., and Barnard College.

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SURGERY

Surgeons Replace Thumbs With Fingers

► TRY USING your hands without the thumbs. Try holding a pencil, shuffling papers, turning a screwdriver or bowling. That will give you some idea of the problems faced by a person who has lost a thumb in an accident.

The advantage the thumb offers is "opposability"—the ability to come across and meet the other fingers.

Plastic surgeons have learned to give new thumbs to patients who need them by literally moving another finger over to take its place.

The commonest procedure has been to move the index finger to the thumb position. At the 49th Clinical Congress of the American College of Surgeons, San Francisco, Dr. James G. Sullivan of Toledo, Ohio, described an operation in which the thumb is replaced by the little finger.

Dr. Sullivan showed films of his operation, in which the little finger is detached, moved across the palm, and connected to the muscles which formerly operated the thumb.

The blood vessels and nerves of the little finger are left intact, so that the new "thumb" will have normal feeling.

Dr. Sullivan says that after about nine months to a year, patients learn to feel the moved finger as a thumb, except in cases of extreme pain.

"If you hit it with a hammer," he says, "it feels like a little finger."

Dr. Sullivan's film showed one of the earliest patients he operated on about five years ago bowling. The same patient, Dr. Sullivan says, claims he can lift an average of 175 pounds with the repaired hand.

Dr. Sullivan says he prefers transfer of the little finger because that finger is of less importance to the hand than any other.

He reports 11 successful little finger transfers at St. Vincent's and Mercy Hospitals in Toledo. Surgeons in other communities have also performed the operation.

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