

## Derma-optical Perception: A Peek Down the Nose

Recent tests, offered as confirming evidence for DOP,  
lack sufficiently tight controls to rule out trickery.

Martin Gardner

Science reporting in United States newspapers and mass-circulation magazines is more accurate and freer of sensationalism than ever before, with pseudoscience confined largely to books. A reverse situation holds in the Soviet Union. Except for the books that defended Lysenko's theories, Soviet books are singularly free of pseudoscience, and now that Lysenko is out of power, Western genetics is rapidly entering the new Russian biology textbooks. Meanwhile, Russian newspapers and popular magazines are sensationalizing science much as our Sunday supplements did in the 1920's. The Soviet citizen has recently been presented with accounts of fish brought back to life after having been frozen 5000 years, of deep-sea monsters that leave giant tracks across the ocean floor, of absurd perpetual-motion devices, of extraterrestrial scientists who have used a laser beam to blast an enormous crater in Siberia, and scores of similar stories.

By and large, the press in the United States has not taken this genre of Soviet science writing seriously. But in 1963 and 1964 it gave serious attention to a sudden revival, in Russia's popular press, of ancient claims that certain persons are gifted with the ability to "see" with their fingers.

The revival began with a report, in the summer of 1962, in the Sverdlovsk newspaper *Uralsky Rabochy*. Isaac Goldberg, of First City Hospital in Lower Tagil, had discovered that an epileptic patient, a 22-year-old girl named Rosa Kuleshova, could read

print simply by moving a fingertip over the lines. Rosa went to Moscow for more testing, and sensational articles about her abilities appeared in *Izvestia* and other newspapers and popular magazines. The first report in the United States was in *Time*, 25 January 1963.

When I first saw *Time*'s photograph of Goldberg watching Rosa, who was blindfolded, glide her middle finger over a newspaper page, I broke into a loud guffaw. To explain that laugh, I must back up a bit. For 30 years my principal hobby has been magic. I contribute to conjuring journals, write treatises on card manipulation, invent tricks, and, in brief, am conversant with all branches of this curious art of deception, including a branch called "mentalism."

For half a century professional mentalists—performers, such as Joseph Dunninger, who claim unusual mental powers—have been entertaining audiences with "eyeless vision" acts. Usually the mentalist first has a committee from the audience seal his eyes shut with adhesive tape. Over each eye is taped something opaque, such as a powder puff or a silver dollar. Then a large black cloth is pulled around the eyes to form a tight blindfold. Kuda Bux, a Mohammedan who comes from Kashmir, is perhaps the best known of today's entertainers who feature such an act. He has both eyes covered with large globs of dough, then many yards of cloth are wound like a turban to cover his entire face from the top of his forehead to the tip of his chin. Yet Kuda Bux is able to read books, solve mathematical problems on a blackboard, and describe objects held in front of him.

Now I do not wish to endanger my standing in the magic fraternity by revealing too much, but let me say that Kuda Bux and other mentalists who feature eyeless vision do obtain, by trickery, a way of seeing. Many ingenious methods have been devised, but the oldest and simplest, surprisingly little understood except by magicians, is known in the trade as the "nose peek." If the reader will pause at this point and ask someone to blindfold him, he may be surprised to discover that it is impossible, without injury to his eyes, to prepare a blindfold that does not permit a tiny aperture, on each side of the nose, through which light can enter each eye. By turning the eyes downward one can see, with either eye, a small area beneath the nose and extending forward at an angle of 30 to 40 degrees from the vertical. A sleep-mask blindfold is no better; it does not fit snugly enough around the nose. Besides, slight pressure on the top of the mask, under the pretense of rubbing the forehead, levers out the lower edge to permit even wider peeks. The great French magician Robert-Houdin (from whom Houdini took his name), in his memoirs (*1*), tells of watching another conjuror perform a certain card trick while blindfolded. The blindfold, Robert-Houdin writes, "was a useless precaution . . . for whatever care may be taken to deprive a person of sight in this way, the projection of the nose always leaves a vacuum sufficient to see clearly." Pushing wads of cotton or cloth into the two apertures accomplishes nothing. One can always, while pretending to adjust the blindfold, secretly insert his thumb and form a tiny space under the wadding. The wadding can actually be an asset in maintaining a wider aperture than there would be without it. I will not go into more subtle methods currently used by mentalists for overcoming such apparent obstacles as adhesive tape criss-crossed over the eyelids, balls of dough, and so on.

If the mentalist is obtaining information by a nose peek (there are other methods), he must carefully guard against what has been called the "sniff" posture. When the head of a blindfolded person is in a normal position, the view down the nose covers anything placed on the near edge of a table at which the person is seated. But to extend the peek farther forward

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it is necessary to raise the nose slightly, as though one is sniffing. Practiced performers avoid the sniff posture by tilting the head slightly under cover of some gesture, such as nodding in reply to a question, scratching the neck, and other common gestures.

One of the great secrets of successful blindfold work is to obtain a peek in advance, covered by a gesture, quickly memorize whatever information is in view, then later—perhaps many minutes later—to exploit this information under the pretense that it is just then being obtained. Who could expect observers to remember exactly what happened 5 minutes earlier? Indeed, only a trained mentalist, serving as an observer, would know exactly what to look for.

Concealing the “sniff” demands much cleverness and experience. In 1964, on a television show in the United States, a girl who claimed powers of eyeless vision was asked to describe, while blindfolded, the appearance of a stranger standing before her. She began with his shoes, then went on to his trousers, shirt, and necktie. As her description moved upward, so did her nose. The photograph in *Time* showed Rosa wearing a conventional blindfold. She is seated, one hand on a newspaper, and sniffing. The entire newspaper page is comfortably within the range of a simple nose peek.

### Other DOP Claimants

After the publicity about Rosa, Russian women of all sorts turned up, performing even more sensational feats of eyeless vision. The most publicized of these was Ninel Sergiyevna Kulagina. The Leningrad newspaper *Smena*, 16 January 1964, reported on her remarkable platform demonstration at the Psychoneurological Department of the Lenin-Kirovsk District. The committee who examined Ninel's blindfold included S. G. Fajnbarg (Ninel's discoverer), A. T. Alexandrov, rector of the University of Leningrad, and Leonid Vasiliev, whose laboratory at the University is the center of parapsychology research in Russia. No magicians were present, of course. While “securely blindfolded,” Ninel read from a magazine and performed other sensational feats. Vasiliev was reported as having described her demonstration as “a great scientific event.”

There were dozens of other DOP claimants. The magazine *USSR* (now

*Soviet Life*), published here in English, devoted four pages to some of them in its February 1964 issue (2). Experiments on Rosa, this article said, made it unmistakably clear that her fingers were reacting to ordinary light and not to infrared heat rays. Filters were used which could block either light or heat. Rosa was unable to “see” when the light (but not heat) was blocked off. She “saw” clearly when the heat rays (but not light) were blocked off. “The fingers have a retina,” biophysicist Mikhail Smirnov is quoted as saying. “The fingers ‘see’ light.”

Accounts of the women also appeared in scientific publications. Goldberg contributed a report on his work with Rosa to *Voprosy Psikhologii* in 1963 (3). Biophysicist N. D. Nyuberg wrote an article about Rosa for *Priroda*, May 1963 (4). Nyuberg reports that Rosa's fingers, just like the human eye, are sensitive to three color modes, and that, after special training at the neurological institute, she “succeeded in training her toes to distinguish between black and white.” Other discussions of Rosa's exploits appeared in Soviet journals of philosophy and psychology.

Not only did Rosa read print with her fingers, she also described pictures in magazines, on cigarette packages, and on postage stamps. A *Life* correspondent reported that she read his business card by touching it with her elbow. She read print placed under glass and cellophane. In one test, when she was “securely blindfolded,” scientists placed a green book in front of her, then flooded it with red light. Exclaimed Rosa: “The book has changed color!” The professors were dumbfounded. Rosa's appearance on a TV program called “Relay” flushed out new rivals. *Nedelya*, the supplement of *Izvestia*, found a 9-year-old Kharkov girl, Lena Bliznova, who staggered a group of scientists by reading print (“securely blindfolded”) with fingers held a few inches off the page. Moreover, Lena read print just as easily with her toes and shoulders. She separated the black from the white chess pieces without a single error. She described a picture covered by a thick stack of books (see my remarks above about exploiting previously memorized information).

In the United States, *Life* (12 June 1964) published a long uncritical article by Albert Rosenfeld (5), the writer whose card Rosa had read with her elbow. The Russian work is sum-

marized and hailed as a major scientific breakthrough. Colored symbols are printed on one page so the reader can give himself a DOP test. Gregory Razran, who heads the psychology department at Queens College, New York, is quoted as saying that perhaps “some entirely new kind of force or radiation” has been detected. Razran expected to see “an explosive outburst of research in this field. . . . To see without the eyes—imagine what that can mean to a blind man!”

Let us hope that Razran, in his research, will seek the aid of knowledgeable mentalists. In a photograph of one of his DOP tests, shown in the *Life* article, the subject wears a conventional sleep-mask, with the usual apertures. She is reaching through a cloth hole in the center of an opaque partition to feel one of two differently colored plates. But there is nothing to prevent her from reaching out with her other hand, opening the cloth a bit around her wrist, then taking a nose peek through the opening.

The most amusing thing about such experimental designs is that there is a simple, but never used, way to make sure all visual clues are eliminated. A blindfold, in any form, is totally useless, but one can build a light-weight aluminum box that fits over the subject's head and rests on padded shoulders. It can have holes at the top and back for breathing, but the solid metal must cover the face and sides, and go completely under the chin to fit snugly around the front of the neck. Such a box eliminates at one stroke the need for a blindfold, the cumbersome screen with arm holes, various bib devices that go under the chin, and other clumsy pieces of apparatus designed by psychologists unfamiliar with the methods of mentalism. No test made without such a box over the head is worth taking seriously. It is the only way known to me by which all visual clues can be ruled out. There remain, of course, other methods of cheating, but they are more complicated and not likely to be known outside the circles of professional mentalism.

In its 1964 story *Life* did not remind its readers of the three pages it had devoted, in 1937, to Pat Marquis, “the boy with the X-ray eyes” (6). Pat was then 13 and living in Glendale, California. A local physician, Cecil Reynolds, discovered that Pat could “see” after his eyes had been taped shut and covered with a blindfold. Pat

was carefully tested by reporters and professors, said *Life*, who could find no trickery. There are photographs of Pat, "securely blindfolded," playing ping-pong, pool, and performing similar feats. Naturally he could read. Reynolds is quoted as saying that he believed that the boy "saw" with light receptors in his forehead. Pat's powers were widely publicized at the time by other magazines and by the wire services. He finally agreed to being tested by J. B. Rhine, of Duke University, who caught him nose peeking (7).

The truth is that claims of eyeless vision turn up with about the same regularity as tales of sea serpents. In 1898 A. N. Khovrin, a Russian psychiatrist, published a paper on "A rare form of hyperaesthesia of the higher sense organs" (8), in which he described the DOP feats of a Russian woman named Sophia. There are many earlier reports of blind persons who could tell colors with their fingers, but "blindness" is a relative term, and there is no way now to be sure how blind those claimants really were. It is significant that there are no recent cases of persons known to be totally blind who claim the power to read ordinary print, or even to detect colors, with their fingers, although it would seem that the blind would be the first to discover and develop such talents if they were possible.

### Jules Romains' Work

Shortly after World War I the French novelist Jules Romains, interested in what he called "paroptic vision," made an extensive series of tests with French women who could read while blindfolded. His book, *Vision Extra-Rétinienne* (9) should be read carefully by every psychologist tempted to take the Russian claims seriously, for it describes test after test exactly like those that have been given to today's Russians. There are the same lack of controls, the same ignorance of the methods of mentalism, the same speculations about the opening of new scientific frontiers, the same unguarded predictions about how the blind may someday learn to "see," the same scorn for those who remain skeptical. Romains found that DOP was strongest in the fingers, but also present in the skin at any part of the body. Like today's Russian defenders of DOP, Romains is convinced that the human skin contains organs sensitive to or-

inary light. His subjects performed poorly in dim light and could not see at all in total darkness. Romains thought that the mucous lining of the nose is especially sensitive to colors, because in dim light, when colors were hard to see, his subjects had a marked tendency to "sniff spontaneously."

The blindfolding techniques Romains used are similar to those used by the more recent investigators. Adhesive tape is crossed over the closed eyes, then folded rectangles of black silk, then the blindfold. At times cotton wool is pushed into the space alongside the nose, at times a projecting bib is placed under the chin. (Never a box over the head.) Anatole France witnessed and commented favorably on some of Romains' work. One can sympathize with the novelist when he complained to a U.S. reporter (10) that both Russian and American psychologists had ignored his findings and had simply "repeated one twentieth of the discoveries I made and reported."

It was Romains' book that probably aroused magicians in the United States to devise acts of eyeless vision. Harlan Tarbell, of Chicago, worked out a remarkable act of this type which he performed frequently (11). Stanley Jaks, a professional mentalist from Switzerland, later developed his method of copying a stranger's signature, upside down and backward, after powder puffs had been taped over his eyes and a blindfold added (12). Kuda Bux uses still other techniques (13). At the moment, amateurs everywhere are capitalizing on the new wave of interest in DOP. In my files is a report on Ronald Coyne, a 12-year-old Oklahoma boy who lost his right eye in an accident. When his left eye is "securely blindfolded," his empty right eye socket reads print without hesitation. Young Coyne has been appearing at revival meetings to demonstrate his miraculous power. "For thirteen years he has had continuous vision where there is no eye," reads an advertisement in a Miami newspaper for an Assembly of God meeting. "Truly you must say 'Mine eyes have seen the glory of God.'"

### Tests in the United States

The most publicized DOP claimant in the United States is Patricia Stanley. Richard P. Youtz, of the psychology department at Barnard College, was discussing the Soviet DOP work at a faculty lunch one day.

Someone who had taught high school in Owensboro, Kentucky, recalled that Patricia, then a student, had astounded everyone by her ability to identify objects and colors while blindfolded. Youtz traced Patricia to Flint, Michigan, and in 1963 he made several visits to Flint, tested her for about 60 hours, and obtained sensational results. These results were widely reported by the press and by such magazines of the occult as *Fate* (14). The soberest account, by science writer Robert K. Plumb, appeared in the *New York Times*, 8 January 1964 (15). Mrs. Stanley did not read print, but she seemed able to identify the colors of test cards and pieces of cloth by rubbing them with her fingers. Youtz's work, together with the Russian, provided the springboard for Leonard Wallace Robinson's article "We have more than five senses" in the *New York Times Magazine*, Sunday, 15 March.

Youtz's first round of tests, in my opinion, were so poorly designed to eliminate visual clues that they cannot be taken seriously. Mrs. Stanley wore a conventional sleep-mask. No attempt was made to plug the inevitable apertures. Her hands were placed through black velvet sleeves, with elastic around the wrists, into a lightproof box constructed of plywood and painted black. The box could be opened at the other side to permit test material to be inserted. There was nothing to prevent Mrs. Stanley from picking up a test card or piece of colored cloth, pushing a corner under the elastic of one sleeve, and viewing the exposed corner with a simple nose peek. Youtz did have a double sleeve arrangement that might have made this difficult, but his account (16) of his first round of tests, on which Mrs. Stanley performed best, indicate that it was attached only on the rare occasions when a photomultiplier tube was used. Such precautions as the double sleeve, or continuous and careful observation from behind, seemed unnecessary because Mrs. Stanley was securely blindfolded. Moreover, there was nothing to prevent Mrs. Stanley from observing, by nose peeks, the test material as it was being placed into the light-tight box.

Here is a description of Mrs. Stanley's performance by the *New York Times* reporter who observed her: "Mrs. Stanley concentrates hard during the experiments. . . . Sometimes she takes three minutes to make up her mind. . . . She rests her forehead under the blindfold against the black box as

though she were studying intently. Her jaw muscles work as she concentrates" (17). While concentrating, she keeps up a steady flow of conversation with the observers, asking for hints on how she is doing.

Youtz returned to Flint in late January 1964 for a second round of tests, armed with more knowledge of how blindfolds can be evaded (we exchanged several letters about it) (18) and plans for tighter controls. I had been unsuccessful in persuading him to adopt a box over the head, but even without this precaution, results of the second round were not above chance expectation. These negative results were reported by the *New York Times* (17), but not by any other newspaper or news magazine that had publicized the positive results of the first round of tests. Youtz was disappointed, but he attributed the failure to cold weather (19).

A third series of tests was made on 20 April for an observing committee of four scientists. Results were again negative. In the warm weather of June, Youtz tested Mrs. Stanley a fourth time, over a 3-day period. Again, performance was at chance level. Youtz attributes this last failure to Mrs. Stanley's fatigue (19). He remains convinced that she does have the ability to detect colors with her fingers and suspects that she does this by sensing delicate differences in temperature (20). Although Russian investigators had eliminated this as an explanation of Rosa's powers, Youtz believes that his work with Mrs. Stanley, and later with less skillful Barnard students, will eventually confirm this hypothesis. He strongly objects to calling the phenomenon "vision." None of his subjects has displayed the slightest ability to read with the fingers.

### Ninel Is Caught Cheating

In Russia, better-controlled testing of Rosa has strongly indicated nose peeking. Several articles have suggested this, notably those by L. Teplov, author of a well-known book on cyber-

netics, in the 1-7 March 1964 issue of *Nedelya*, and in the 25 May issue of the Moscow *Literaturnaya Gazeta*. Ninel Kulagina, Rosa's chief rival, was carefully tested at the Bekhterev Psychoneurological Scientific Research Institute in Leningrad. B. Lebedev, the institute's head, and his associates summarize their findings as follows (21):

In essence, Kulagina was given the same tasks as before, but under conditions of stricter control and in accordance with a plan prepared beforehand. And this was the plan: to alternate experiments in which the woman could possibly peek and eavesdrop with experiments where peeking would be impossible. The woman of course did not know this. As was to be expected, phenomenal ability was shown in the first instance only. In the second instance [under controls] Kulagina could distinguish neither the color nor the form. . . .

Thus the careful checking fully exposed the sensational "miracle." There were no miracles whatever. There was ordinary hoax.

In a letter to *Science* (22), Joseph Zubin, a biometrics researcher at the New York State Department of Mental Hygiene, reported the negative results of his testing of an adolescent who "read fluently" after blindfolds had been secured around the edges with adhesive tape. Previous testing by several scientists had shown no evidence of visual clues. It became apparent, however, that the subject tensed muscles in the blindfolded area until "a very tiny, inconspicuous chink appeared at the edge. Placing an opaque disk in front of the chink prevented reading, but not immediately. The subject had excellent memory and usually continued for a sentence or two after blocking of the reading material." Applying zinc ointment to the edges of the adhesive proved only temporarily effective, because muscle tensing produced new chinks (made easier to detect by the white ointment). A professional magician, Zubin reports, participated in the investigations.

The majority of psychologists, both here and in the Soviet Union, have remained unimpressed by the latest revival of interest in DOP. In view of the failures of subjects to demonstrate

DOP when careful precautions were taken to rule out peeks through minute apertures, and in view of the lack of adequate precautions in tests that yielded positive results, this prevailing scepticism appears to be strongly justified.

### References and Notes

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3. For English translation, see I. Goldberg, *Soviet Psychol. Psychiat.* 2, 19 (1963).
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10. J. Davy, *Observer*, 2 Feb. 1964.
11. See H. Tarbell, "X-ray eyes and blindfold effects" in *The Tarbell Course in Magic* (Tannen, New York, 1954), vol. 6, pp. 251-261. Tarbell speaks of his own work in this field as a direct result of his interest in Romain's work, and briefly describes an eyeless vision act by a woman who performed under the stage name of Shireen in the early 1920's.
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15. R. K. Plumb, "Woman who tells color by touch mystifies psychologist," in *New York Times*, 8 Jan. 1964; see also Plumb's follow-up article, "6th Sense is hinted in ability to 'see' with fingers," *ibid.*, 26 Jan. 1964. The *Times* also published an editorial, "Can fingers 'see'?" 6 Feb. 1964.
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21. B. Lebedev, *Leningradskaya Pravda*, 15 Mar. 1964; translated for me by Albert Parry, department of Russian studies, Colgate University.
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