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A STUDY OF SOME ESP TESTING METHODS AND THEIR VALIDITY

MOXIE TEGANZHIGONGNENGDE CESHIFANGFA JI QI ZHENSHIXING DE YANJIU

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ABSTRACT

Based to testing principles determined by the institute, we established testing methods for the ability to see objects through a wall, seeing objects underneath dirt in a flowerpot to simulate seeing underground, and a method of testing mental telepathy abilities. The results of this study were decisive. The paranormal abilities of the subjects to see objects through a wall, inside flowerpots and to perform mental telepathy actually existed.

KEY WORDS: Extrasensory perception (ESP), Seeing objects through a wall, paranormal vision, target object, and mental telepathy.

FORWARD:

Parapsychological phenomena which can not yet be explained through known science primarily include Extrasensory Perception (ESP) and Psychokinesis (PK). ESP refers to persons with paranormal abilities being able to obtain knowledge of objects, events or other people's thoughts without the use of ordinary sensory organs or any ordinary sensory channel[1]. an example of this is Clairvoyance. This includes paranormal vision and paranormal remote vision of remote objects or events. It includes Precognition, which is knowledge of future events and telepathy which is the direct transmission and communications of thoughts.

Up to the present, there are a number of different views in the debate over whether extrasensory perception actually exists[2,3,4]. Those who say it does exist believe it we must see the phenomenon actually exists, but there is not as yet a satisfactory scientific explanation for it. Those who say it does not exist believe that the phenbomenon is strictly imaginary, and that the necessary foundation for parapsychology to exist as a special science is not there.

Since March of 1979 when the "Sichuan Daily" reported the phenomenon of "reading characters with the ears" of Tang Yu, the research into ESP in China can generally be divided into

experimental research into paranormal character recognition[5], paranormal vision[6] and mental telepathy[7]. At the same time, there have been some useful explorations into the physical characteristics of the phenomena of ESP[8,9,10,11].

As a new field of scientific research, ESP research is currently still primarily operating at the research stage of accumulating facts. However, sometimes testing methods are not strict enough and some reports which have not been verified by stringent repeat testing, and at times there is some fakery, and also there are many factors which influence the results of this testing. Under these conditions, it is understandable why people harbor some suspicion about the reality of paranormal abilities. The constructive opinions and criticism they offer concerning the question of existence should be welcomed. We believe that one of the primary reason for the different opinions concerning the phenomenon of paranormal abilities is that there are debates and differences over the research methods themselves.

Therefore, when verifying the reality of ESP, the first thing should be to establish a set of strict ESP testing methods. This is the primary precondition for answering the question of whether or not it objectively exists.

The objective of this study is to study and draw up testing methods appropriate for certain ESP abilities to lay a foundation in methodology for its basic and applied research. At the same time it presents a founded answer to whether certain ESP abilities actual exists.

METHODS AND RESULTS

We conducted 1,567 individual-occasion formal tests of 21 persons who claimed to have certain types of ESP (including 4 males and 17 females, ages were between 10 and 40, and levels of education between elementary school and college). As a control group we used 14 persons (all female, ages between 19 and 43, and educational levels from junior middle school and college) upon which we conducted 1,198 individual-occasion control tests (see Table One).

① 功能类型		②隔墙透视	③透视花盆	④思维传感
⑤功能人	人数⑥	9	6	6
	人次⑦	1044	460	63
⑧对照者	人数⑨	6	4	4
	人次⑩	848	330	20

TABLE ONE: TESTING OF SUBJECTS AND CONTROLS

1. Type of ESP. 2. Seeing through walls. 3. Seeing inside flower pot. 4. Mental telepathy. 5. ESP subjects. 6. Number of people. 7. Number of tests. 8. Controls. 9. Number of people. 10. Number of tests.

When establishing testing methods for ESP abilities, we decided on the following principles:

1. Random and precise selection of target objects and timely and accurate recording of the ESP results to avoid any lack of certainty about the description of the target object.

2. Pay attention to the double blind of the preparing of the samples and repeatability of the test results.

3. Establish a principle of combining control groups and blank experiments.

4. Conduct the experiments when the ESP subjects feel their abilities are in an optimum state.

Based on the above principles, the methods and results of the experiments on ESP abilities are described separately below.

I. EXPERIMENTS ON SEEING AN OBJECT THROUGH A WALL

1. The Methods Used in the Experiments on Seeing an Object Through a Wall.

The subjects and the target objects were separated with a solid brick wall (see Illustration One).

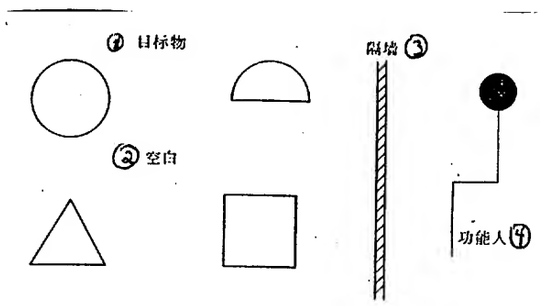

ILLUSTRATION ONE: DIAGRAM OF EXPERIMENTS ON SEEING THROUGH A WALL

1. Target Object. 2. Blank. 3. Partitioning wall. 4. Subject.

In order to ensure the objects are clearly identified, we used an equilateral triangle 18 centimeters on a side, a square, half a circle with a radius of 18 centimeters and a full circle. The ESP subjects felt that red target objects were easier to sense, so in the experiments it was decided to use red wooden target objects.

In the experiments, these four target objects and a blank experiment where was no object occurred at random. The random sequence was provided by a computer.

Here, we would like to briefly describe the specific conditions at the location of the experiments.

On one occasion, the experiment was conducted in two adjoining rooms separated by a brick wall at the Anshan Hotel in Anshan (see Illustration Two). It takes effort for a person with ESP to see through a wall when the person is in a fairly dark room, so the window in one of the rooms was covered with a carpet, and during the experiment, the ESP subjects sat in this (B) room attempting to see the objects displayed by the person running the experiment (a) in room (A). The person running the experiment (b) sat in room (B) inside the door, and after the ESP subject had (seen) and recorded the target object, he gave the person running the experiment (a) the signal to change the target object.

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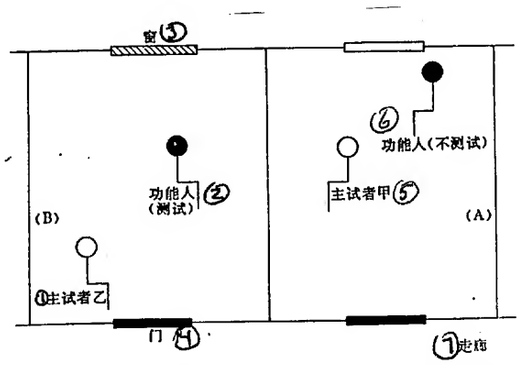

ILLUSTRATION TWO: DIAGRAM OF FIRST SEE THROUGH WALL EXPERIMENT WITH SUBJECT ZHAO

1. Person running the experiment (b). 2. ESP subject (being tested). 3. Window. 4. door. 5. Person running the experiment (a). 6. ESP subject (not being tested). 7. Corridor.

During the progress of the experiment, the doors and windows of rooms (A) and (B) were always kept closed. No one could enter or leave either of the rooms. Because of the limited conditions at the time, the other ESP subject who had not yet been tested also sat in room (A).

The subjects were Zhao Ying and Zhao Li.

Two years later, we repeated the seeing through the wall experiment with Zhao Ying. The type of target objects and method of display were the same as in the first experiment.

The testing location was room 821 in the Scientific Research Building of the Institute of Aerospace Medicine Engineering (see Illustration Three). The ESP subject Zhao YIng sat in a soundproof room and attempted to see target objects displayed on the other side of the wall by experimenter (a). Experimenter c sat outside the door to the soundproof room, and when the ESP subject had finished attempting to visualize the target object and had noted it down, he would inform experimenter b of this who would then rap on the door to notify experimenter c who would then rap on the door of the main room to inform experimenter A that he could change target objects.

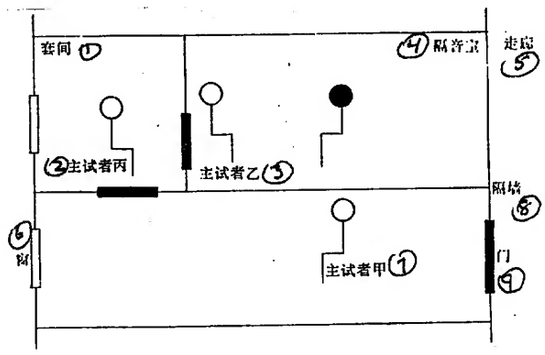

ILLUSTRATION THREE: SECOND SEE THROUGH THE WALL EXPERIMENT WITH ZHAO

1. Room. 2. Experimenter C. 3. Experimenter B. 4. Soundproof room. 5. Corridor. 6. Window. 7. Experimenter A. 8. Partitioning wall. 9. Door.

During the experiment, the doors between the rooms were all kept closed, and no one was allowed in or out of the rooms.

The vast majority of the seeing through a wall experiments were conducted under these conditions.

2. Results of Seeing Through a Wall Experiments.

We see from the results in Table Two that rate of correct responses by the ESP subjects ranged from 15.0 to 79.4 percent. The accuracy rate of the vast majority of ESP subjects was very near the individual natural probabilities. The accuracy rates in seeing target objects through a wall for subjects Zhao Ying, Zhao Li and Wang Haiyen were 79.4, 51.0 and 41.7 percent respectively. The accuracy rates for the controls were below or near the individual natural probabilities.

SUBJECT	NUMBER	GROUPS (N)	ACCURACY (PERCENT)	NATURAL PROBABILITY (PERCENT)
Wang X X	320	14	27.4	25.0
Zhang X X	204	11	31.1	25.0
Wang X X	60	3	41.7	25.0
Lin X X	40	2	30.0	25.0
Liu X X	60	3	23.3	20.0
Xue X X	80	4	27.5	25.0
Wang X	20	1	15.0	20.0
Zhao X	160	8	79.4	20.0
Zhao X	100	5	51.0	20.0
CONTROLS				
Xie X X	100	5	22.0	25.0
Yu X X	80	4	23.7	20.0
Yue X X	110	5	18.7	25.0
Yang X X	110	5	25.7	25.0
Wu X X	300	14	25.3	25.0
Jiang X X	124	6	19.2	25.0

TABLE TWO: RESULTS OF SEEING THROUGH A WALL EXPERIMENTS

We derived the mean value of the difference between the accuracy rate and natural probability rate each person of the control group and of each ESP subject and performed statistical analysis. We can see from the results (Table Three) how Wang Haiyan, Zhao Ying and Zhao Li fared compared to the control group. in this table, ** is $p<0.01$, and *** is $p<0.001$. n is the number of times the group of objects was tested.

SUBJECT	n	$X \pm S$
Wang X X	14	2.5 ± 10
Zhang X X	11	6.1 ± 9.1
Wang X X	3	16.7 ± 7.6**
Lin X	3	5.0 ± 0
Liu X X	2	3.3 ± 7.6
Xue X X	4	2.5 ± 2.8
Zhao X	8	59.3 ± 25.9
Zhao X	5	31.0 ± 32.8

TABLE THREE: SEEING THROUGH WALL TESTING RESULTS OF ESP SUBJECTS AND CONTROL SUBJECTS

With accuracy rate - mean natural probability ± standard deviation, ESP subject only tested one group of objects, so this subject was not included in the statistics.

The results of the seeing target objects through a wall experiment, indicate a marked or extremely obvious difference between their scores and that of the control group, indicating they possess, to a certain degree, the ability to see through walls.

It is worth pointing out that when repeat seeing through the wall experiments were conducted, ESP subject Zhao Ying had an accuracy rate of 82.5 percent, greatly exceeding the 20 percent natural probability, and compared to the controls, this is of obvious statistical significance.

In the morning of 23 July, 1990, Zhao Ying completed 60 target objects in seeing through the wall experiments with an accuracy rate of 100 percent (see Illustration Four). These results must have been real penetrating vision, because such a degree of accuracy could not have been achieved from purely guessing.

SUBJECT	DATE	TESTS	RIGHT	WRONG	%RIGHT	NATURAL PROBABILITY
Zhao X	1988.1	80	61	19	76.3**	20
Zhao X	1990.7	80	66	14	82.5**	20
Control	1990.7	80	19	61	23.7	20

TABLE FOUR: ZHAO'S RESULTS IN SEEING THROUGH WALL EXPERIMENT
Compared to controls, **P<0.01.

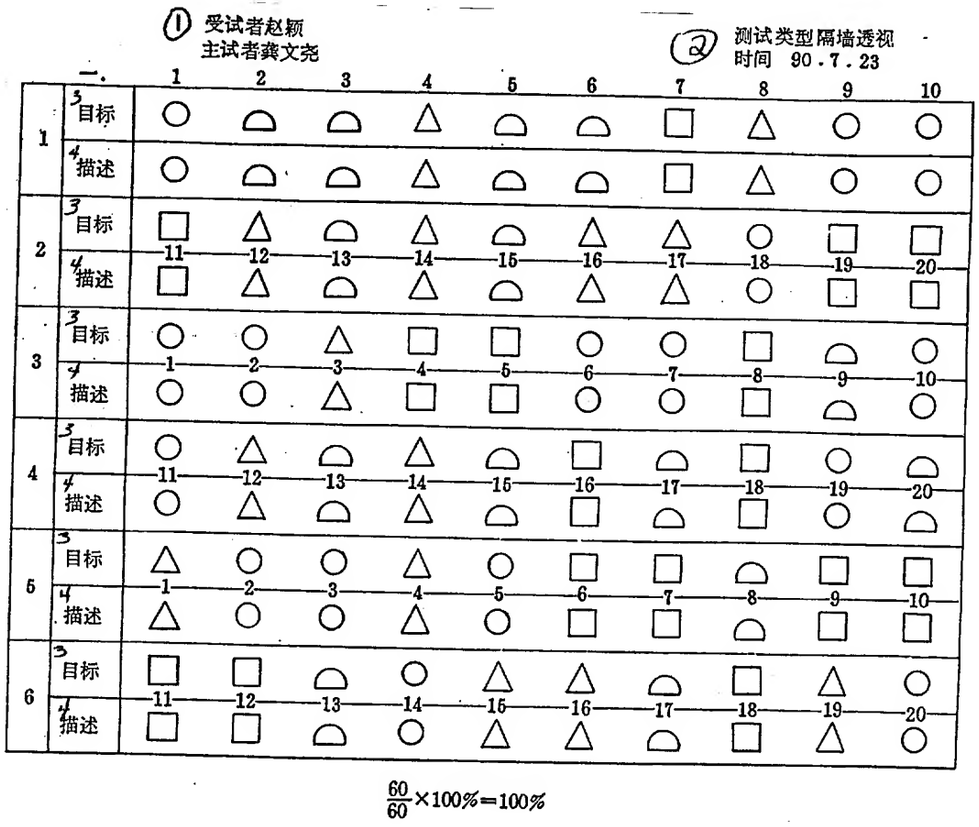

ILLUSTRATION FOUR: RESULTS OF EXPERIMENT WITH ZHAO YING (7/23/90)

1. Subject is Wang Ying, experimenter Gong Wenrao. 2. Seeing through wall experiment, 7/23/90. 3. Object. 4. Description.

II: EXPERIMENT ON SEEING OBJECTS INSIDE A FLOWER POT

1. Methods Used in Experiment on Seeing Objects Inside a Flower Pot.

To make things easier, we chose to use seeing objects in a flowerpot filled with dry dirt as experimental conditions simulating seeing objects underground. We selected ten flowerpots about the same shape, size and color (see Illustration Five). We filled the pots with dry dirt. In order to eliminate signs remaining after turning up the dirt to bury the objects and thus influencing the results of the experiment, we also covered each flower pot with a piece of paper.

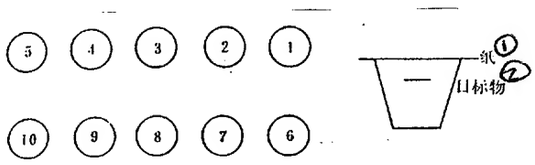

ILLUSTRATION FIVE: SEEING OBJECT THROUGH FLOWER POTS

1. Paper. 2. Target Object.

The object was a piece of steel plate or aluminum plate 20 times as large as the five cent piece the ESP subjects believed they could discern in a flowerpot. It was buried in one of the ten pots according to a random sequence provided by a computer. The dirt in which it was buried was 10 centimeters deep. Thus, the natural probability for this experiment was ten percent.

2. Results of the Experiment of Seeing Into a Flower Pot.

SUBJECT	n	X±S
Zhang X X	16	6.3±7.6
Wang X X	2	3.3±0
Ning X X	2	7.5±3.5
Wang X X	10	11.0±8.7**
Controls	15	1.0±4.8

TABLE FIVE: RESULTS OF ESP SEEING INTO FLOWER POT
Compared to control group, ** $P<0.01$, n and X±S same as in Table Three.
Wang X, Xue XX were only tested once, and not entered into the statistics.

We conducted 460 tests of attempting to see into a flower pot using six ESP subjects and 330 tests with four controls. The results (see Table Five) indicate that the ESP subject Wang Tingting had results which were clearly more statistically significant that those of the control group. This indicates that she possesses to a certain degree the ability to see into the flowerpots.

III. EXPERIMENTS ON MENTAL TELEPATHY

Mental telepathy is the transfer of information between the sender and the receiver.

1. Methods Used in Mental Telepathy Experiments.

In these experiments, it is necessary to first of all remove any possibility of using a telephone, walkie talkie or modern radio communications equipment to transmit information.

In order to ensure the mental telepathy experiments proceeded smoothly, six ESP subjects were paired off in a fixed manner (see Table Six).

INFORMATION SENDER	INFORMATION RECEIVER
Ji X X	Xiao X X
Wu X X	Pang X
Yin X X	Zhang X

TABLE SIX: PAIRING OF ESP SUBJECTS

The location of the senders was room 313 of the Fudan University Physics Building (see Illustration Six). There were no devices or pieces of equipment in this room. There was only a conference table with nothing at all on the table.

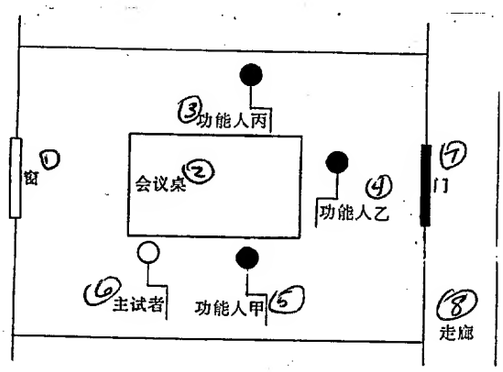

ILLUSTRATION SIX: DIAGRAM OF SENDERS LOCATION

1. Window. 2. Conference table. 3. ESP subject C. 4. ESP subject B. 5. ESP subject A. 6. Person running experiment. 7. Door. 8. Corridor.

Prior to each experiment, the ESP subjects and the experimenters would gather in room 313 and decide on the time when the formal experiment would began. Then the receivers and their experimenter would leave room 313, the door would be locked, and until the experiment had been concluded no one was allowed in or out of the room.

The receiving location was a location somewhere on Fudan University chosen at random by the on site experimenter or at some fixed location.

The distances between the senders and the receivers were from 100 to 300 yards.

The time when the formal experiments began was usually 15 minutes after the receivers had left room 313. Two to three minutes before the experiment began, the experiment sample for each sender was determined by random drawing of lots. The senders were only allowed to look at the test samples, and were not allowed to recite it silently or read it aloud in order to prevent possible transmission of the information by sound.

During the experiment, when the senders believed that they had finished sending the contents of the test sample, they would immediately write down the contents of the sample they had sent, write down the time, sign their names, and hand it over to the experimenter for safekeeping. Similarly, when the receivers believed they had received the contents sent, they were to immediately write it down, writing down clearly what they had received, the time and sign the paper and hand it over to the on-site experimenter for safekeeping.

The experimenters at the two different locations would compare the contents of the two. Some of the test results were checked with the persons who prepared the original test samples before determining whether the results were accurate.

The contents of the test samples included characters, numbers and shapes. Considering the present ability level of the subjects and their educational level, when the character test samples were prepared, characters with fewer strokes and which are easily recognized were chosen in order to avoid the possibility of logically figuring out gaps in the sentences, and making it difficult to grade the results, we normally selected two phrases with no relationship to each other (see Illustration Seven). The number test samples were four to six digit numbers or numbers with a comma (see Illustration Eight). The test samples using shapes were simple structures which were difficult to put a name to (see Illustration Nine in Insert Two).

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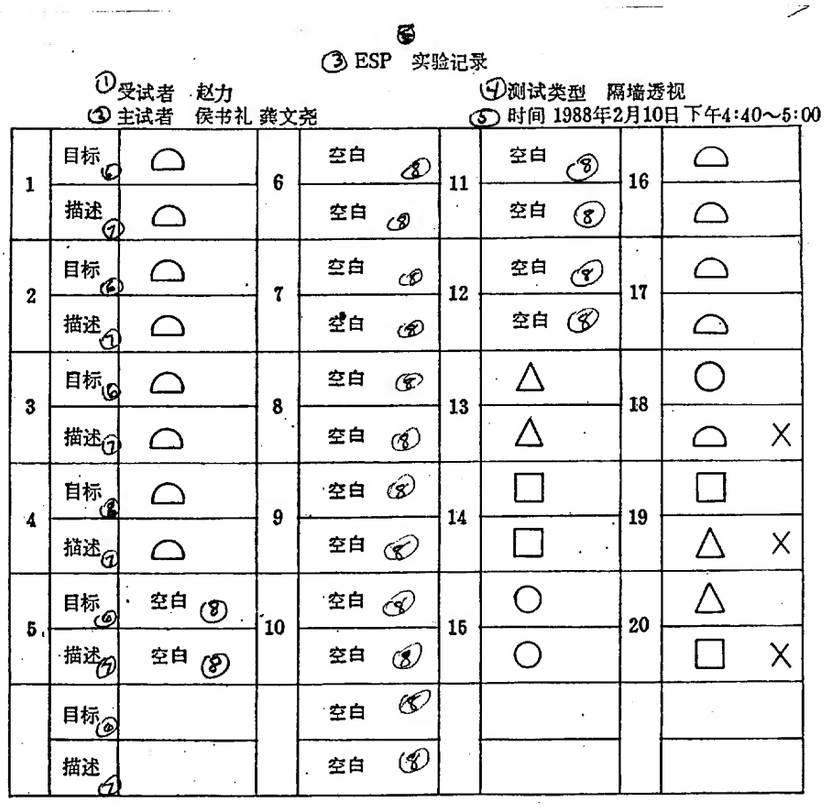


③ ESP 实验记录

①受试者 赵力 ④测试类型 隔墙透视

②主试者 侯书礼 龚文尧 ⑤时间 1988年2月10日下午4:40～5:00

1	目标⑥	∩	6	空白⑧	11	空白⑧	16	∩			
	描述⑦	∩		空白⑧		空白⑧		∩			
2	目标⑥	∩	7	空白⑧	12	空白⑧	17	∩			
	描述⑦	∩		空白⑧		空白⑧		∩			
3	目标⑥	∩	8	空白⑧	13	△	18	○			
	描述⑦	∩		空白⑧		△		∩	X		
4	目标⑥	∩	9	空白⑧	14	□	19	□			
	描述⑦	∩		空白⑧		□		△	X		
5	目标⑥	空白⑧	10	空白⑧	15	○	20	△			
	描述⑦	空白⑧		空白⑧		○		□	X		
	目标⑥			空白⑧							
	描述⑦			空白⑧							

ILLUSTRATION NINETEEN: ZHAO LI'S RESULTS IN SEEING OBJECTS THROUGH A WALL

1. Subject: Zhao Li. 2. Experimenters: Hou Shuli and Gong Wenrao. 3. Record of ESP experiment. 4. Type of test: Seeing through a wall. 5. Date and time: 10 February, 1988, 4:40 to 5:00 PM. 6. Target object. 7. Description. 8. Blank.

生日记住了,次品	
上天安门,五0七	816702
压力,十二号台风	754,31
中冲,百会,足三里	59,420
北工大,运动会开,	173362
大米,自吹牛皮	904136
安全头发光	286,05
去北京,下杭州	68,47
司令员,什么办法	257193

ILLUSTRATION SEVEN: CHARACTERS NUMBERS USED IN MENTAL TELEPATHY TEST

ILLUSTRATION EIGHT: USED IN MENTAL TELEPATHY TEST

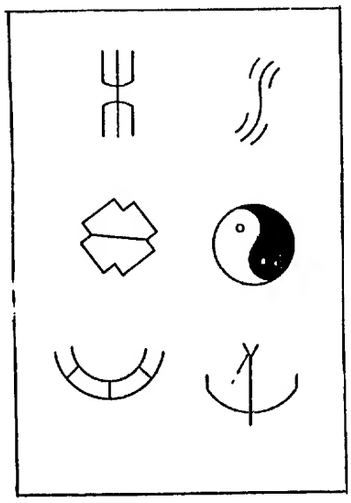


ILLUSTRATION NINE: SAMPLE SYMBOLS USED IN EXPERIMENTS

The vast majority of the samples were prepared beforehand at the Institute of Aerospace Medicine Engineering (in Beijing). Then they were randomly placed into brown paper envelopes and given numbers for random drawing for the experiments. Only a small number of the samples were prepared at Fudan University prior to the experiment and sealed in envelopes.

Under the exact same conditions using the same batch of samples, we selected four controls who approximated the ESP

subjects in age and educational levels and conducted 20 control experiments in mental telepathy.

We conducted two separate mental telepathy experiments (totalling 63 tests) using Ji Meiyun and five other ESP subjects six months apart.The results of these experiments were:

CORRECT: Results received were exactly the same as the contents sent.

PARTIALLY CORRECT: Results received not exactly the same as what sent, but some or most were the same.

INCORRECT: Wrong or not received.

Looking at these results (see Table Seven), the percentage correct in these two experiments were 26.1 and 15.0 respectively, partially correct 17.4 and 27.5 percent of the time. The 20 control tests were correct zero percent of the time.

①	②测试次数	③正确 ④次数	(%)	⑤部分正确 ⑥次数	(%)	⑦错误或未收到 ⑧次数	(%)
⑨季××等	23	6	26.1	4	17.4	13	56.5
⑨季××等	40	6	15.0	11	27.5	23	57.5
⑩对照者	20	0	0	0	0	20	100

TABLE SEVEN: RESULTS OF MENTAL TELEPATHY TESTING OF JI AND OTHERS

1. Subjects. 2. Number of tests. 3. Correct. 4. Number correct. 5. Partially correct. 6. Number partially correct. 7. Wrong or not received. 8. Number. 9. Ji X X and others. 10. Controls.

DISCUSSION:

To date, the focus of debates in the research concerning ESP phenomena has been over whether or not to accept it as real. This is a theoretical question, but is also a practical question.

Science is something that should be able to be tested. We feel that ESP must not lack either reality or repeatability. If the experimental conditions are basically the same, certain fairly stable cause and effect relationships should not be related to subjective hopes, and the results of the experiments would be repeatable. We believe that the unique quality of ESP, ignoring or lacking repeatable experimental results, is not scientific. Therefore we stress repeatability, requiring that tested results of

ESP be repeatable just as those in physics and chemistry experiments. It is also not acceptable to adopt a negative attitude because of the low repeatability without considering the human factors and the present lack of stability of ESP.

The results of our seeing objects through a wall and the results of out mental telepathy experiments, we feel, that while acknowledging the existence of its reality, wee should also look at their instability. The manifestation of the ESP subjects' abilities are affected by the body itself and environmental factors. When the ESP subject is happy, full of energy, and the surroundings are quiet, and he has become accustomed to a certain testing environment, this can cause the abilities to be fairly well manifested. Otherwise, the success rate of the tests was low.

In the morning of 23 July, 1990, Zhao Ying completed 60 tests in an experiment of seeing objects through a wall. Her success rate was 100 percent (see illustration four). At that time, the ESP subject stated that she had pain around her eyes and asked to rest. After resting at noon, the ESP subject still felt uncomfortable around the eyes, and when she did one more test group (20 objects) she was only right on six of them, for a success rate of 30 percent. This illustrates that people who really have ESP use up energy when they sense objects, and we may say that there are conditions on whether or not a test is successful.

For example, as stated in the experimental methods (Illustration Two), when conducting the seeing objects through a wall, the other ESP subject who was not yet engaged in the experiment because of the limitations of conditions was seated in the room where the objects were displayed and could directly view the objects. Thus, in the results of the experiment on seeing objects through a wall the possibility cannot be eliminated that mental telepathy between the two ESP subjects played a role. Furthermore, they were sisters. However, only Zhao Ying took part in the seeing objects through a wall experiment conducted on 23 July, 1990, and her accuracy rate was 82.5 percent (see Table Four). This eliminated the possibility of any effect of mental telepathy as in the first experiment in January 1988.

It is worth pointing out that Illustration Seventeen shows mental telepathy test samples which are combinations of illustrations and characters. The face with three hairs is not complete, only having a frowning mouth and three hairs. What is interesting is that when the receiver, Pang Fei, handed in what she had written down, she said that what she seen was a head with three hairs. The face was not clear, but she had filled in eyes and a nose anyway. May we believe that the receiver felt that since the face was not clear because ordinarily a face should have eyes and a nose, and there were none on the test sample, so the receiver

filled them because it made sense. Could the frowning mouth be due to the fact that the person sending the information and the person receiving the information did not pay attention to detailed areas?

SEE PAGE 14

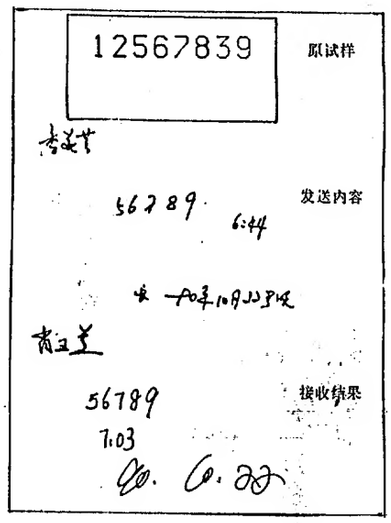
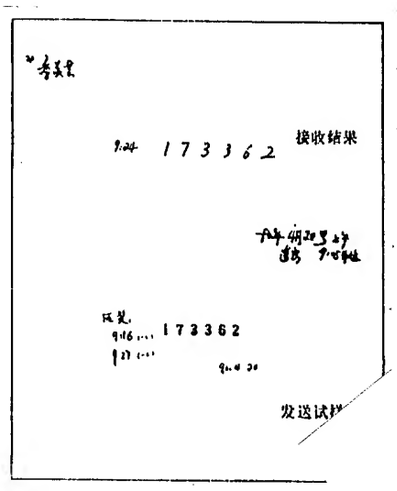


ILLUSTRATION NINE
SYMBOLS USED IN TEST SAMPLES

ILLUSTRATION TEN
TEST SAMPLES SENT AND RECEIVED



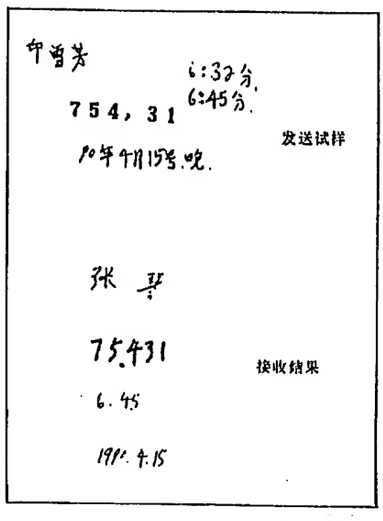


ILLUSTRATION ELEVEN
TEST SAMPLES SENT AND RECEIVED

ILLUSTRATION TWELVE
TEST SAMPLES SENT AND RECEIVED

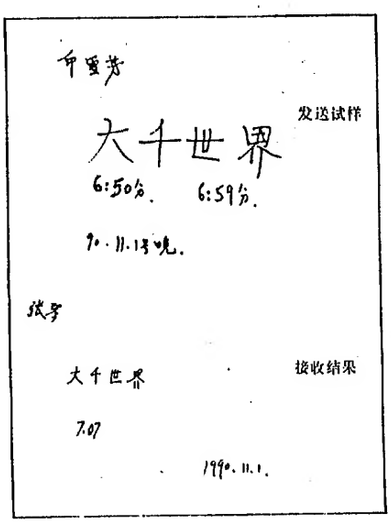


ILLUSTRATION THIRTEEN
TEST SAMPLES SENT AND RECEIVED

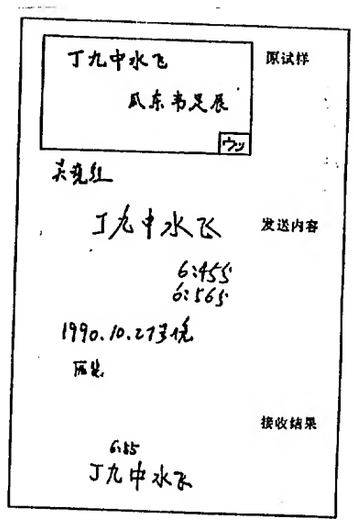


ILLUSTRATION FOURTEEN
TEST SAMPLES SENT AND RECEIVED

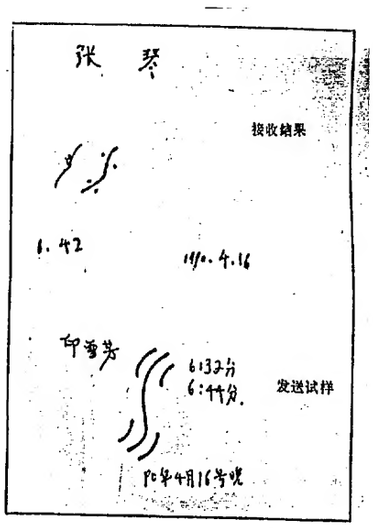


ILLUSTRATION FIFTEEN
TEST SAMPLES SENT AND RECEIVED

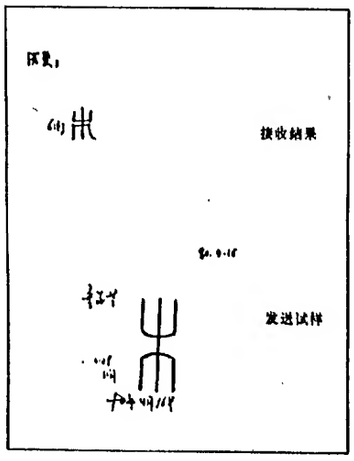


ILLUSTRATION SIXTEEN
TEST SAMPLES SENT AND RECEIVED

SEE PAGE 18

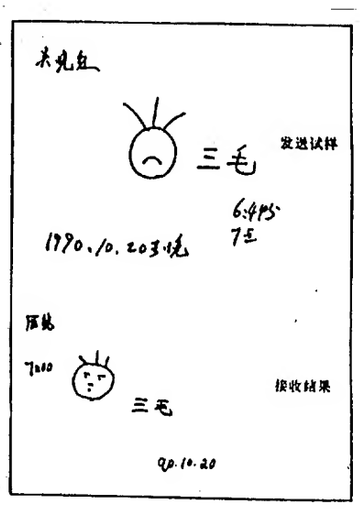


ILLUSTRATION SIXTEEN
TEST SAMPLES SENT AND RECEIVED

ILLUSTRATION SEVENTEEN
TEST SAMPLES SENT AND RECEIVED

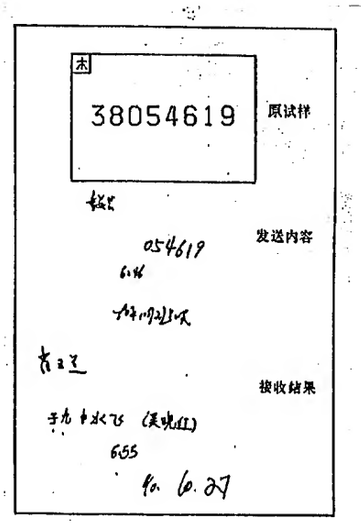


ILLUSTRATION EIGHTEEN
TEST SAMPLES SENT AND RECEIVED

What was sent and what was received in the mental telepathy test shown in Illustration Eighteen do not seem to match up at all. However the receiver, Xiao Xue, said that she was not able to receive anything from Ji Meiyun, so she thought she would try to receive what Wu Shaohong was sending. She also noted on her card that she received what Wu Shaohong was sending. What she received and what was sent is shown in Illustration Fourteen. The only difference is that the receiver missed a single stroke in the first character. It seems that in the receiving process, the receiver need only change her mind, just like changing frequencies on a radio, and she can receiver the information sent by a different sender. This is a very interesting fact.

From an analysis of the results we can see that in the mental telepathy experiments within a range of 100 to 300 meters it took from six to 22 minutes from the time the information is first sent until it is first received. This indicates that there is a "time differential" delay in the information transmission process between the sender and the receiver. This "time delay" in mental telepathy will not fit into radio theory. This is something worth looking into.

In the studies to verify ESP abilities, we felt that the establishment of the blank where no object was displayed could serve to further evaluate the truth about such abilities.

In the seeing objects through a wall experiment with Zhao Li using one group of 20 objects where she answered correctly to the first 17 objects (see Illustration Nineteen), objects five through twelve were eight blanks in a row where no object was displayed. The ESP subject also correctly described eight blanks in a row. Furthermore, here answers prior to and following the blanks were also correct. We believe that this cannot be ascribed purely to chance guessing. This demonstrates the existence of these abilities from another aspect.

The mechanism of ESP is not yet clear. However, in mental telepathy experiments between a submarine and the shore[12], and mental telepathy experiments with both sender and receiver inside a metal screened room or a steel reinforced concrete underground structure[11], in neither case was there any clear sign of insulation. This makes it impossible to explain that in mental telepathy the information is carried over radio waves.

In the training process to induce mental teleplathy, the person being trained says that the object flashes in front of the forehead. Some reports[11] are of the opinion that in the process of mental telepathy, sending and receiving of information can only be accomplished when the "screen phenomenon" occurs at the forehead

of the sender and the receiver. Furthermore, they believe that success in mental telepathy experiments is related to the degree of clarity of the "screen" when both sides have entered a state of quiet. When the ESP subject states that the "screen" is weak and fuzzy or has not appeared, the success rate of mental telepathy experiments are low. However, when both sender and receiver are full of energy, happy, and the surroundings are quiet, when the "screen" appears clearly, the success rate is high. However, there has been no scientific basis demonstrated for the "screen" which ESP subjects talk about. This will have to be further explored in the future.

Finally we should point out that in order to eliminate the possibility of successful results being caused by any sort of fakery in seeing through the wall experiments and mental telepathy experiments, we visited Comrade Nan Zongpei of the China Acrobatic and Magic Show and had talks with famous magician Comrade Tai Mingxiao of that show. We described to them the methods, control over conditions and test results of our experiments and asked them if there were any possibility of trickery. They replied that there were three necessary conditions for magic tricks. These are that the tools of the trade be designed or manufactured by the magician himself; that the hand must be in direct contact with the tools of the trade; and that there must be some smoke screen type actions to divert the attention of the audience or help from an assistant. Finally, Comrade Tai Mingxiao said that from the experimental conditions you have described, from the test samples I have seen and from the results obtained, it would be impossible for a magician to perform the see through the wall experiment and the mental telepathy experiment with success.

CONCLUSIONS

1. In our testing of 21 people who claimed to have certain forms of ESP, we performed 1,567 individual tests of different types of ESP. On the control group we performed 1,198 separate tests.

2. Based on the principles of the experiments and the results of our study, we established experimental methods for a seeing objects through a wall, for mental telepathy and for seeing objects inside a flower pot.

3. Evidence from the results of this study determines that Zhao Ying, Zhao Li and Wang Haiyan possess the ability to see objects through walls. Their accuracy rates were 79.90, 51.0 and 41.7 percent respectively. Ji Meiyun, Pang Fei, Wu Xiaohong, Yin Xuefang, Zhang Qin and Xiao Xuelan possess mental telepathy abilities. Wang Tingting possess the ability to see objects inside

a flower pot.

NOTE OF APPRECIATION:

In our work, we were greatly supported by Comrades Shao Laisheng, Fang Linhu and Wu Huihua of Fudan University and Comrade Liu Panong of the 35th Middle School of Anshan Municipality. We would like to express out appreciation to these comrades and to the ESP subjects for their cooperation.

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AN EXPLORATION INTO THE USE OF ESP TO SEARCH FOR MINERALS

TEYI GONGNENG ZHAOKUANG CHUTAN

BY: Pan Shizhong (China Academy of Geology, Institute of Geology)

From early 1987 to the end of 1989, for three years I worked with 19 people with ESP abilities conducting 17 experiments of strict design. We also conducted a great deal of ad hoc experiments. The results of the experiments indicate that it is feasible to use ESP in geological prospecting. In the process of the experiments we surveyed 36 ESP prospecting personnel. With the exceptionof five who were not interested or whose methods did not work well with us and showed no results, about 82.6 percnet of the people showed results. Of these, five people were sent to the Academy of Geology to study. The specific forms of the experiments and the resutls are provided below.

I. INSIDE REMOTE SENSING EXPERIMENT

Inside remote sensing is prospecting inside on a map. The principle is to make full use of the romote sensing and remote vision of people with ESP. Then, just like scanning, capture information of different ratios of certain ores and reflect that information on diffrent types of maps.

This group of experiments used 19 people who emote sensed nine nine mines on different types of maps of different scales. ?These included four coal mines, two lead and zink mines, one diamond mine, three geothermal locations and two oil fields. Except for one geothermal locations and one oil field which have not yet been verified, all the othr have been verified, with an accuracy rate of around 75 percent.

II. ON-SITE LIVE SENSING EXPERIMENTS

The principle of on-site live sensing is to make full use of the penetrating vision and sensing abilities of people with ESP to determine the orientation oof the ore zone in mining areas, the richness of the ore, and the grade of ore. Secondarily, it is to allow them to "assay" ore samples collected from the mining area for information on its richnes and grade.
Fifteen people took part in this group of experiments, going to one led and zink mine, five gold mines, one oil field, two coal mines, one diamond mine and one geothermal location. 1, They were fairly accurate in differentiating the richness of the ore samples. 2, When inspecting the mine sites, they could point out the direction of ore reserves. 3, By seeing into the ground, they coulid inspect

tunnels and describe conditions in the mine. The resutls of the above experiments all conformed actual conditions in the mining areas.

Through the preliminary experiments above we have demonstrated that ESP geological prospecting is feasible. At the same time, they can also be widely used in other geological operatoins such as geological structures, engineering geology, karst geology, hydrological geology and prediction and woarning of geological disasters. Experimental research must be developed into many areas.

QI AND ITS INTERACTION WITH MATERIAL SYSTEMS

BY: Miao Tiajun, Quan Wenfu and Xuan Mingkui
(Jilin University Physics Department, Institute of Applied Research)

ABSTRACT

Based on the quantum theory of David Bohm, this article proposes a model for Qi-Matter interaction. Herein, Qi state is described as a wave function. The Qi influence on mater is exerted through a quantum potential. From the model we directly obtained two important characteristics of Qi, holography and wholeness. This article studies the effects of Qi on microscopic and macroscopic systems, deriving quantum potential as the dynamics formula of the outside force, theoretically providing an estimation of the relaxation time, changes in the rate of chemical reactions, changes in microscopic structures and the results of the oscillation effect. It uses this to explain a number of Qigong and Pi experiments. As evidence, this article describes the results of experiments we conducted recently.

KEYWORDS: Qi and its interactions, quantum potential, psychokinesis.

As research into somatic sciences probes deeper, people have accumulated large amounts of experimental results. Qigong and ESP phenomena have been widely explored. These phenomena are called consciousness related PK questions and ESP questions in the West[1]. In China they are believed to be questions related to Qi. In ancient books it is possible to find important knowledge of the ancients on Qi and its interaction.[2].

This article attempts to begin with the concept of Qi to construct a theoretical model to explain the changes to matter caused by the effects of Qi and ESP. It uses modern science to disclose the basic nature of Qi. This article is divided into five sections. The first section is model hypothesis, believing that Qi can described as a material wave field. Through quantum potential it has an informational role on matter. The second section provides two deductions concerning the nature of Qi and explains some phenomena. The third section is on specific research on the effects on the Hamilton structure and equilibrium systems. The fourth section explores a type of oscillation effect. The fifth section is the discussion.

I. THE MODEL FOR THE INTERACTION BETWEEN QI AND MATTER

The Schrodinger equation is one of the most basic equations in modern physics. It is believed in quantum mechanics that any material state can be described using wave function. Wave functions satisfy the Schrodinger equation. There are a number of explanations on the meaning of wave functions. This article accepts the Bohm explanation and hypothesizes that Qi can be described as a wave function. It also establishes it as $\Psi(r,t)$, considering the complex effects between Qi and Qi, thus satisfying the accumulation principle of wave functions. However, we still hypothesize $\Psi(\vec{r},t)$ as following the Schrodinger formula, and according to the de Broglie-Boghm explanation[3], $\Psi(\vec{r},t)$ can correspondingly independently have a "guiding" effect on particles.

In the internal and external environment of the human body, using the structural state of the human body biological field[4] described by the Qi structure $\Psi(\vec{r},t)$, through the measurement of the biological field of the human body we can gain knowledge of $\Psi(\vec{r},t)$. At the same time, we do not need to solve the Schrodinger equation. We have two methods of structural wave function $\Psi(\vec{r},t)$. One is the synergetics method[5] obtained from comparing $\Psi(\vec{r},t)$ with laser fields or ordered parameters[6]. The other is approximation methods. Based on the holography to be discussed below, the $\Psi(\vec{r},t)$ is approximated to the body's internal atoms and vibrators to obtain $\Psi(\vec{r},t)$. This article will use the later method to construct the Q field $\Psi(\vec{r},t)$.

In order to study the effect of $\Psi(\vec{r},t)$ on matter, we set a particle with the mass of M in a classic field V(r) and the Qi field $\Psi(\vec{r},t)$. This is about the same as quantum mechanics saying that particle M has a wave $\Psi(\vec{r},t)$. Therefore

$$\Psi(\vec{r},t) = Re^{i\phi} \tag{1}$$

inserting into the Schrodinger equation

$$ih\frac{\partial\Psi}{\partial t} = H\Psi = \left(-\frac{h^2}{2M}\nabla^2 + V(\vec{r})\right)\Psi \tag{2}$$

we obtain the Hamilton=Jacobi equation

$$\frac{\partial S}{\partial t} + \frac{(\vec{\nabla}S)^2}{2M} + V + Q = 0 \tag{3}$$

In which

$$Q = -\frac{h^2}{2M}\frac{\nabla^2 R}{R} \tag{4}$$

and

$$\frac{\partial P}{\partial t} + \vec{\nabla} \cdot \frac{(P\vec{\nabla}S)}{M} = 0, (P = R^2) \quad (5)$$

In (3), the excess Q, because it is the result of the $\Psi(\vec{r},t)$ effect, is the effect potential on M which we were searching for. We call it the Quantum Potential[8]. The $\Psi(\vec{r},t)$ of different Qi has different Q (from (1) and (4), so it produces different effects on matter.

Prior to a detailed study of the effect of Qi on material systems, we used the above described model to investigate the characteristics of Qi itself.

II. THE CHARACTERISTICS OF QI

1. Holography

From equation (2), we can get

$$\frac{\partial \Psi}{\partial t}/\Psi = -iH/h \quad (6)$$

By integrating both sides, we obtain a form of solution expressed as a Green factor:

Using ($Gt\text{-}5_o$), the wave factor is expressed as the integral of the entire space omega.

$$G(t - t_0) = C^{-iH(t-t_0)/h} \quad (7)$$

This equation indicates that at time t at any point r in space, the character of the Qi field $\Psi(r,t)$ is determined by the overall characteristics of the entire space field $\Psi(r',t_0)$ at time t_o. In other words, the image of point r is projected by all the points of the omega field. These points of information include the entire information of omega[7]. Therefore, a holographic relationship exists for $\Psi(r,t)$ between the part and the whole and between one part and another part.

The characteristic described above has already been used to diagnose and treat disorders with Qigong and ESP. This indicates that the we should take the biological field (or Qi field) as a portion of the biological entity, and the laws of holography can be appropriately expanded. The holography of Qi is also manifest in phenomena of ESP experiments.

2. Wholeness

From equation (4), Q does not diminish as the distance |r| increases. Also, when the wave strength increases K times, and R->KR, Q does not change (in (4) the K is subtracted from both the numerator and the denominator). This indicates that the effect of Qi is overall. It is similar to radar guidance[11], that is the Qi collects information on the system and surrounding environment, and after processing this, serves to provide command information to the system. Therefore, although Q has very little energy, it can play an obvious role and possesses unfixed long range effects[12].

This wholeness of the Qi field $\Psi(\vec{r},t)$ allows it to coordinate the activities of the various subsystems, and maintain an ordered self organized structure through the Qi circulation through vital energy passages of the body. Training allows the $\Psi(\vec{r},t)$ (human body biological field)to expand in space, lengthen its time cycle, and gradually enter the so-called state of "man and nature as one".

Also, the nonlinear accumulative relationship between Qi and Qi needs additional special research to include the important nature of Qi. There is importance significance to the study of the relationship between man and machine and man and the environment.

The next two sections specifically look into the effects of Qi on different material systems, and the different effects it causes.

III. THE EFFECTS OF QI ON DIFFERENT SYSTEMS

1. Microscopic Systems.

When Qi $\Psi(\vec{r},t)$ effects a microscopic system which includes n "basic particles", each particle is effected by quantum potential in the form of equation (4), causing the system Hamilton number to be changed from the original H_0 to H.

$$H = H_0 + \sum_{i=1}^{n} Q_i \qquad (9)$$

Herein,

$$Q_i = \frac{-h^2}{2M_i}\frac{\nabla^2 R(\vec{r}_i,t)}{R(\vec{r}_i,t)}, \text{而 } \Psi(\vec{r},t) = Re^{i\phi}$$

$\vec{r}_i, M_i$ are the coordinates and mass of the particle i.

In this manner, Qi can cause changes in microscopic systems which has been demonstrated experimentally[13].

Formula (9) is also the basis of changes in macroscopic systems.

2. Chemical Reaction Systems

From formula (9), Q or Ψ can cause changes in the activation energy of chemical reactions, and thus cause the rate constant k° to change to k.

$$k = k_0 \exp(-\langle\langle Q \rangle\rangle / k_B T) \qquad (10)$$

Herein, k_B is the Boltzman constant and T is the temperature.

The double parentheses indicates the double average of the quantum's and heat's.

From formula (10), we can initially see that Qi can have an influence on chemical reactions through the energy of Q[14].

3. Balanced Systems.

Consider Qi acting on a thermally balanced system. For the "weak" effect, we recorded Q as a random disturbance field, and any loss of equilibrium caused by Q would cause changes in the entropy S[15].

$$\frac{\partial S}{\partial t} = \int_v \sigma \mathrm{d}v + \int_{\Sigma} \vec{J}_s \cdot \mathrm{d}\vec{\Sigma} \qquad (11)$$

Here, σ is the internal entropy product, J_s is the boundary entropy flow, the integrals individually act on the volume and boundary area.

In situations near equilibrium, where σ is about zero, equation (11) is

$$\frac{\partial S}{\partial t} \simeq \int_{\Sigma} \vec{J}_s \cdot \mathrm{d}\vec{\Sigma} \qquad (12)$$

therefore

$$\Delta S \simeq \Delta t \int_{\Sigma} \vec{J}_s \cdot \mathrm{d}\vec{\Sigma} \qquad (13)$$

using the rising and falling relationship near equilibrium

$$P \propto \exp\left(\frac{\Delta S}{k_B}\right) \qquad (14)$$

herein, P is the probability of deviation from equilibrium, so

$$P \sim \exp\left(\frac{1}{r_B}\int_{\Sigma}\vec{J}_i \cdot \mathrm{d}\vec{\Sigma} \cdot \Delta t\right) \qquad (15)$$

In equation (15), making the exponential item 1/2, gives us the approximation estimation formula of r, the relaxation time.

$$\tau = 2k_B\left(\int_{\Sigma}\vec{J}_i \cdot \mathrm{d}\vec{\Sigma}\right)^{-1} \qquad (16)$$

This indicates that macroscopically, Qi produces an entropy flow J_s and causes deviation in equilibrium systems. For small deviations, the system will have a recovery process (relaxation process) to return to its original state. Equation (16) gives half the time required for recovery.

IV: PERIODIC OSCILLATION PHENOMENON

From the descriptions provided in the previous section, we see that because most Q obviously contains time t, so we must deal with the general process which evolves over time.

Considering macroscopic dynamic systems in general, their state is described as the chemical concentration, an evolving equation[5].

$$\frac{\partial \rho_\alpha}{\partial t} = F_\alpha(\{\rho_\alpha\}, \vec{r}, t; \lambda, \alpha) = 1, 2, \cdots N \qquad (17)$$

Herein, delta is the control parameter, F_s represents the general nonlinear factor relationship. Following the Qi effect, a new external parameter Q appears in the system.

$$\frac{\partial \rho_\alpha}{\partial t} G_\alpha(\{\rho_\alpha\}, \vec{r}, t; \lambda, Q) \qquad (18)$$

Now consider Q as being "small". Then equation (18) is expanded into a series for Q. Taking the Taylor series one stage approximation, we have

$$\begin{aligned}\frac{\partial \rho_\alpha}{\partial t} &= G_\alpha(\{\rho_\alpha\}, \vec{r}, t; \lambda, 0) \\ &\quad + \left(\frac{\partial G_\alpha}{\partial Q}\right)_{Q=0} \cdot Q + \cdots \\ &\doteq F_\alpha + B_\alpha Q \qquad (19)\end{aligned}$$

$B_\alpha\left(\frac{\partial G_\alpha}{\partial Q}\right)_{Q=0}$；Q为零时，$G_\alpha = F_\alpha$。

Using equation (19), we can study the effects of different Qi field Q on a system. If the Qi affects in the form of a wave packet, then under single dimensional conditions we have[16]:

$$\Psi(y,t) = \exp\left\{-\frac{i\omega t}{2} - \frac{1}{2}(y - y_0\cos\omega t)^2 + \frac{i}{2}\left(y_0^2\frac{\sin 2\omega t}{2} - 2yy_0\sin\omega t\right)\right\}$$

$$R(y,t) = \exp\left[-\frac{1}{2}(y - y_0\cos\omega t)^2\right]$$

The quantum effect potential on M is

$$Q(y,t) = \frac{h^2}{2M}[1 - (y - y_0\cos\omega t)^2] \quad (20)$$

When (equation 20) is substituted into equation (19), and a number of constants are absorbed into A_a, then we obtain

$$\frac{\partial\rho_a}{\partial t} = F_a + A_a[1 - (y - y_0\cos\omega t)^2] \quad (21)$$

?Therefore, from the forced oscillation of equation (21), it seems that under certain conditions we obtain an answer of cyclical oscillations. This provides an explanation similar to experiments[17]. As an example, equation (21) also provides us with a theoretical explanation to the most recent experiment. Below, we will briefly report a large molecule PK experiment conducted at Jilin University.

The experiment studies changes in the molecular structure of α-amylase, bacillus Speies, Type II A. The molecule samples were provided by Sigma Corporation, and a Japanese J-500C circular dichromatic spectrometer was used to detect changes in molecular structure. Its absorption pool diameter is 0.5 cm. We tracked and measured the circular dichromatic spectrum at different times following effecting with Qi, and obtained changes as shown in Illustration One. For the purpose of clarity, we have divided this up into illustrations A and B which reflect the situation 14, 20 and 30 minutes later (illustration two A) and 40 and 50 minutes later (illustration two B). We can basically note in the illustrations that the molecular structure has a pattern of altered oscillation over time, which is in pretty much conforms to the results of equation (21).

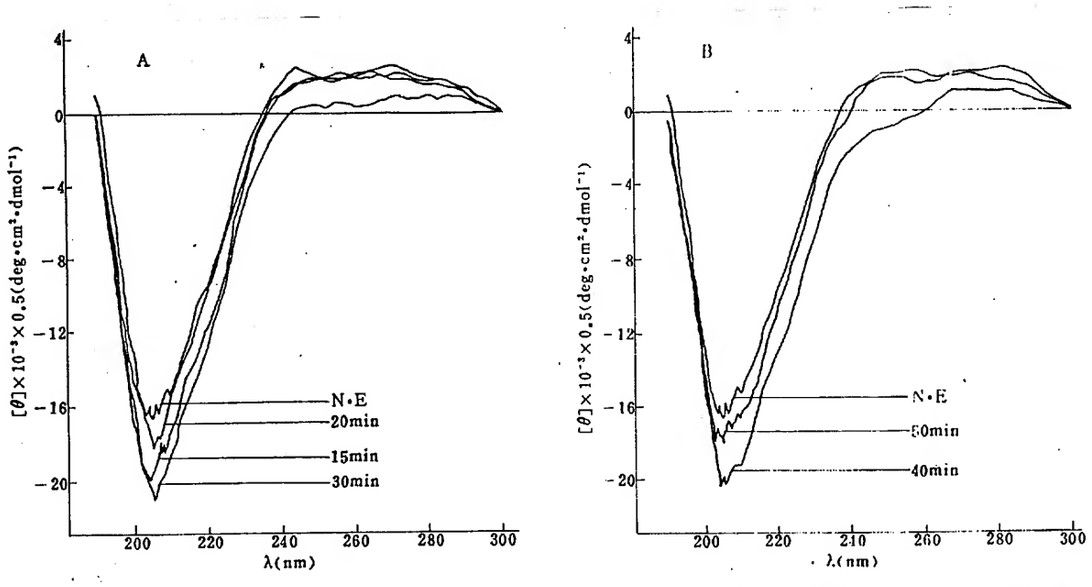

ILLUSTRATION ONE: CD SPECTRA AT DIFFERENT TIMES FOLLOWING QI EXCITATION
(A) SHOWS 15, 20 AND 30 MINUTES, AND (B) SHOWS 40 AND 50 MINUTES. N.E. IS CONTROL SAMPLE, CONCENTRATION 25 MICROGRAMS/ML, Ph 7.2, 23.5°C.

V: DISCUSSION

This article is a preliminary exploration for a theoretical model. It attempts to use equations (1), (4), (9) and (19) to explain experiments in ESP and PK, and to provide uniform knowledge of such phenomena involving Qi as Qigong and ESP. We have followed the ancient theory of the universe is composed of Qi, the theory of cycles, and the concept of the whole, grounded ourselves on modern scientific theory, and attempted to use the two for overall knowledge of the universe and its laws. Therefore, the question of Qi is a narrow one limited to Qigong and the Qi in Chinese medicine. It possesses a very widespread significance.

This article did not discuss the question of time and space or the question of interaction between Qi and Qi. These are very important questions which must be addressed. Combining the ancient classical theory of the Eight Diagrams and the Five Elements may be a good avenue for studying these two questions. Here, Qi is still the key connecting Eastern and Western concepts and science.

The model in this article must be subjected to a great deal of experimental investigation, and be developed and perfected on the

basis of experimentation. It is important to systematically study the effect of Qi on non-linear equilibrium self-organized systems. This is directly related to equation (19) where Q can take many forms which can be experimentally compared and checked for fit, thus clarifying the forms of Qi and exploring their relationship to Qi.

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