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RESEARCH ARTICLE

Laboratory Investigations of Extrasensory Identification of Concealed 5-Character Codes by a Presumably Gifted Teenager in China

Dong Shen
Cupertino, California, USA
dongshen@hotmail.com

Run-Sheng Shen
Yangzhou, Jiangsu Province, People's Republic of China

Gang Li
Guangzhou, Guangdong Province, People's Republic of China

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Abstract—We report on laboratory investigations of extrasensory identification of object information against a visual sensory barrier conducted on a presumably gifted teenage female subject in China. The investigations challenged the subject to identify a 5-character code (black, bold, Arial, font size 14) prepared by a double-blind procedure and sealed to block ordinary sensory access. Each of the five characters of each sealed code were randomly generated by computer permutation among 34 choices, including capitalized letters of A to Z and numbers from 2 to 9, by a third party at a remote site before mailing to the examiner. The subject's attempts to identify, via self-claimed extrasensory means, the concealed 5-character code over the duration of each trial was monitored and video-recorded. Trials of 16 and 18 tests were conducted approximately three months apart. Of the total 34 trials, the subject made a full hit (i.e. five correct characters at the entirely correct sequence) five times, corresponding to a binomial probability of $p < .00001$. We conclude that extrasensory identification against a visual sensory barrier deserves further investigation.

Keywords: clairvoyance, extrasensory perception (ESP), extrasensory identification (ESI), altered or alternative state of consciousness (ACS), second consciousness state (SCS)

INTRODUCTION

Extrasensory perception (ESP; Auerbach, 1996; Irwin, 2004; May et al., 2014, Radin, 1997, 2006), which refers to the ability of human beings to access object information across spatial or temporal barriers, remains an open topic in parapsychology. Manifested in many forms (Nelson et al., 1996), phenomena of an ESP nature are inconsistent with what could be expected based on the five common sensory apparatuses. ESP involving information acquisition that is inexplicable by way of visual sensory responses has been called various names, such as “eyeless sight” (Romains, 1924) or “extraocular vision” (Jen, 1983). In this work we specify ESP involving information acquisition inexplicable by way of visual sensory responses as extrasensory identification (ESI) against a visual sensory barrier.

As early as 1884, the French physiologist and 1913 Nobel Laurate Charles Richet began experimental studies of a metapsychical nature akin to ESI (Maxwell & Richet, 1905). During that period, another French scientist, Émile Boirac, also conducted studies that were ESI-like (Boirac, 1917). The 1930 publication of Upton Sinclair’s *Mental Radio* (Sinclair, 1930) didn’t directly advocate information transfer or acquisition via extrasensory means; however, the “telepathic” communications as reported would be inexplicable otherwise. These earlier efforts by scientists and nonscientists aroused the public and scientific interests that challenged future research to exercise more rigorous measures in studies of extrasensory faculty. In 1934, Professor J. B. Rhine (Rhine, 1934) of Duke University in the United States used five different symbols on Zener cards to carry out studies on ESI against a visual sensory barrier. Those studies by J. B. Rhine were followed upon to assure adequate experimental controls in examining extrasensory phenomena (Rhine & Brier, 1968).

Speculations include that a major difference between a phenomenon of extrasensory faculty and a phenomenon of a purely physical nature may lie in the engagement of human consciousness as an indispensable experimental factor that, however, cannot be easily replicated (Jahn, 1979; Atmanspacher, 1999; Cardeña, 2018; Nelson, 2018). And a gifted person presumably would enhance the yield of an experiment on ESI (Marwaha & May, 2017).

In modern China, researchers have held the view that ESI against a visual sensory barrier could be inducible, using training that helps focus and direct the mind—a norm in the qigong culture that has been practiced for thousands of years. Such a perspective had prompted some researchers in China to take an approach different from Western ESI forefathers and counterparts in investigating ESI against a visual sensory barrier: (1) to train ordinary people to develop their ESI abilities, (2) to test ESI on people who have received training with the expectation that higher yields of ESI may result compared with results from the random population (Wu et al., 1998). In 1979, Professor Shouliang Chen (Chen, 1979) of Beijing (Peking) University reported ESI against a visual sensory barrier from a cohort of the preadolescent population. A subsequent study by the same author suggested that the ability of ESI against a visual sensory barrier might not be uncommon among children of preadolescent age (Chen, 1980).

In the years that followed, several laboratories in Chinese universities, including Fudan University (in Shanghai City), Yunnan University (in Kunming City, the provincial capital of Yunnan Province in the southwestern region of China), and Hangzhou University (in Hangzhou City, the provincial capital of Zhejiang Province in the vicinity of Shanghai), also reported experiments of ESI against a visual sensory barrier conducted on a predominantly preadolescent population (Zha & McConnell, 1991). The claimed success rate of ESI against a visual sensory barrier in those studies published in Chinese-language journals had been at 40% to 60%, versus a base rate that was hardly greater than 1% by chance expectation (i.e. equivalent to guessing a two-digit number or a Chinese character out of hundreds of common simple characters; Wu et al., 1998). Unfortunately, those original results faced difficulty in dissemination to the Western community via peer-reviewed venues and appeared in English-language literature only as isolated reports (Jen, 1983).

In the past 40+ years, many other experiments were carried out in China to further investigate ESI against a visual sensory barrier, or other presentations of ESP faculty that included color recognition (Wu et al., 1998), residual information identification (Chen, 1993; Liu, 1998), telepathic information transfer (Shao & Yu, 1992), etc. These and other studies (Chen & He, 1999; Chen, 1999; Fang & Yu, 1990; He et al., 1980;

Lee, 1998; Lee, 1999; Lin & Liu, 1997; Luo & Zhu, 1990; Song, 2014; Somatic Information Science Research Group, 1994) spanned a broad spectrum of phenomena with most of them focusing on ESI; they were conducted at various levels of scientific rigor. These reports seemed to have supported Chen's view (1980) that ESI abilities likely could be inducible and thus easier to register in the preadolescent population. However, questions remain in terms of the experimental controls that would firmly substantiate such notions.

Following the earlier paths of Chinese-based ESI studies, Dong Shen (subsequently noted as D. Shen) had been in search of a gifted subject in China for over a decade prior to this work (Shen, 2001; Shen, 2010; Shen, 2014), and he succeeded in confirming only one. Hereby we report the laboratory testing of ESI against a visual sensory barrier conducted on this single subject, using a new protocol designed to safeguard the integrity of experimental controls in a resource-limited setting.

EXPERIMENTAL MATERIALS AND METHODS

The Presumably Gifted Subject

The presumably gifted female subject was born in 1999; she was given a disguised feminine name of Xuan Chen by her parents due to privacy concerns. The subject was a middle school student for the duration of this investigation. Starting in December 2013, the subject had engaged in training by a party independent from this study, who advertised trainings to promote cognitive functions that would enhance performance on schoolwork (this kind of promotion is extremely popular in China). By the Spring of 2014, the subject self-reported being able to complete ESI tasks such as identifying Chinese characters concealed to be inaccessible by ordinary visual sensory means. The subject was introduced to D. Shen (accompanied by R. S. Shen) on August 1, 2014, for a demonstration (single-blind) in Yangzhou City in Jiangsu Province, China, which is close to her hometown. Later the subject was invited to travel to two other cities to take double-blind tests (neither the subject nor the examiners knew a priori any of the codes of the test samples), to be detailed hereafter. On all these occasions, the subject was escorted by both parents to the mutually agreed-upon test site (a hotel guestroom). Verbal consent from the parents of the minor were secured for the tests. The tests required video surveillance and recording and the presence of D. Shen and one assistant who all were blinded to the test samples.

Double-Blind Off-Site Preparation of the Test Samples

The test samples were prepared as double-blind according to the consensus referred to as "Zhu's Five Criteria," which was established in the 1980s among Chinese-speaking ESP investigators (Zhu & Zhu, 1987). The test samples were prepared by Ms. Bo Li, a friend of D. Shen in Beijing, and express-mailed to D. Shen. Ms. Li had never met or communicated with the subject. Neither did Ms. Li know the exact date and actual site of the tests. The test samples remained sealed until a reading was claimed to be completed by the subject.

The test sample contained a 5-letter code generated from a pool consisting of capital English letters A to Z and Arabic numerals 2 to 9. The Arabic numerals 0 and 1 were removed from the pool because they could be easily confused with the English-language capital letters O and I and unnecessarily complicate the reading, based on the prior understanding that finer differences would be lost in the information transfer presumed to be associated with ESI, as is true with any information transfer process (Yang & Liu, 1981). The number of characters in the pool was therefore 26 + 10 – 2 = 34. From this pool of 34 characters, five were randomly selected for each sample using the pseudorandom character string functions of Microsoft Excel. The code comprised the randomly permuted 5-character combination which was then printed in black, boldface, Arial font, at a font size of approximately 14, on A4 paper (80 g/m^2, size 210 mm × 297 mm). Examples of the test samples are shown in Figure 1. Twelve codes were printed on each sheet over twelve rows covering the entire height of the page with equal spacing between neighboring rows. Each of the bold characters measured approximately 5.0 mm × 4.0 mm (height × width). A 20-mm margin was placed on the left side of each sheet. On this margin, as well as on the other side of the sheet, a unique two-digit Arabic number was printed in duplicate.

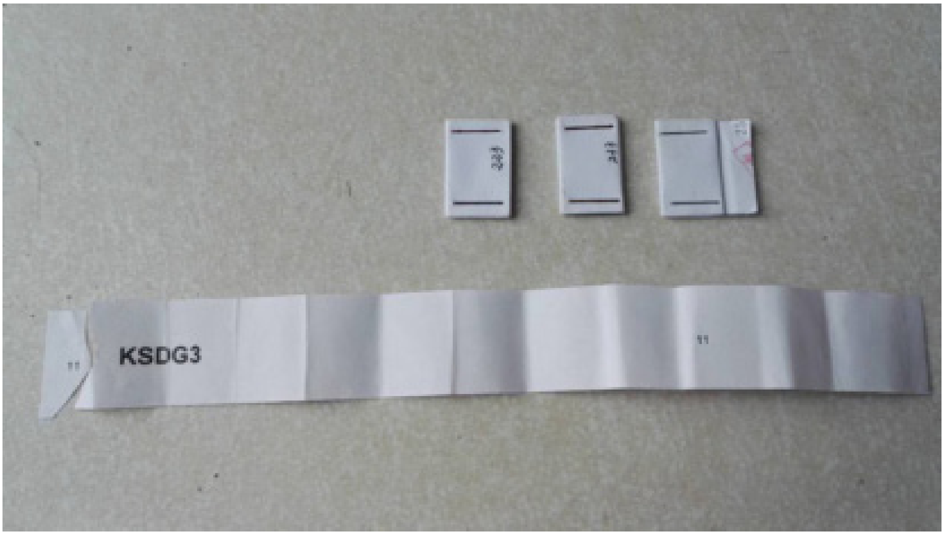

Figure 1. Photograph of some samples used for the tests. Shown in the photograph are four samples, with three remaining in the sealed condition (upper row), see the staples at the opposite ends of each sample) and one unfolded to expose the 5-character code (lower row).

Upper row: **Seen on the outer surface of the two sealed samples are 3-digit numbers (223 and 233) handwritten on-site to uniquely mark each sample. Seen on the partially unfolded pagelet of the one still-stapled sample (on the right) is a preprinted 2-digit number (25) intended to provide an additional safeguard to prevent the sample being tampered with or replaced.**

Lower row: **Seen on the unfolded sample on the lower panel is the 5-character code printed in Arial font, bold, size 14. Also seen on the unfolded sample is a small 2-digit number (11), used as the additional safeguard against fraudulence.**

Each sheet with 12 rows of printed codes was cut into 12 individual strips. A small irregular piece of paper was torn off over the left margin of each strip of paper. The torn-off portion was retained by the person preparing the sample in accordance with the so-called HUFU (which literally means "tiger-seal") method (see Figure 1, lower row), which consisted of two uniquely matched objects to verify military command as used by the ancient Chinese. The remaining long portion of each strip of paper with the code at one far side was then folded 9 times from the side of the code, resulting in a total of 10 layers of paper with the code hidden in the middle 2 layers. This ensured that the hidden code could not be seen by holding the paper against strong light. Finally, the folded samples, each the size of a thumb-drive, was stapled on the two opposite ends to complete the off-site preparation. Approximately 80 sealed test samples and torn-off pieces were mailed by Ms. Li to D. Shen.

On-Site Preparation of the Test Sample

Prior to the test, D. Shen hand-wrote a unique 3-digit number at the outer edge of each test sample. Afterwards, approximately 50% of the total of ~80 test samples were randomly chosen by D. Shen and placed in a small open container (not big enough to hold the entire batch of samples as they were mixed) and thoroughly mixed. A test sample was then randomly picked up by D. Shen or his assistant and then given to the subject. There were also a few occasions when the test sample was picked by the subject herself. No one on-site had any prior knowledge of the code on any test samples. Codes were not checked until after the subject claimed to have completed a reading and the test process had moved to the code-checking phase.

The Test Protocol

The subject was informed that she was to "read" a code consisting of 5 characters, and each of the five characters could be a combination of any letters of the capitalized English alphabet A to Z and the Arabic numerals 2 to 9. The subject was permitted to place the test sample on the table at which she was sitting but was not allowed to handle or move the sample in any way suggestive of covert manipulation. The subject occasionally held the thumb-drive–sized test sample between her thumb and forefinger when focusing. The test sample remained within the field of vision of D. Shen and his assistant as well as any witnesses (the subject's parents). Recorded video surveillance was running continuously, with the subject, table, and test sample in the complete field of view without any blockage of the views or interruption in the videoframes. Breaching of any of the aforementioned conditions would trigger the declaration of an invalid trial.

Within each trial, the subject was permitted to touch or grip the test sample with her fingers because she claimed to need to touch the test sample to facilitate the reading (no time limit was set, but repeated attempts at such tasks requiring strong focus of attention would soon get frustrating and boring for a teenage subject, or anybody). No staple seals of the test samples were breached in any of the trials until the subject declared (verbally or sometimes with body language) the completion of a reading after writing the perceived code onto the reporting sheet. D. Shen and the assistant would then inspect the exterior condition of the test sample, confirming that the original handwritten mark had not changed and that the stapled condition remained intact. The staples were then removed under recorded video surveillance by D. Shen or his assistant, and the sample was unfolded to make the code visible and then announced to everyone who was on-site. The segment with the code was cut from the paper and pasted onto the logging sheet. A new trial was not started until the previous trial had had a verdict.

The time it took for the subject to conduct the task of identification also was recorded. The starting time of a trial was marked from when the subject had possession of the test sample drawn by the examiner or occasionally by herself from the sample box. The stopping time of a trial was marked when the subject indicated, verbally or with body language, that a reading was complete. The confirmation of completion of the attempted "reading" was not necessarily immediately after she wrote down something on the reporting sheet. The time she took to write down the perceived code was spontaneous, and the number of characters she wrote down at a time also was spontaneous.

The Testing Sites and Dates

All tests were conducted during the daytime in a hotel guest room. One test was conducted in Haikou City, Hainan Province, China, and another one in Wuxi City, Jiangsu Province, China. The tests in Haikou City included 16 completed trials, which were performed over four days during February 19–24, 2015. The test in Wuxi City included 18 trials, which were conducted on May 16 and 17, 2015. Three more trials were actually conducted earlier, on August 1, 2014, in Yangzhou City when the subject first met D. Shen (accompanied by R. S. Shen) for a demonstration round. Those three trials were not counted toward the study results, however, because the test objects were not prepared in a double-blind way.

Merit of Match and Statistical Consideration

The outcome of reading the 5-letter codes was assessed with a "merit-of-match (MoM)," defined as $MoM = \sum_{i=1}^{5} M_i$, where M_i is a binary number. M_i was assigned 1 if there was an exact match of the letter at the *i*-th position of the five-character code. M was assigned 0 otherwise. The reading can thus result in any integer number of MoM from 0 to 5, with a higher number indicating a better hit. A full miss is counted as MoM = 0, and an exact match (full hit) is counted as MoM = 5.

This was a study of a single subject attempting multiple trials of trying to identify a five-character code. Each character had the same probability of being permutated from a pool of 34 choices. A binomial probability thus can be calculated for the chance of making a full hit out of random guessing.

The trials were expected to result in a small number of hits (if there would be any hits at all) and a much greater number of misses. In comparing the conditions of the possible hits and the more-likely misses, it would also be interesting to compare if there was any difference in the time the subject took for a full hit, a full miss, or something else. The resulting durations of the trials were thus grouped into full miss, partial miss, and full hit, for assessing the difference in the times taken by the subject. The time difference between different outcomes with different sample sizes was analyzed by an independent two-sample *t*-test (Campbell et al., 2007). An alpha value of $p < .05$ was considered significant.

RESULTS

The Outcomes of the 16 Trials Conducted in Haikou City, February 19–24, 2015

The outcomes of the 16 trials conducted in Haikou City during February 19–24, 2015, are tabulated in Table 1. The table lists the trials in chronological order and the code as was prepared and read. Out of the 16 trials, there were six MoM = 0 (full miss), two MoM = 1, one MoM = 2, one MoM = 3, three MoM = 4, and three MoM = 5 (full hit).

TABLE 1
Outcomes of First Phase of 16 Total Trials Conducted in Haikou City. Codes of Trials That Resulted in Full Hits (MoM = 5) Are in *Bold Italic*

Cumulative trial #	Duration (minutes)	Code as printed	Code as reported	Merit of match (MoM) 0	1	2	3	4	5
1	14	KJG3D	HD3G4	X					
2	18	CSZXN	UT39F	X					
3	15	XDKNS	SW5H3	X					
4	23	SB3QM	S3BQ7			X			
5	29	KLD9R	6RXC	X					
6	20	AG2JM	3TCYM		X				
7	13	***5XKCS***	***5XKCS***						X
8	14	AC2MJ	ACBMJ					X	
9	19	***5CAFO***	***5CAFO***						X
10	19	AJT31	AJT3D					X	
11	18	AC9LJ	ACSLJ					X	
12	21	WB2JY	A3DUQ	X					
13	9	***KJT3S***	***KJT3S***						X
14	13	LB2JM	LJ2BM				X		
15	28	U7XRB	FYKRA		X				
16	26	Z6ESL	ZXE6	X					
			Total	6	2	1	1	3	3

The Outcomes of the 18 Trials Conducted in Wuxi City, May 16–17, 2015

The outcomes of the 18 trials conducted in Wuxi City on May 16 and 17, 2015, are tabulated in Table 2. Table 2 is constructed in the same way as Table 1, except that the trials are numbered in a cumulative way following from the Table 1 numbering (17–34). Out of the total 18 trials, there were eleven MoM = 0 (full miss), two MoM = 1, zero MoM = 2, two MoM = 3, one MoM = 4, and two MoM = 5 (full hit).

TABLE 2
Outcomes of Second Phase of the Total 18 Trials Conducted in Wuxi City. Codes of the Trials Resulting in Full Hits (MoM = 5) Are in *Bold Italic*

Cumulative trial #	Duration (minutes)	Code as printed	Code as reported	Merit of Match (MoM) 0	1	2	3	4	5
17	9	SFHBH	F53VY	X					
18	14	RELA5	JLFYZ	X					
19	15	DAEE8	7BVH8		X				
20	16	K6A3F	FAUTB	X					
21	19	MLWXH	MLHXK				X		
22	5	8BS9M	BOXK9	X					
23	12	QLWGP	QLNGP					X	
24	22	6WHF3	FKMBL	X					
25	16	C6SL4	DUHLA	X					
26	18	A3EDT	HKZ03	X					
27	30	S6DE9	KFHBW	X					
28	18	BYE8L	BYI3L				X		
29	23	L7B77	LWYE6		X				
30	12	5ZLJ2	TDHY8	X					
31	13	***W8J5L***	***W8J5L***						X
32	15	***ZUZXH***	***ZUZXH***						X
33	30	F6R7E	PS3TL	X					
34	15	2SX6L	LYDJF	X					
			Total count	11	2	0	2	1	2

The 34 Trials Combined

Combining Tables 1 and 2 gives a total of 34 trials. Of the 34 trials, there were seventeen MoM = 0 (full miss), four MoM = 1, one MoM = 2, three MoM = 3, four MoM = 4, and five MoM = 5 (full hit). The trials other than full misses and full hits combined to make a total of 12 partial misses, listed in Table 3.

TABLE 3
Outcomes of the Two Phases of 34 Trials When Combined

	Full Miss	Partial Miss	Full Hit
Number of Trials	17	12	5
Duration (Minutes)	18.2 ± 7.3	18.5 ± 4.7	13.8 ± 3.6

The time taken for the 17 trials of full miss was 18.2 ± 7.3 minutes, for the 12 trials of partial misses was 18.5 ± 4.7 minutes, and for the 5 trials of full hits was 13.8 ± 3.6 minutes. $p = .91$ is found between the times of full misses and partial misses. $p = .21$ is found between the times of full misses and full hits. $p = .06$ is found between the times of partial misses and full hits. The differences among the time taken in any of the three categories of outcomes were not significant.

DISCUSSION

The Odds of a Hit

It is informative to assess the odds of one hitting the 5-character code by simple guessing. Each of the 5 characters in a code were generated randomly with replacement, at an equal probability of permutation, from a pool of 34 characters. The odds of one character occurring at one position of the code is 1/34. The odds of the 5 exact characters occurring at the exact 5 positions is therefore $(1/34)^5 = 2.2 \times 10^{-8}$, or one in 45 million. The odds of hitting 5 exact characters five times over a total 34 trials has a binomial probability of $p < .00001$. This astonishingly small probability implies that the subject's hitting 5 exact characters five times over a total of 34 trials is difficult to justify by chance expectation. This would then invite us to speculate which kind of process could have facilitated the subject in acquiring the code information without utilizing information transfer through ordinary sensory routes. That speculation first arose during the demonstration test conducted in Yangzhou City, which was done single-blind and with a much smaller number of trials.

The Demonstration Test in Yangzhou City

The demonstration test in Yanzhou City on August 1, 2014, was conducted with only three test samples. The three test samples were prepared by D. Shen. The preparation of those three samples differed from the preparation of test samples by Ms. Li in Beijing in that the strip of paper cut from the A4-size paper sheet was folded 6 times instead of 9 times, resulting in a total of 7 layers of paper with the code hiding in the middle layer, in comparison with the total of 10 layers of paper with the code hiding in the two middle layers.

The 5-character codes used for the demonstration were, respectively, 37K9J, 8Z3N6, and 37K9J. The subject was instructed to report exactly what she was able to "read." The subject took 35 minutes in trial 1 to make a full hit on the code 37K9J. The subject then took 6 minutes in trial 2 to make a near-hit, reporting 8Z3N9 in comparison to the actual code of 8Z3N6 (MoM = 4), mistaking only the number 9 with 6. The subject then was put to trial 3, taking 5 minutes to make a full hit, again, of the code 37K9J.

It is worth noting that the code in trial 3 of this demonstration test was made intentionally identical to the code of trial 1. Should the subject deduce the code with a process based on nonaffirmative information accessed from the target by whatever means that might be, hitting the exact same code would likely encourage the subject to report something else as she might consider the duplication of code to be unlikely and an artifact. Should the subject have the genuine ability to access the target information, encountering an identical code that was confirmed in a previous trial as a full hit would not discourage her from reporting the same exact code.

Only three trials were completed in this demonstration test. This test with only three trials resulted in a hit rate of 66.7%. We note that the three test samples in this test were not prepared double-blind. That means the examiner knew the code, and it would be difficult to exclude the scenario that the subject could have "read" the test sample by presumably accessing the examiner's conscious awareness of the code, should there be such a "telepathic" information-transfer path.

Such a telepathic faculty for information transfer or access, however, can hardly be justified for the two double-blind tests with a total of 34 trials. Those trials produced a hit rate that was substantially smaller than that of the demonstration test but nonetheless remained inexplicable by chance expectation. We must admit that the history of research in China on ESI against a visual sensory barrier as a special presentation of ESP has had integrity problems due to deceptive practices of subjects (Wu et al., 1998). This experiment, however, implemented the necessary control measures to adequately safeguard the integrity of the examination by setting multiple levels of tractable physical barriers that not only discouraged but also prevented any deceptive fraudulent manipulations of the test sample by the subject.

The Subject's Self-Description of the Process of "Reading"

Some insights into the hit rate, which is inexplicable by chance expectation, may be rendered by the subject's own description of the "reading" process. D. Shen and his assistant conducted a few interviews with the subject, one of which was done immediately after completing the cumulative trial number 32 in Wuxi City that resulted in a full hit of the code ZUZXH. According to her, after she was able to get enough focus on the reading, the characters appeared on the so-called "third eye region," which is in the anterior domain or in the vicinity of the frontal lobe. The characters would appear once, but were unstable, and the arrangement of the characters at the beginning was often wrong. The subject claimed that she needed to wait for some time for the characters to stabilize, before affirming what the characters and their order really were. The instability or the momentary nature of the image-formation could be associated with some of the partial misses that were incredibly close to full hits. For example, in trial #14, the code LB2JM was read as LJ2BM. All five characters were correct, but the sequence was missed. Several other trials ended up with similar levels of partial misses, including trials #8 (target: AC2MJ; reported: ACBMJ), #10 (target: AJT31; reported: AJT3D), #11 (target: AC9LJ: reported: ACSLJ), and #23 (target: QLWGP; reported: QLNGP). In each of these trials, only one character out of the five positions was erroneous.

Is There an Alternative Channel of Information Transfer in the Altered/Alternative State of Consciousness?

The instability of the image formation, as perceived by the subject, may be appreciated with the average time taken to affirm a "reading." The times taken to reach a full miss, a partial miss, and a full hit were statistically insignificant. However, the $p = .06$ between the times taken to make a full hit (13.8 ± 3.6 minutes) and a partial miss (18.5 ± 4.7 minutes) is interesting. If more testing were done to increase the sample sizes, it might have been possible to see a statistically significant difference in the time taken to make full hits vs. partial misses. With $p = .06$, the average time taken to make a full hit was shorter than the average time taken to make a partial miss, indicating that the more certain the "image-formation" was, the less time was taken in hesitating to call a code. With $p = .06$, the standard deviation of the time taken to make a full hit being smaller than that taken to make a partial miss implies that the clearer the "image-formation," the less hesitation there was before calling a code.

We postulate that the subject's psychological and perhaps physical condition could have influenced the outcomes of the trials. In the first three trials in Yangzhou City, the subject felt fresh, excited, and had slept well the previous day. And that preceded her amazing demonstration in the small-sampled single-blind trials. The subject was in considerably less optimal psychological and physical states in the two tests subjected to double-blind readings. Traveling and being in an unfamiliar environment farther away from home could have made the subject's psychological and physical condition deviate from her more accustomed and energetic state. The lesser excitement and the likely increased psychological/physical/stress of the subject over the total of three separate tests at different sites could have affected the hit rate. The demonstration test had an amazingly high rate of 2 full hits out of 3 trials, followed by the test in Haikou producing a much lower rate of 3 full hits in 16 trials, with the last test in Wuxi producing an even lower rate of 2 full hits in 18 trials. As elaborated on previously, the high hit rate in the demonstration trial could have been associated with its single-blindedness, as it was difficult to reject a telepathic information-transfer pathway which would depend upon D. Shen either intentionally or subconsciously transmitting the code or that the subject somehow could have accessed the code stored in D. Shen's consciousness space. Should that single-blindedness alone in the demonstration test not be the reason for the high hit rate in that test, and had the psychological/physical condition of the subject remained indifferent in all tests, the declination of the hit rate over the subsequent phases of trials would be consistent with the "declining" effect (Jahn, 1982) which has been regarded as a hallmark of ESP or psi-like demonstrations.

The subject's self-disclosed experiences were unfamiliar to an ordinary person. Those experiences, however, may imply a connection between an extraordinary consciousness state and an extraordinary perceptive faculty. We postulate that a special process of consciousness might have been voluntarily practiced by the subject in presenting ESI against a visual sensory barrier and other demonstrations inconsistent with common sense (Gimeno & Burgo, 2017). According to D. Shen (Shen, 2010), a "Second Consciousness State" (SCS) that may be akin to an alternative or altered state of consciousness could have been experienced by the subject in demonstrating ESI against a visual sensory barrier, or in any other phenomena inconsistent with common sensory responses. D. Shen suggested, based on earlier interviews with some presumably gifted subjects who also claimed extraordinary demonstrations of ESP faculty, the following: (1) the success of such demonstrations was highly correlated with a consciousness state different from the normal waking state; (2) the consciousness state deviating from the normal awake state was perceived to engage with the appearance of a momentary low-resolution image-formation of the test sample over a "third-eye screen," as it was called by a lay gifted person claiming experiences similar to that of the subject of this study.

We regard ESI against a visual sensory barrier as a manifestation of information acquisition using channels that are not yet known, i.e. via an alternative channel of information transfer. We further postulate that entering an alternative state of consciousness is needed to open consciousness to information that cannot be reached by ordinary sensory means, thus activating an alternative channel of information transfer. Such an alternative channel of information transfer could also imply an alternative channel of energy transfer which would then potentially permit some mind–matter modulations to manifest as psychokinesis.

The subjective experiences similar to those claimed by the subject of this study would be extremely challenging to validate by means of instruments. It may be possible, however, to objectively monitor the state of perception that deviates from the normal awake state. Any state of consciousness must have a neurophysiological manifestation, as it ultimately involves synchronization of neurons over spatial networks and it would maintain certain levels of temporal coherence over the duration of the state. We envision that special states of consciousness that may be associated with ESI against a visual sensory barrier could be amenable to instrument measurement such as by electrical encephalograms, which showed unusual neurophysiological bursts at moments of psi presentation in a presumably gifted subject (Gimeno & Burgo, 2017). Access to readings of neurophysiological states could shed light on what differs in the neuromodulation of sensory and peri-sensory responses between normal consciousness states and altered states of consciousness that are believed to be directly associated with the phenomena of extrasensory faculty.

CONCLUSION

We conducted laboratory investigations with a presumably gifted teenaged female subject in China on identifying information of concealed objects unidentifiable via ordinary visual sensory means. A total of 34 trials were conducted in 2015 at two sites located in two different provinces. The test samples were prepared in accordance with "Zhu's five criteria" to assure double-blindedness. The test sample contained a 5-character code. Each of the five characters of the code was randomly generated by computer permutation among 34 choices including capitalized letters in the English alphabet, from A to Z, and Arabic numbers from 2 to 9. That permutation corresponded to a chance of less than 1 in 45 million of hitting the 5-character code in one trial by simple guessing. The subject's attempt to identify the concealed 5-character codes over the entire duration of each trial was monitored and video-recorded without the possibility of fraudulence or breach. The two trial sets of 16 and 18 tests were conducted in two separate cities, approximately three months apart. Of the total of 34 trials, 5 trials had a full hit, which corresponded to a binomial probability of $p < .00001$.

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