

## Brain Blood Flow during Psychokinesis Tasks - Biophysical and Psychophysiological Study on a Psychic -

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**Abstract:** The authors tested a famous Chinese psychic (female, 40 years old) during psychokinesis tasks “teleportation”. Targets were vitamin pills on an electric balance or in a bottle. The subject tried to teleport the pills in free style tests for 30-45 min. During the tasks, her brain blood flow was measured by functional near infrared spectroscopy (fNIRS), and also respiration, electrodermal activity and photoplethysmograms were measured. Pill weights were measured with an analytical semi-micro balance every second at 0.01 mg accuracy. Video cameras, field RNGs, a thermograph, field IR sensors and an electrostatic voltmeter were set near the balance. The subject was given a profile questionnaire and 5 questionnaires on character traits such as Big Five test. The Uchida-Kraepelin Psychodiagnostic test was also done. Moreover, to allow comparison to other studies, the subject was given a facial recognition test using photos of a young Japanese woman's face as stimuli. No teleportation phenomena were observed. Brain blood flow increased at the subject's right cerebral hemisphere during the tasks. Activated areas were similar to those during facial recognition tests. Only one of the field RNGs showed a significant deviation during the experimental period. Electrostatic voltmeter measurements suggested that the electric charge of her body was disturbed slightly during tasks. Based on her results of psychological tests, the subject's personality was evaluated as ordinary, and not special.

**Keywords:** brain blood flow, fNIRS, psychokinesis, teleportation, facial recognition, electrostatic, personality, Uchida-Kraepelin test, Big Five test, psychic

### 1. Introduction

In Japan, two Chinese psychic sisters, Mrs. Qiang Wang and Mrs. Ping Wang, are very famous. Japanese researchers have often tested them and they have reported remarkable anomalous phenomena including teleportation. For example, Sako and Homma<sup>1)</sup> examined clairvoyant ability of elder sister Qiang Wang, and Machi<sup>2)</sup> tested her clairvoyance and macro psychokinesis (macro PK). The authors made EEG, fNIRS and fMRI measurements for both sisters during a clairvoyant task<sup>3-6)</sup>. Also, Machi's group<sup>7,8)</sup> reported a remarkable phenomenon “teleportation” occurred in their experiment.

In Japan, only Machi's group<sup>7,8)</sup> has succeeded in testing teleportation in scientific experiments. They used video cameras to monitor a bottle of pills placed on an electronic balance. They monitored EEG and other physiological factors of the subject Qiang Wang, and they set a photo-diode device near the balance. The teleportation task was considered as very difficult

to do. Therefore the younger sister Ping Wang stayed near the subject and used her power to help her elder sister. There were 60 pills in the bottle before experiments. After Qiang Wang claimed successful teleportation, the bottle was opened and the number of pills was counted; there were only 59 pills in the bottle. After searching around, the experimenters found one pill in a camera bag. The photo-diode device showed strange noise during the teleportation task. However, the electronic balance never showed any anomalous change of weight and there were no strange phenomena in the video recordings. The experimenters could not explain why the electronic balance did not detect any change.

When Macro PK occurs, it is considered to cause various physical phenomena as side effects. The authors supposed a possibility that PK generated an anomalous electromagnetic field around the target bottle and then the field locked the circuit of the measured value of the balance in the experiments of Machi's group. The authors decided to repeat their experiments and study the details of the process of teleportation.

In addition, Machi's group measured physiological parameters during PK tasks, but they did not measure brain blood flow and they did not

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compare PK data with data of ordinary psychological tasks. Therefore the authors planned to measure brain activities of Qiang Wang during ordinary psychological tests, not only PK tests.

## 2. Methods

### 2-1 Subject

The subject Qiang Wang, was 40 years old, 162cm, 53kg, right handed, and healthy. She could speak Japanese well. The authors invited her from Beijing, China and tested her in Japan. Her younger sister did not participate in the present study because she had given birth to a child at that time.

### 2-2 Facility and Date

The trials were done at the Institute for Living Body Measurements (Bio-Emission Laboratory) of IRI on July 1st and 4th, 2007 (Fig. 1).

### 2-3 Questionnaires and Psychodiagnostic Tests

The subject completed a profile questionnaire, 5 questionnaires about her character traits, and a psychodiagnostic test. These were all done after lunch on July 4th.

The profile questionnaire consisted of 64 items including her personal information such as name, gender, birth day/month/year, age, height, and weight, and it also asked about her family, relationships with others, career, habits, paranormal experiences, self-recognition, etc. The 5 questionnaires sheets were Locus of Control (Kamahara M, Higuchi K & Shimizu N, 18 items, 4-point Likert scale)<sup>9)</sup>, Cognitive Deliberation/Impulse (Takigiku K & Sakamoto A, 10 items, 4-point Likert scale)<sup>10)</sup>, Tolerance for Ambiguity of Situations (Masuda S, 24 items, 5-point Likert scale)<sup>11)</sup>, Death Perspectives (Kaneko A, 31 items,

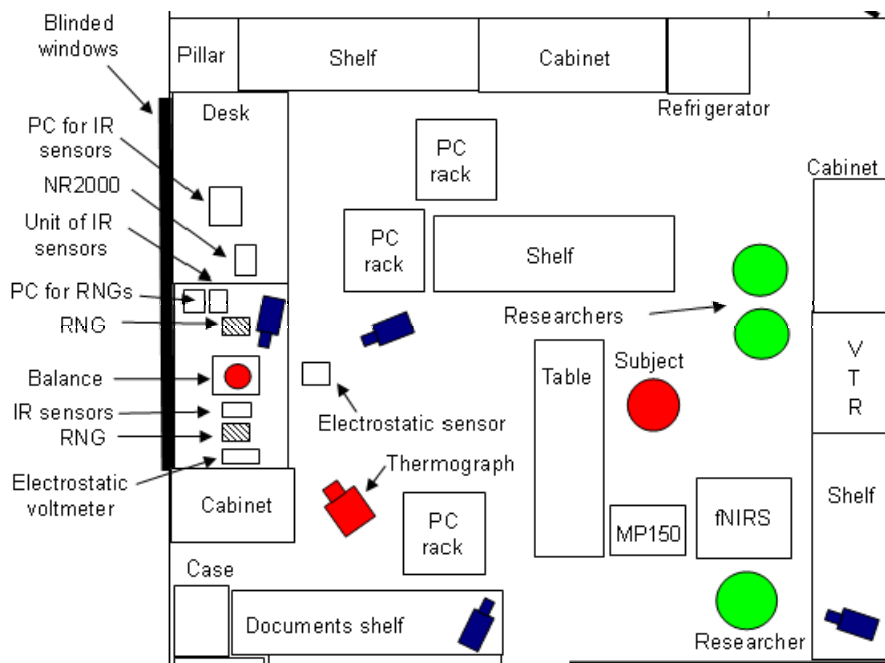


Fig. 1 Facility on July 1st

Table 1 Tasks

Task	Trial	Brain blood flow	Condition	Target pills	Sample	Date
Facial recognition	1	Pre-frontal & right temporal lobe				July 1
PK1	2	Pre-frontal & right temporal lobe	3 m from balance	17 pills on a balance	Sample A	July 1
PK2	3	Pre-frontal & left temporal lobe	3 m from balance	17 pills on a balance	Sample A	July 1
Tests						July 4
PK3	4	Pre-frontal & right temporal lobe	2 m from balance	15 pills on a balance	Sample B	July 4
PK4	5	Pre-frontal & right temporal lobe	Holding the bottle	30 pills in a bottle	Sample C	July 4

Y/N)<sup>12)</sup> and Big Five Character Traits (Murakami N & Murakami C, Y/N)<sup>13)</sup>. As a psychodiagnostic test, the Uchida-Kraepelin Test (Nisseiken Co. Ltd., Japan) was done following standard Japanese instructions on a CD.

#### 2-4 Tasks

The facial recognition task and PK tasks to teleport pills were used (Table 1).

#### 2-5 Targets of PK Tasks

Vitamin pills were used as the target of teleportation because the subject claimed that other medicines often influence her body.

Seven possible kinds of targets Multi-Vitamins, Vitamin C, E, B1, B2, B6 and B12 were purchased by one of the experimenters at a shop near the institute. They were kept in a locked safe except during the trials.

From among the bottles, the one containing Vitamin C (designated then as Sample A) was chosen as the target by the subject on the day of the first trial.

Samples B and C were purchased after the third trial. Those were supplements of vitamin B2.

#### Sample A

Type: Vitamin C supplement  
Contents: 61.6g (770mg×80pills)  
Name: Nature Made C with Rose Hips 500mg  
Provider: Made in USA. Importer: Otsuka Pharmaceutical Co., Ltd. (Japan)  
Components: Lactose, rose hips, vitamin C, cellulose, sucrose esters of fatty acids  
Nutrition facts: At 1 pill (0.77g). Energy: 3.08kcal, protein: 0g, lipid: 0.007g, carbohydrate: 0.752g, sodium: 0.08mg, vitamin C: 500mg.  
Product No.: RC20492  
Validity: 10.02.06  
Bottle: Made by plastic.

#### Sample B

Type: Vitamin B2 supplement, stomatitis & dermatitis  
Contents: 60 pills  
Name: Chocola BB Plus  
Provider: Eisai Co. Ltd. (Japan)  
Components: At 2 pills. Riboflavin 5'-phosphate sodium: 38mg, pyridoxine hydrochloride: 50mg, thiamine mononitrate: 20mg, nicotinamide: 40mg, calcium pantothenate: 20mg, and other additives.  
Product No.: 74B76M  
Validity: 2010. 2.  
Bottle: Made by Plastic.

#### Sample C

Type: Vitamin B2 preparation with Vitamin B6, B1, C  
Contents: 30 pills  
Name: Chocola BB Pure

Provider: Eisai Co. Ltd. (Japan)

Components: At 2 pills. Riboflavin 5'-phosphate sodium: 38mg, pyridoxine hydrochloride: 24mg, thiamine mononitrate: 20mg, nicotinamide: 40mg, calcium ascorbate: 125mg, and other additives.

Product No.: 73A25M

Validity: 2009. 10.

Bottle: Made by plastic. Height: 45mm, Diameter: 35mm.

#### 2-6 PK Task Trials

Trials took about 30 min and was done in a free style. Trials 2-4 were done under remote conditions, while trial 5 was done under the condition that the subject held the bottle in her hand directly.

#### 2-7 Facial Recognition Task

To obtain the usual brain activities of the subject, the authors used a facial recognition task which was prepared in an earlier collaborative study with Dr. Miyako Tazaki, Tokyo University of Science: "Facial recognition differences between the people with non-dialectic and with dialectic expression"<sup>14,15)</sup>.

Stimuli for this task were photos of a young Japanese woman's face; the woman had been trained as an actress. Six emotions were decided as basic emotions: laughter, surprise, fear, anger, dislike and contempt. Twelve basic emotional faces, two for each emotion, were prepared as photos. Ten kinds of intermediate faces were prepared as photos and were a combination of laughter and another basic face (Fig. 2). The set of stimuli were based on common Japanese faces. Therefore the faces were very vague for people of other cultures, but it was difficult, even for Japanese, to distinguish the emotions.

Each target photo was automatically shown on a display for 8s (ordered as 15, 1, 5, 11, 10, 8, 2, 16, 4, 3, 10, 4, 6, 1, 9, 12, 2, 9, 11, 5, 7, 13, 3, 14, 6, 7), alternating with a grey screen that was shown for 4s. The subject chose an answer by a rod among the words laughter, surprise, fear, anger, dislike, contempt, compound and unknown which were displayed beside the photo within 8s. Her brain blood flow was measured at the right frontal area and the right temporal lobe with functional near infrared spectroscopy (fNIRS) during this task.

#### 2-8 Measurement of Brain Blood Flow during PK task

Brain blood flow was measured by fNIRS (OMM-3000, Shimadzu, Japan) at the frontal lobe and right or left temporal lobe of the subject. Relative change of brain blood flow was calculated for each task; off set point was 10s after the start of each task. Data of brain blood flow were averaged for 90-160s, 20 times, for 59 points with spline compensation.

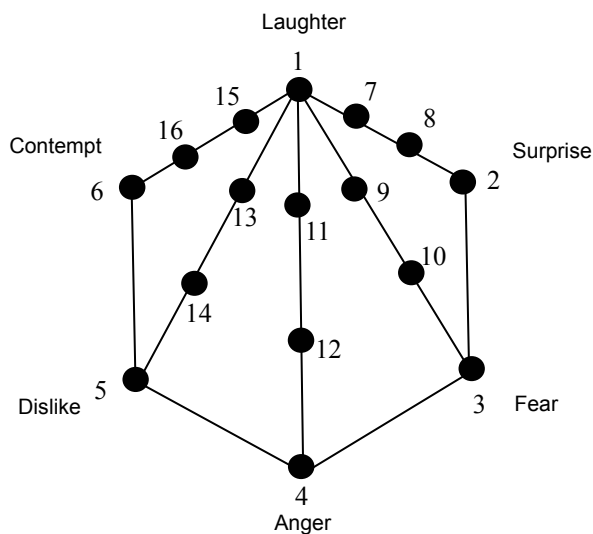
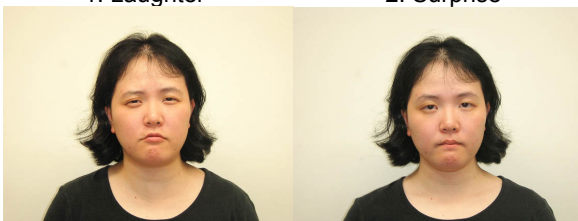
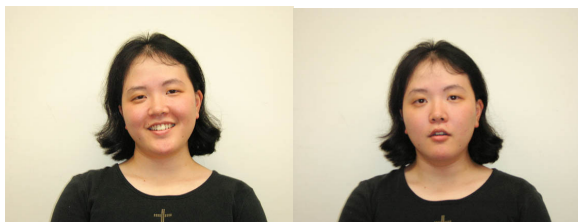


Fig. 2 Stimuli of Facial Recognition Task

## 2-9 Other Physiological Measurements

The subject's electrodermal activity (EDA), photoplethysmogram (PPG), respiration and skin temperature were measured with the MP150 (Biopack Systems, Inc., USA) at a sampling rate of 200Hz, LPF 10Hz. Respiration was measured at her belly. EDA was measured by an exosomatic method (DC 0.5V constant). Ag-AgCl electrodes (diameter: 7.95mm) were attached on the second segment of the second and fourth fingers of subject's left hand, and her skin conductance was recorded. Electrode paste used was an isotonic gel (GEL101). PPG (TSD100B) was measured at the tip of the third finger of her left hand. Skin temperature at the center of her left palm was also measured with a thermistor (TSD102A, with 0.6s response time). To prevent change of contact pressures and positions of sensors/electrodes, they were fixed using a band and an adhesive plaster. Finally, cables were fixed tightly on the palm and wrist of the subject using an adhesive plaster<sup>16,17</sup>.

## 2-10 Electronic Balance

The electronic balance was an analytical semi-micro balance GH-252 (A&D Co. Ltd., Japan). The balance had an automatic self calibration function. The balance was set at 0.1mg or 0.01mg resolution and a high-speed response mode. On July 4th, it was connected to a PC through RS-232C and controlled by the program WinCT Plus (A&D Co. Ltd.). Weight data were recorded by the PC every second.

## 2-11 Field RNGs

Two RNGs (Orion, Holland) were used to monitor anomalous disturbances of entropy around the target. The RNGs were set symmetrically on two opposite sides of the balance and the distance between them was 55cm. The RNGs were connected to a PC and run continuously by Fred.exe (Version 1.0, written by Radin, USA) at 2000 bits/s from June 29th to July 9th. After measurements, RNG data were saved as CSV files. Next, CSV data were converted into 1-minute unit data by KakoZanCalc (Version 2.0, written by Kokubo). Data analyses were done for cumulative deviation and accumulation of  $(Z^2-1)$  every second.

## 2-12 Electrostatic Voltmeter

An electrostatic voltmeter (FR-211C, Fujimaru, Japan) was set to monitor anomalous electric disturbances around the target. The sensor was set in front of the desk on which the balance was set. Output of the electrostatic voltmeter (range: 50mV) was collected by MP150 (Biopack Systems, USA) through an amplifier (DA100A; LPF 10Hz).

## 2-13 Field IR Sensors

The authors made an original detector, Sekigaisen 4-Gouki to detect anomalous photon signals around the target. Sekigaisen 4-Gouki had 3 sensors for infrared rays: MIR-100 (6.4-14μm, sensitivity 75%,

Rv 11.5V/W), MIR-100Q (0.28-4.8 $\mu$ m, sensitivity 90%, Rv 4.0V/W) and MIR-100HCA (3.4-3.5 $\mu$ m, sensitivity 75%, Rv 0.5V/W). Sensors were provided by Mitsubishi Chemical Corporation (Japan). Sensors were controlled by the IC MAC4050, and calibrated by a built-in-circuit CMOS thermal sensor S-8100B. Radiation ratios were set at 0.98. The sensors were packaged in an aluminum dark case. Sekigaisen 4-Gouki was set at 17cm from the center of the balance, and connected to a PC through a data collector (NR2000, Keyence, Japan).

#### **2-14 Thermography**

The balance was monitored with a thermograph TH3104MR (NEC Medical Systems, Japan), which was sensitive at 3-3.5 $\mu$ m. Data capturing and analysis were done with the program TH31-402 (NEC Medical Systems). Data were recorded by a PC through LAN. The thermograph was used to monitor temperature around the balance although it was impossible to observe pill temperatures with the thermograph through the glass of the balance.

#### **2-15 Digital Storage Oscilloscope**

A digital storage oscilloscope (DCS-7040, Kenwood, Japan) was used on July 4 to check the video signal of the video camera (DCR VX9000, 3 CCD type, Sony, Japan).

#### **2-16 Video Monitoring**

RGB signals of the PC monitors of the thermograph, MP150 and Sekigaisen 4-Gouki were converted to video signals. And then, those signals were recorded by a VTR after being mixed with other video signals. However, RNGs, fNIRS and experimental equipment for facial recognition were operated alone during experiments. The details of the video monitoring system were changed after the experiment of July 1st.

#### **2-17 Instructions for PK Tasks**

The following instructions were given orally in Japanese to the subject.

*This is a scientific experiment on a teleportation task.*

*Please be quiet, do not speak or make any sound and do not move your body unnecessarily during experiments.*

*1 trial is 30 minutes.*

*During the task, please concentrate your consciousness on the target and make an effort to cause teleportation of the target pill.*

*When you are tired, please say so.*

*We will stop the experiment.*

*Please tell us when you succeed in doing anything, even if it is not teleportation.*

*Are you ready?*

#### **2-18 Procedure for PK Task Trials**

After attaching fNIRS probes to the subject's

head, the above instructions were given to the subject. Each trial consisted of a 2-min pre-rest, 30-45 min PK task or 5-min facial recognition task, and a 2-min post-rest.

### **3. Results of Physical Measurements**

#### **3-1 Weight and Number of Target Pills**

Before trial 2 (the first PK task), 7 bottles of tablets were shown to the subject, and then she chose one bottle (Sample A).

One of the experimenters set a waxed paper on the balance pan and adjusted the tare to zero. Then, he opened the bottle of Sample A and used tweezers to put 17 pills on the electronic balance. The starting weight was 13.1234g. The bottle was set near the balance. A small video camera monitored the indicator of the balance and a large video camera monitored the whole balance. Moreover, a thermo camera monitored the whole balance at 1 frame per second. All video signals were collected continuously by a VTR recorder. A second experimenter checked the indicator of the balance through the monitor.

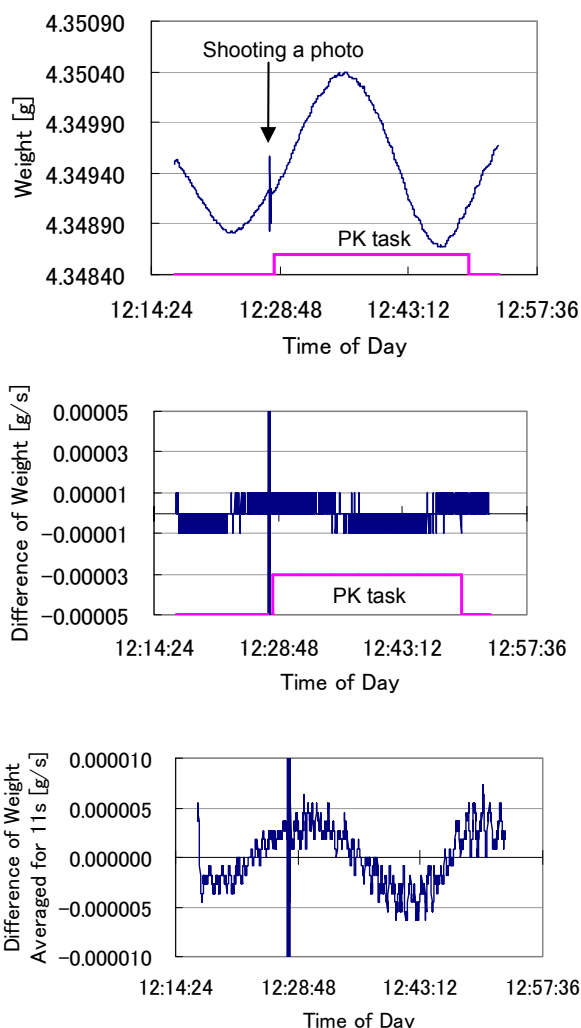
The subject tried to make an effort to teleport pills without touching them when at a 3 m distance from the balance in trials 2 and 3. Room temperature was 28 Celsius, humidity was 44%. The room's air conditioner was stopped during trials. The weight of the pills increased gradually. This was considered to be due to a hygroscopic change and also to a change of buoyancy according to room temperature. The authors did not find any anomalies.

In trial 4 (PK task), Sample B was used as the PK target. One of the experimenters set a waxed paper on the balance pan and adjusted the tare to zero. Then, he opened the bottle of Sample B and used tweezers to put 15 pills on the balance. The starting weight of pills was 4.34885g at 12:10. Room temperature was 26.5 Celsius, humidity was 48%. The bottle was set near the balance. The subject tried to do teleportation at a 2 m distance from the balance from 12:31 to 12:50.

The weight of pills was recorded every second by a computer. It drifted periodically (**Fig. 3**), and this was considered as the change of buoyancy of pills according to room temperature which was controlled by the room's air conditioner. During the PK task, the maximum absolute change of weight was 0.00001g/s. There was no anomaly in the change of weight. Moreover, there was no movement of pills seen by checking the video recording.

In trial 5 (PK task), Sample C was used which consisted of 30 pills in a plastic bottle. After attaching probes on the subject, one of the experimenters weighed Sample C. The weight was 24.59936g. In this trial, the subject held the bottle directly and sometimes

shook it during the task. This is a common way to teleport pills from inside a bottle to outside it, and many psychics have claimed to succeed in teleportation by doing this. The subject has also claimed to have had successful experiences in teleportation in this way. It was considered as easier for her than a non-contact condition although the measurement of process of teleportation becomes difficult. She tried teleportation from 15:47 to 16:06. However, she did not succeed in teleportation. After the task, the weight of sample C was 24.60197g; room temperature was 25.8 Celsius; humidity was 35%. An experimenter checked the cap of the bottle visually, and then he gripped it and confirmed that the cap was in a tightened state. He opened the bottle and counted the pills which numbered 30. There was no anomaly.



**Fig. 3 Time Transition of Sample B Weight (Time resolution: 1 s)**

### 3-2 Thermography

In trials 2, 3 and 4, a thermo camera recorded circumstances around the electronic balance. Direct observation of pills was not possible by thermography because infrared rays cannot pass through the glass wall around the balance pan. There was no obvious anomaly in the thermographs during trials.

### 3-3 Field IR sensors

Sekigaisen 4-gouki, which has 3 IR sensors, was set near the balance. IR sensors of Sekigaisen 4-gouki were shielded by an aluminum dark case. It is often said that anomalous light appears around targets during ESP or PK tasks<sup>18-26</sup>. If psi phenomena cause an anomalous change of the property of time-space, anomalous light may appear inside the aluminum case of Sekigaisen 4-gouki, as a kind of field detector.

In trials 2 and 3, there was no obvious anomalous signal. In trials 4 and 5, the authors abandoned use of Sekigaisen 4-gouki because high frequency noises appeared in the IR data. No cause was identified at that time. There was a possibility of electric artifacts caused by change of the cable layout in the experimental room.

### 3-4 Field RNGs

Data from the RNGs were obtained from 22:37 on June 29 to 9:52 of July 9, which included pre and post controls. Trial periods were 13:20:00-16:21:00 on July 1 and 11:00:00-16:14:00 on July 4. The start time was when the subject entered the experimental room from the reception room, and the end time was when the measurements were finished.

**Table 2** shows the results for the field RNGs. For cumulative deviation, RNG No. 2 showed statistical significance ( $p = 0.006$ , two tails) on July 1, 2007 (the first day). Cumulative deviation of July 4 also decreased although it was not significant finally. Moreover, cumulative deviation decreased continuously for 3 days after the trials of July 4. This suggested a possibility that some residual effects influenced RNG No. 2 for a few days.

RNG No. 5 did not show similar results. Deviation of July 4 was not significant finally although it increased to the 5% significance level temporarily.

For accumulation of  $Z^2-1$ , both RNGs did not show positive anomalies during the trial days. However, all data of RNG No. 5 showed a tendency that accumulation of  $Z^2-1$  decreased continuously from pre control to post control.

Those results suggested the following possibilities that: 1) the effects of psi were concentrated upon or around RNG No. 2 more than RNG No. 5; 2) RNG No. 5 had some technical trouble at that time.

**Table 2 Results of Field RNGs**

RNG No.2	Cumulative deviation	N	p value (two tails)		Accumulation of Z <sup>2</sup> -1	n	Criterion of 5% significant
All data June 29, 22:37:00-July 9, 9:52:00	-5043	1636200000	0.803	n.s.	-32.182	818100	1487.7520
1-Jul-07 13:20:00-16:21:00	-6365	21840000	0.006	significant	-56.810	10920	171.8852
4-Jul-07 11:00:00-16:14:00	-5356	37680000	0.081	n.s.	-57.728	18840	225.7707

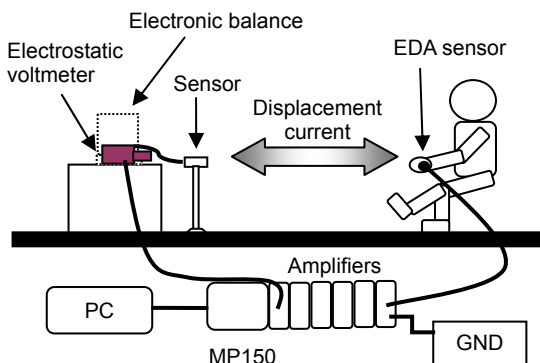
  

RNG No.5	Cumulative deviation	N	p value (two tails)		Accumulation of Z <sup>2</sup> -1	n	Criterion of 5% significant
All data	-2113	1636200000	0.917	n.s.	-2695.940	818100	1487.7520
1-Jul-07 13:20:00-16:21:00	-1075	21840000	0.645	n.s.	-15.802	10920	171.8852
4-Jul-07 11:00:00-16:14:00	3343	37680000	0.276	n.s.	-242.798	18840	225.7707

\* n.s.: not significant

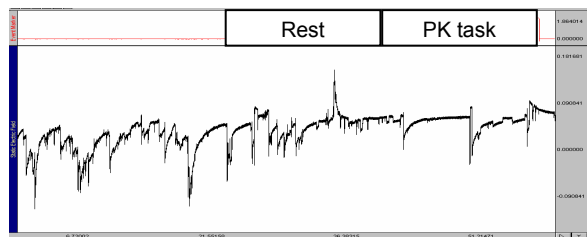
**3-5 Electrostatic Voltmeter**

The sensor of the electrostatic voltmeter was set in front of the balance. The subject tried to do teleportation at 2 or 3m distances from the balance. The purpose of the electrostatic voltmeter had been to monitor the balance, but the voltmeter showed electric connection between the subject and the voltmeter unexpectedly. Fig. 4 shows a drawing of the circuit which connected the subject with the electrostatic voltmeter. The subject's body was not connected to the sensor of the voltmeter by electric cables directly, but there was an invisible weak electric connection between them. If an electric charge of the subject's body were changed by mental activities during PK tasks, the output of electrostatic voltmeter would be changed as a result of the displacement current between the subject and the sensor of the voltmeter. For example, if the subject's foot were lifted from the floor, an electric spike would be detected by the electrostatic voltmeter.



**Fig. 4 Connection between Subject and Electrostatic Sensor**

Large spikes were often caused by movements of the subject's body (Fig. 5), and it was difficult to identify the small fluctuation of electric charge of her body. Therefore, data from the electrostatic voltmeter were analyzed by FFT. 950-s segments of control and trial data were analyzed by FFT with a Hanning window.



**Fig. 5 Spikes in Trial 5**

In trial 4 (remote condition), there was a slight difference between control and trial at less than 1Hz in frequency spectra. And also, similar results were obtained in trial 5 (holding condition) (Fig. 6).

Nomura<sup>27,28)</sup> reported that when healers did healing (laying-on-of-hands) against an antenna, a few MHz noise appeared in the displacement current between the subject and the antenna while healing. In the present study, the authors could not observe high frequency components because an electrostatic voltmeter which could measure only low frequency was used. Although high frequency noise might also occur during PK tasks, at least the present results suggested a possibility that the low frequency electric change of the subject's body was caused by her mental activities, not only by artifacts of movements of her body.

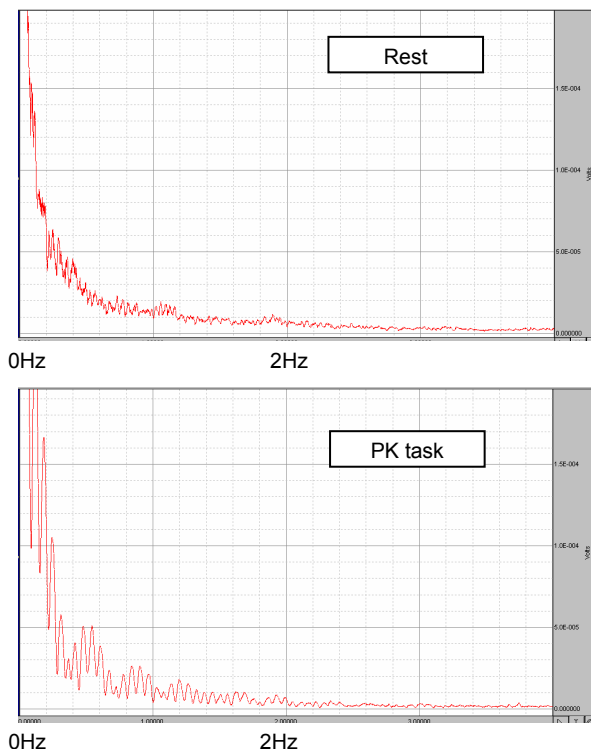


Fig. 6 Frequency Spectra of Trial 5

#### 4. Results of Physiological Measurements

##### 4-1 Comparing Brain Blood Flow of PK and Facial Recognition Tasks

To measure brain activity of the subject, her brain blood flow was measured by fNIRS. Relative change of brain blood flow was calculated for each task; off set point was 0-110s after the start of the tasks. Data of

brain blood flow were averaged for 100-370s, 20 times, for 59 points with spline compensation. The averaged activated areas of the subject's brain were obtained through relative changes of blood flow although fNIRS cannot measure metabolism accurately.

In the facial recognition test task, the subject was required to distinguish very vague emotional faces of a young Japanese girl. Through previous other studies, the authors knew that this task was very difficult even for Chinese who are categorized into persons who live in a non-dialectic culture<sup>6,14,15</sup>. This difficult task was expected to cause an obvious brain blood flow change in the Chinese subject Wang who was born and raised in China although she can speak Japanese well.

Fig. 7 shows distributions of relative brain blood flow change (oxy-Hb) which are projected images on a dummy brain.

Brain blood flow of the subject in the facial recognition task did not change obviously in matching areas. The reason was considered that she had enough experiences to recognize vague Japanese faces showing emotions because she had stayed in Japan many times and because she could speak Japanese well. In this task, a typical spontaneous brain blood flow (SBFC)<sup>4,5</sup> occurred. SBFC suggests that the subject concentrated her awareness well on the target facial photographs.

During PK tasks, the relative brain blood flow changes of the subject were extreme on her right frontal lobe. This was considered as one of the characteristic points of the subject. Moreover, it was not contradictory to her claim that Chinese researchers had already pointed it out after measuring her brain in China at one time. The authors' previous fMRI

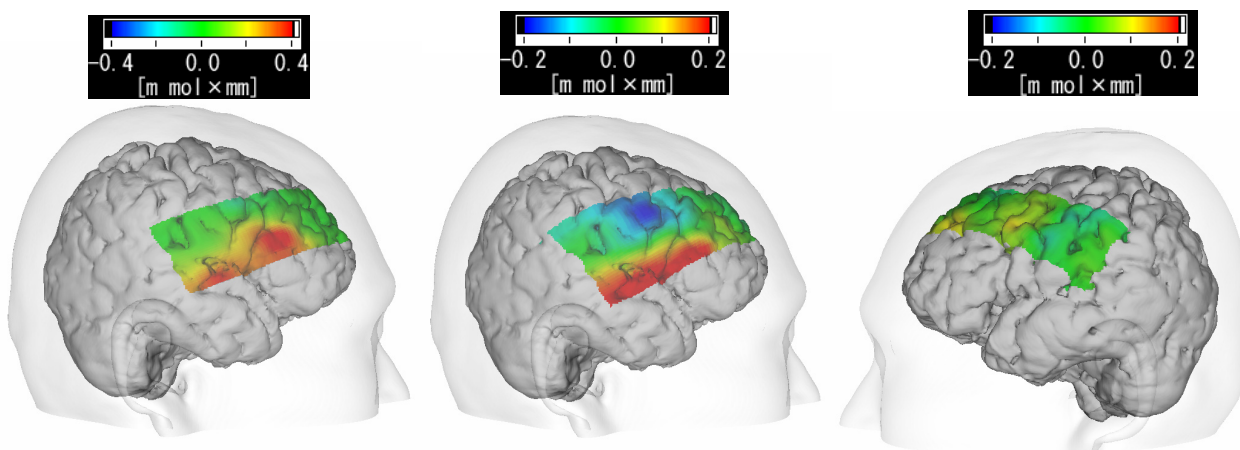


Fig. 7 Relative Change of Brain Blood Flow

Left: Facial recognition. Averaged for 100s. Middle: PK task (Trial 4). Averaged for 300s. Right: PK task (Trial 3). Averaged for 300s.



measurements in 1999<sup>3)</sup> showed both temporal lobes and pre-frontal area of the subject were activated during clairvoyant tasks. Her right temporal lobe and right frontal lobe were very active during PK tasks of the present study. However, in the PK tasks, “the third eye” area of the pre-frontal area and left temporal lobe were not more active than in clairvoyant tasks. It is often said that there are differences between results of fMRI and fNIRS. If the subject’s clairvoyant activity could be measured by fNIRS, an answer might be obtained. However, measurement of ESP activities was abandoned because the subject claimed that it was difficult to change her PK ability to ESP ability immediately. Usually she trained only for PK repeatedly before experiments if researchers wanted to test her PK ability, and she trained only for ESP if researchers wanted to test her ESP ability. Another test using fNIRS was needed, but, unfortunately, it was not possible in the period of the present study. Therefore it was concluded tentatively that her right frontal lobe and right temporal lobe were more important areas for PK tasks.

In addition, her activated areas during PK tasks were very similar to activated areas during the facial recognition task. This was very interesting. There are two possibilities at least regarding her brain activities. One is that her brain activities are ordinary and shared by ordinary persons during common psychological tasks, but she also uses PK functions unconsciously during the facial recognition task. The other is that her nerve circuits are special and different from ordinary persons and the important brain functions including PK functions are located in small areas of her right frontal lobe, which have plural and different roles. The former possibility suggests that the right cerebral hemisphere will be activated if an ordinary person looks at another person with a will using PK. The latter possibility suggests that it is difficult to have the same PK ability as the subject’s ability.

**4-2 EDA and PPGs**

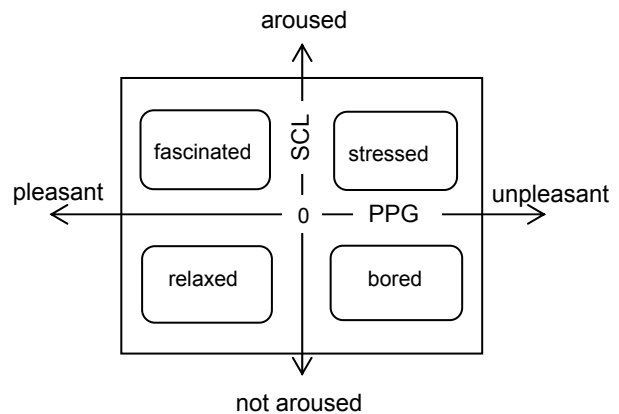
The authors measured EDA and PPGs of the subject using fingers on her left hand. EDA was analyzed as skin conductance level (SCL). The 1-minute average of SCL was calculated for every minute. Standardized data were obtained from  $\log(E_n/E_0)$  by setting the first 1-minute average of SCL as  $E_0$ , and substituting each minute average SCL for  $E_n$ . The peak frequency of a PPG was obtained by FFT every minute, and their standardized values were calculated as  $\log(P_n/P_0)$  by setting the first 1-minute average PPG as  $P_0$ , and substituting each minute average PPG of  $P_n$ .

Those standardized values were plotted on a 2-dimensional map for visualizing the subject’s

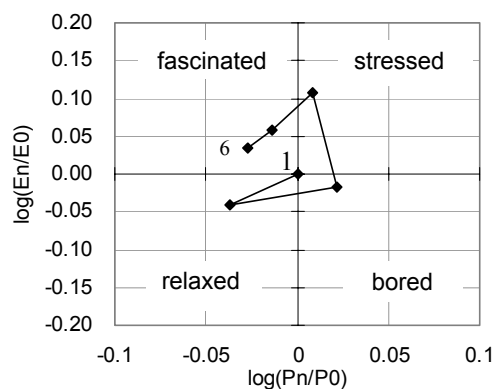
psychophysiological states during the tasks. This method was developed by the authors<sup>29)</sup>, and the authors and Watanabe et al improved to a psychophysiological states model<sup>30)</sup> combined with the Russell model<sup>31)</sup>.

In this way, psychophysiological states of subjects can be displayed like Fig. 8. Data of trial 1 (facial recognition task) and trials 4 and 5 were analyzed. Data of trials 2 and 3 were omitted because those data were not complete.

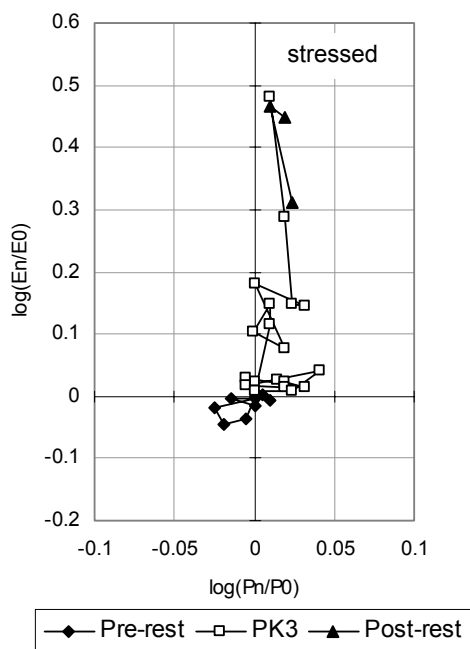
Fig. 9 shows the transition of the subject’s psychophysiological states during the facial recognition task. It suggested that the subject was relaxed at the beginning of the task. She became bored a little, and then, she began to feel stress because the emotional faces in the photos were very vague. At last, she seemed to be fascinated by this strange task.



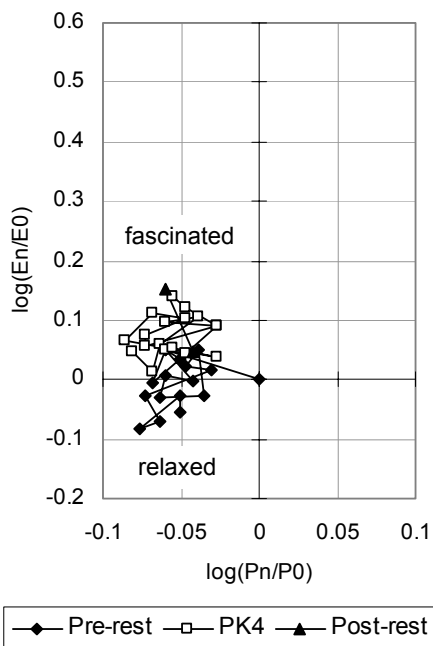
**Fig. 8 Map of Psychophysiological States Model with Standardized Values of SCL & Pulse Rate**



**Fig. 9 Transition of Psychophysiological States During Facial Recognition Task**  
 Step: 1 min. First dot: Pre-rest.  
 From 2nd to 6th dot: Task.



**Fig. 10 Transition of Psychophysiological States During PK3 Task (Distance Condition)** Step: 1 min.



**Fig. 11 Transition of Psychophysiological States During PK4 Task (Holding Bottle Condition)** Step: 1 min.

**Fig. 10** shows the results of trial 4. The PK3 task was done under the distance condition in which the subject tried to teleport a pill in a bottle on an electric balance at a 2 m distance from her. It was considered as very difficult for her even though she is well known as the strongest psychic in China. The map of the psychophysiological states during PK3 showed that her arousal level rose remarkably during the task. It suggested that the subject tried to make a strong effort and she was not relaxed.

In contrast, during trial 5 (PK4 task), her psychophysiological states showed that she was amazed and fascinated with the task (**Fig. 11**). In this case, she gripped the bottle in her right hand directly. This is a common way by which psychics teleport pills from a bottle, and also she was familiar with the way. Unfortunately, teleportation did not take place, but her psychophysiological states stayed in the “fascinated” state. This state was considered as important to execute psychokinetic abilities.

### 5. Results of Psychological Tests

The Uchida-Kraepelin test is a psychodiagnostic test in which the subject continues to calculate addition of a 1-digit number. It is commonly used in Japan for checking personality, especially as an aptitude test for jobs. The results are categorized into 24 types from viewpoints of amount of calculation, curve of calculation and error rate. In the present study, the test was done following the standard Japanese instructions on a CD. The data sheet was sent to Nisseiken Co. Ltd. and a veteran analyst analyzed and judged the subject’s personality.

The personality type was a’f-f(A) which is categorized as the semi-stable type. Her ability to work on tasks and her working speed were good, and her social behavior was rather biased. Characteristic points of her personality or behavior were that she was slow at the beginning of a task, the speed at which she changed the task or her feeling was good, and she was excitable. Moreover, she had a tendency to get depressed. In addition, there were other notable points; she was not an extrovert, but had independence of mind; she had a tendency to be enthusiastic and also to get tense easily. Those results meant that her personality was ordinary, not special, and not abnormal.

Results of the Big Five test (Japanese version) are shown in **Table 3**. Whole impression of the subject (automatic explanation) is summarized as that she is clever, all-round, curious and creative. She has a sense of beauty. She can deal calmly with any troubles which can not be resolved by usual ways. Even if her execution is not succeeded, she can discuss the

reasons deeply and revise the ways or strategies. She has interest in ideal and unknown matters rather than reality, therefore she has a tendency to try risky challenges. She is attracted to arts. She is easygoing and confident, and also has emotional stability. She is satisfied with her daily life. She is never jealous although she is sometimes insensitive to other person's emotions.

Results of other psychological tests were similar. The authors have not found any special character traits relating to psi.

**Table 3 Results of Big Five Test**

Reliance Scales	Score	Standard Score
No-response	1	68
Frequency	1	50
Attitude	6	55
Basic Scales	Score	Standard Score
Extroversion	8	55
Agreeableness	8	46
Conscientiousness	9	53
Emotional Stability	12	65
Intellect	10	63

## 6. Discussions and Conclusions

The psychological approach showed that the subject was an ordinary person, not special, and not abnormal. No important information related psi was obtained from surveys of her personality.

Field detectors did not show anomalies except for one field RNG. The existence of field effects during PK activity was not confirmed in the present study. However, the electric charge of the subject's body varied a little during PK tasks. It may be possible to detect anomalous field effects in further studies.

Physiological measurements suggested some important points. 1) The subject's brain had a notable property; blood flow increased remarkably for the right cerebral hemisphere. Flow was different from flow of brain activities during her clairvoyant activities. 2) Increasing areas of brain blood flow were common between PK tasks and facial recognition task. This was an unexpected founding and also very interesting. Further studies are needed to discuss the locality of brain functions of PK. 3) The authors recognized it was important to test psychics through common tasks, not only psi tasks.

The authors tested teleportation phenomena with a famous strong psychic. Although her physical conditions were good and experimental circumstances were also good for her, the authors did not succeed in detecting any phenomena. Many additional trials are needed because teleportation is considered as very difficult phenomena and more data are needed.

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