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Original Research Paper

Spatial Distribution of Potential of Controlled Healing Power – Exploratory Measurement Using Cucumber as a Bio-sensor –

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Abstract: The authors tried to measure a spatial distribution (X-Y plane) of controlled healing power around a healer by a gas measurement method using cucumber (*Cucumis sativus* 'white spin type') as a bio-sensor. The healer was W003 (a 41-year old female) who is well known as a psychic. After being seated in a chair, the healer then did non-contact healing (laying-on-of-hands) for 30 min to increase the odor of the target cucumber pieces in 2 experimental Petri dishes which were set on a table (67 cm height). To measure the distribution of potential around her body, cucumber pieces were next set at 20 points (70 cm height) around her: 4 points at 50 cm intervals in forward, backward, rightward and leftward directions from the healer; and 4 points at 45-degree angles between the four directions (about 2.5 m distant from her). Two healing trials were done with a 15-min rest between them. During trials, control pieces were kept in another room (with a straight distance of 12 m between the healer and controls). After 24 h, gas concentrations of each cucumber sample were measured with gas detection tubes for ethyl acetate (141L, Gastec), and J values (the natural logarithm of the ratio of gas concentrations of experimental and control samples) were calculated at every point. The results suggested that a specific potential was generated around the healer which was not the Coulomb potential, and this potential had anisotropy between the front-backward and right-leftward directions.

Keywords: potential, spatial distribution, non-contact healing, laying-on-of-hands, *Cucumis sativus* 'white spin type', gas measurement method

1. Introduction

Since 2006, the authors have estimated controlled healing power of about 50 healers by the biophoton and gas measurement methods using cucumber pieces (*Cucumis sativus* 'white spin type') as a bio-sensor [1-19]. In both the authors' biophoton and gas measurement methods, healing effects cannot be detected if there is no difference of power between places where experimental and control samples are set because healing power is calculated through comparison with samples[1,16]. Based on the authors' studies, many healers could concentrate their power on the target samples just in front of them and make a difference on condition that the distance between experimental and control samples was 3 m. However, many issues were unknown; for example, width of the healers concentrated fields, the relationships between magnitude of power, directional properties, stability in time, etc. Moreover, the authors had speculated that the potential around the healers was not similar to the Coulomb potential, but its actual shape was unknown.

The authors developed a gas measurement method in 2009[16-19]. This gas method has several merits; for example, it is inexpensive to use relative to their biophoton method and it is easy to execute multiple-point measurements.

In the present study, the authors arranged many cucumber pieces around a healer, and tried to measure the spatial distribution of potential of controlled healing power which is expected to be generated around the healer when doing healing. In this paper, both the terms of "power" and "potential" are used only for convenience, the examination of the physical validities of these terms is a future subject.

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2. Methods

Principle of Gas Measurement Method: The details of the method have been described elsewhere[17,18]. Only an outline of the method is given here. First, 4 pairs of experimental and control samples (slice thickness: 1 cm) were cut from a cucumber (*Cucumis sativus* 'white spin type'), and then slices were arranged in glass Petri dishes (sample and control dishes) which were then labelled and covered with glass lids. A healer attempted to do non-contact healing on a sample dish for 30 min, while a control dish was kept at a distance. After 30 min, lids were removed from both dishes and the dishes were put into separate 2.2 L sealed plastic containers. Containers were kept in a room at 24 °C for 24 h. After 24 h, 100 mL samples of gas were taken 3 times (totally 300 mL) from each container using the short-term gas-measuring detector tube for ethyl acetate (Model 141L, Gastec, Japan). J value, which is the natural logarithm of the ratio of gas concentrations of experiment C_E and control C_C, was used as an index of controlled healing power.

$$J = k \ln (C_E / C_C)$$

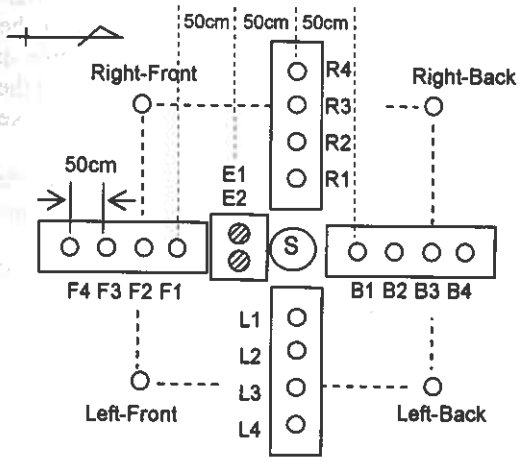

Fig. 1 Arrangement of Data Collection Points
F: front, B: back, R: right, L: Left

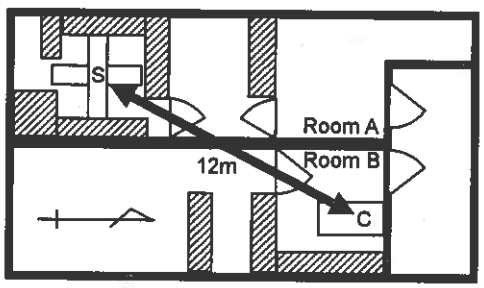

Fig. 2 Subject (S) and Controls (C)

Here, k is a coefficient and $k = 1$.

Date & Place: Healing trials were done on June 21 in 2010 at Rooms A and B of the Institute for Living Body Measurement of the International Research Institute (IRI) (Inage, Chiba).

Subject: The healer was identified as W003 (a 41-year old female). She was a well known Chinese psychic with high abilities[20-22]. She claimed that she sometimes had practiced healing.

Arrangement of Data Collection Points: **Fig. 1** shows the arrangement of data collection points in Room A: 2 dishes for the healing test (E1 and E2) and 20 dishes for the potential measurement. All dishes were covered by glass lids during trials.

The healer sat on a chair and tried to do non-contact healing (laying-on-of-hands) toward the experimental dishes (E1 and E2), set on a table (67 cm height), for 30 min to increase the odor of the cucumber pieces (i.e., to increase the gas concentration of cucumber pieces).

Dishes for the potential measurement were set at 4 points at 50 cm intervals in forward, backward, rightward and leftward directions from the healer; and 4 points at 45-degree angles between the four directions (about 2.5 m distant from her; designated as oblique). Those dishes were set at a 70 cm height. Moreover, they were covered with paper towels so that the healer never saw them directly during trials.

During trials, control dishes and all dishes of the simultaneous blank test (described in the next item) were kept at Point C in Room B (**Fig. 2**). The straight distance between the subject and them was 12 m.

Making Samples: For one healing trial, 24 cucumbers were used and 24 pairs of experiment and control dishes were prepared (total of 48 dishes).

Dishes for the healing test were prepared according to the simultaneous calibration technique (SCAT)[17,18]. First, 16 pairs of experimental and control samples (slice thickness: 1 cm) were cut from 4 cucumbers. Next, each of the 4 pairs was set into 4 pairs of experimental and control Petri dishes (4 slices were set into each dish). Two pairs of dishes were selected at random for the healing test and labelled as E1, C1, E2 and C2 (E is the experimental dish, C is the control dish), and the others were used for the simultaneous blank test and labelled as E3, C3, E4 and C4. Then, all dishes were covered with glass lids (**Fig. 3**).

For the potential measurement, sample dishes of each series of front, back, left, right and oblique were made using the same SCAT (for the remaining 20 cucumbers). Four pairs of dishes were made from 4 cucumbers for the front series, and labelled at random as F1E, F1C, ..., F4C (F denotes front and E is an experimental dish, C a control dish.). Dishes of the other series were made in the same way. Then, all dishes were covered with glass lids.

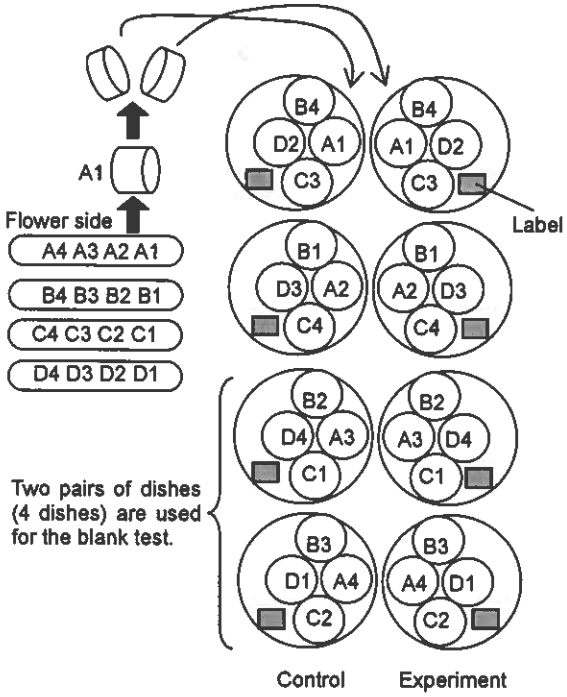

Fig. 3 Preparation of Sample Dishes in SCAT

Instructions: The following instructions were given verbally to the healer. Start of trials. *"These cucumber pieces have been recently made. There is more odor for fresh and vivid cucumber pieces. . Please do non-contact healing to try to increase the vitality of the cucumber pieces and their odor. Please concentrate on the experimental pieces just in front of you. Do not pay attention to other pieces. Fifteen minutes after the start, a sign will be given to you. However, please make an effort to do non-contact healing for a full 30 minutes."*
After 15 min. *"Fifteen minutes have passed. Please continue to do non-contact healing to try to increase the vitality of the cucumber pieces and to increase their odor."*

Procedure: Before experiments, the healer was met at a reception room and the healer signed a document of agreement after that Experimenter MY explained the present study to her,. At the same time, in Room B, Experimenters HK and SK prepared the experimental and control dishes (48 dishes) for the 1st trial. After preparing the dishes, the experimenters brought 22 experimental sample dishes) into Room A and arranged them according to **Fig. 1**. All dishes, except E1 & E2, were covered with paper towels so that the subject never saw them. Control dishes and all dishes for the blank test were kept at Point C in Room B (26 dishes in total) (**Fig. 2**).

After dish preparation, the subject entered Room A and sat on a chair. HK gave her the instructions, and then all experimenters left the room. After 15 min, MY entered Room A and gave a sign to the healer. Then he went out again. One healing trial was 30 min (**Fig. 4**). The whole process of the trial was monitored and recorded by a video system. Simultaneously, in Room B, HK and SK made 48 dishes for the 2nd trial. Dishes for the 2nd trial were marked by labels of a different color from the 1st trial.

Fig. 4 W003 during a Healing Trial
Petri dishes for potential measurements were covered by papers.

After the 1st trial, the subject was taken from Room A to wait in the reception room until the next trial. The experimenters collected all the dishes and kept them at Point C in Room B. Next, they brought sample dishes (22 dishes) for the 2nd trial into Room A, and set them in the same way as for the 1st trial. 26 dishes were kept at Point C in Room B.

The subject was brought to Room A again after 15 min, and she did non-contact healing for 30 min the same as in the 1st trial.

After the subject had finished the trials and left the Institute, the experimenters brought the sample and control dishes (96 dishes) and plastic containers into Room A. The lids of the Petri dishes were removed one by one and each dish was put into a separate container which was then sealed and placed on a shelf (**Fig. 5**). The front of the shelves was covered with a thick cloth to avoid winds from an air conditioner.

Fig. 5 Gas Containers Stored on Shelves

Containers were kept at room temperature (24 °C) for 24 h. For the gas measurements, the containers were separated into groups as front/back, left/right and oblique/SCAT groups, and the three experimenters (SK, OT and HK) measured the gases of containers in those groups. After attaching activated carbon filters to the inlets of containers (**Fig. 6**), each experimenter measured pairs of experimental and control containers for all data collection points. Pairs of gas-measuring detector tubes (141L, Lot No. 00437), prepared in advance[17,18], were used. 100 mL samples of gas were taken 3 times (totally 300 mL) from each container, and those values were recorded.

For gas measurements of the 2nd trial, the same experimenter measured the same group of containers as in the 1st trial. System biases of gas measurements were cancelled by exchanging the places of experimental and control containers in the gas measuring system (**Fig. 6**).

Gas measuring operations took 140 min for 2 trials (total of 96 containers).

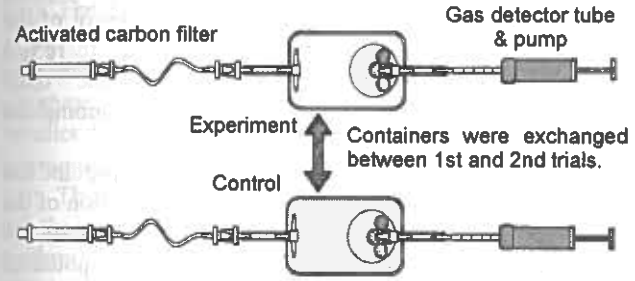

Fig. 6 Gas Measuring Operation

3. Results

3-1. Healing Test

Table 1 shows calibrated J values. Average J value of the healing test was -0.119, and it meant that healing decreased gas amount. There was a significant difference between average J values of the healing test and the simultaneous blank test ($p = 0.015$, t-test, two tails).

Table 1 Calibrated J Values

	Healing	Blank
1st trial	-0.161	-0.029
	-0.102	0.029
2nd trial	-0.033	-0.006
	-0.181	0.006
Average	-0.119	0.000
SD	0.067	0.024
p (two tails)	0.015	

3-2. Potential Measurements

Table 2 and **Fig. 7** show average J values of each data point. The potential was symmetric in the left-rightward direction (the subject as the center). Also, the potential was almost symmetric in the front-backward direction, but it differed from that of the left-rightward direction. It was considered that the potential had an anisotropy corresponding to the direction of the healer's body. For both directions, the potential was not similar to the Coulomb potential.

Table 2 J values at Data Points

	1st	2nd	Average		1st	2nd	Average
F1	-0.164	0.201	0.018	R1	0.059	-0.027	0.016
F2	-0.223	0.051	-0.086	R2	0.110	0.113	0.112
F3	0.036	0.094	0.065	R3	-0.218	0.127	-0.045
F4	0.024	0.149	0.086	R4	0.000	0.025	0.013
B1	-0.036	0.147	0.055	L1	-0.072	0.190	0.059
B2	-0.252	-0.019	-0.136	L2	0.028	0.288	0.158
B3	0.000	-0.047	-0.023	L3	0.000	0.000	0.000
B4	-0.145	-0.045	-0.095	L4	-0.072	0.093	0.010
RF	0.012	-0.169	-0.078	RB	0.000	0.072	0.036
LF	-0.118	-0.021	-0.069	LB	0.069	0.047	0.058

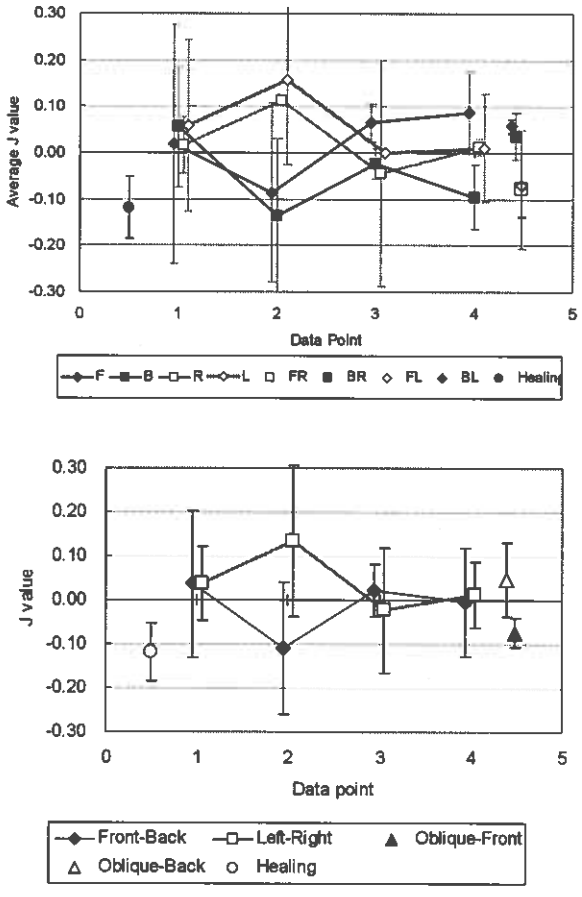

Fig. 7 Average J values

Upper: Data of each series (n=2) and healing data (n=4).
Lower: Average of front-back, left-right, oblique-front and oblique-back. All data points are n=4.
Error bars are SDs. Low number data points were nearby the subject. Intervals of data points were 50 cm. Oblique points are plotted at calculated distant points.

4. Discussion

4-1. Spatial Distribution of Potential

In the present study, the 4th points of each direction and the 4 oblique points were near lab fixtures or equipment because of the size of the room. So, there was a possibility that these 8 data were influenced by the room circumstances. Based on this possibility, the authors assumed a spatial distribution of potential (**Fig. 8**) with the condition that the original potential was symmetric in both front-back and left-right directions. It was considered that there was a potential area, with a radius of about 2 m, in the X-Y plane around the healer. Moreover, it was expected that this potential can be calculated from fundamental properties in the future.

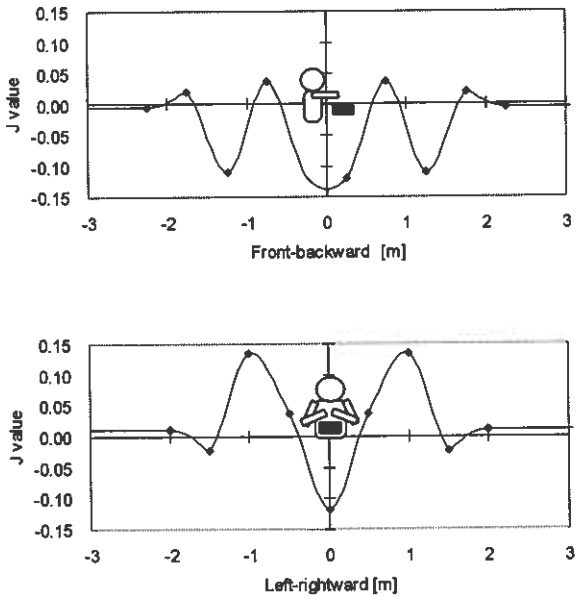

Fig. 8 Estimated Spatial Distribution of Potential (Averaging for 60 min)

After averaging front and backward data (or right and leftward data), they were plotted symmetrically and connected with spline curves. The zero point of front-backward data is shifted to the center between the healer and experimental dishes of the healing test.

There is no study to measure a spatial distribution of potential around a healer except the present study. The present study has been the first challenge for the authors. Therefore they could not forecast anything and did not have firm belief of success of their experiments. Of course, further studies are needed, for example, increase of number of data collection points; measurements of vertical direction.

Here, the authors try to discuss various possibilities ambitiously although it is uncertain whether these possibilities are limited on W003 or not.

4.1.1 Interaction with Circumstance The potential area spreads with a radius of about 2 m around a healer. All things within the potential area can interact with the healer possibly. In other words, there is a possibility that an apparatus interacts with healing effects if it is set at a specific place in an experimental room.

4.1.2 Frontal Polar Point There is a "polar" point (p-point) at about 1 m distance in front of the healer. There is a possibility that a healer give effects to a client at about 1 m distance in front of her if she do self-healing or do healing for a target at several cm distance in front of her.

4.1.3 Control of Position of P-Point Healers may be able to control the position of the frontal p-point. Hasted[24] reported that; psychics (metal benders) tried to give their power to strain gauges (arranged at about 10 cm intervals) from about several meters away, and then synchronized signals were observed from strain gauges. Thus, psychics can give anomalous effects on the place several meters away. It may relate to the control of the position of the frontal p-point. In other words, there is a possibility that psychics move the position of the frontal p-point to a distant place and then cause anomalous phenomena there.

Furthermore, the existence of the back p-point has not been known until the present day. The position of the back p-point may also be changed according to the frontal p-point if geometrical symmetry of the potential distribution is conserved, although details are uncertain yet.

4.1.4 Roles of P-point and Central Point Ogawa and Sasaki[25] reported that they tested thoughtography against a photo sensor in a dark case and observed anomalous signals with 100 Hz signals which were presumed as flicker of room light. Moreover, researchers of Fudan University[26,27] (Shanghai, China), reported that they wrote color-letters on a transparent sheet as clairvoyance targets, and piled the sheet with color filters and a photo printing-paper, then sealed them. When clairvoyance was succeeded, the photo printing-paper was sensitized as if it irradiated with room light. And when the whole process of the experiment was conducted in a darkroom, sensitization was not observed even if clairvoyance was succeeded. Moreover, they also reported that similar phenomena were observed in tests of psychokinesis.

If the p-point and the central point (place of a healer) have important roles essentially in phenomena of clairvoyance and psychokinesis, above studies can be interpreted as that circumstance around a healer can influence to the p-point and that information is transferred from the p-point to the central point.

4.1.5 Anisotropy In healing tests with authors'

biophoton method, a control sample dish is set at 3 m distance in left-side of a healer usually, and there is few case that the control dish has been set in front of a healer. Exceptionally, healer M005 (male, 39 y), who claimed to be able to emit ki towards a far place, was tested on condition that a control dish was set at 3 m distance in front of him. He did non-contact healing for an experimental sample dish set at 15 cm in front of him, and showed J = 0.044 (n = 4) which was nearly equal to zero. However, when he changed his body's direction to slant direction like that ki never reach to the control dish, he showed a large J value (J = 0.174, n = 8). The authors considered that it was caused by his healing ways at that time. However, it may have been a typical occurrence caused by potential anisotropy.

4.1.6 Reverse Areas of Potential We have not known the existence of reverse areas of potential in the right-left direction, except the present study. And many issues are uncertain yet, for example, is it a general phenomenon or a characteristic phenomenon of W003?

4-2. Healing Test

The healer was given instructions to increase the odor of the cucumber pieces (to increase gas concentration), but in fact, healing effects acted to decrease odor. Moreover, the absolute value of J was smaller than the J value (about J = 0.3) in the authors' previous experiment[17].

There is a possibility that W003 missed the control of the direction of healing effects because she was unfamiliar with cucumber tests. Usually, healers can obtain visual and verbal feedback information from their clients in their healing practices. Therefore they can adjust their healing ways based on feedback information. However, in the cucumber tests, it is difficult to obtain feedback information from cucumber pieces and healers sometimes miss the control of the direction of healing effects even if they are veterans[14]. In the present study, such miscontrolling occurred possibly.

W003 did not feel comfortable at the experimental room and her elder sister (W004) was absent at the present experiment. These are considered as reasons of smaller J value. In the pervious experiment[17], W004 sat next to her and W004 did healing simultaneously with W003. W004 is also a strong psychic[17,20-23], and it is said that W003 has a tendency to show good results if her elder sister W004 does experiments together with her. One of reasons of the present results may be because the present test was done by W003 alone.

5. Conclusion

Results obtained by a multiple-point measurement with the authors' gas measurement method suggested that a specific spatial distribution of potential, not a Coulomb potential, was generated around a healer, and that the potential had anisotropy between front-backward and left-rightward directions of the healer.

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