

Exploratory Studies of External Qi in China

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Abstract: This paper briefly reviews five different categories of major studies on external Qi (EQ) that were performed in China: physical detectors, chemical dynamics methods, biological detectors, life-sensors detectors, and detectors using human body. Here, the focus is on the pros and cons of each detector. The extant literature suggests that some form of bio-information (about which we know very little) plays a critical role in the effect of EQ. From physical detector to human body detector, the energy sensitivity decreases, while the bio-information sensitivity increases. Future studies should use more biological or life detectors to increase our understanding of the bio-information within Qigong.

Keyword: Qigong, external qi, wai qi, biofield, subtle energy, measurement, bio-information.

1. Introduction

Scientists have long been interested in measuring external qi (wai qi), or the out-of-body biofield effect, during qigong healing and have produced a large body of literature in this area during the past two decades. Because most scientists are interested in measuring external qi (EQ) and EQ transmission mechanisms, a review of the exploratory studies of EQ effects performed in China should help to eliminate repeating already verified instances of EQ, and to increase the range and efficacy of future studies.

This is an overview with a brief analysis instead of a full-scale review because, 1) the complete body of relevant literature is too voluminous to consider each study here; 2) we consider some unpublished studies; and 3) unlike the usual literature review that presents a summary of study methods, results, and rationale, this paper emphasizes the justification of the research designs and the reliability of the findings.

This paper briefly reviews five different categories of major studies on external qi (EQ) that were performed in China the past 20 years: 1) physical signal detectors;

2) chemical dynamic methods; 3) detectors using biological materials; 4) detectors using life sensor; and 5) detectors using human body. The focus is on discussions of the pros and cons of each detector based on the related studies.

2. Origin of Exploratory Studies of EQ

Exploratory studies on EQ started in a specific historical period in China. By the end of the 1970s, China awoke from the nightmare of the Cultural Revolution (1966-76), during which period qigong was considered “pseudo-science” or “idealism,” and, as such, was a forbidden practice. Since 1978, many scientists and practitioners hoped to rebuild the use of qigong as an effective healing method. They tried to use advanced scientific measurements and technology to prove that qigong is an objective life phenomenon and measurable process and is neither “idealism” nor purely dependent upon psychological suggestion. Others wanted to prove that EQ was purely dependent upon psychological effects. Interestingly, their studies resulted in convincing them that EQ is an objective life phenomenon.

More than 500 research papers exploring the effects of EQ have been published or presented in China. Some of them might not have actually measured the effects of EQ due to the multiple definitions that are used by researchers. In the 1980s, the Chinese Society of Qigong Science used the following definition for “external qi” in their documentation and research projects: “*The distant and directional effects produced by well-trained qigong practitioner under the qigong state.*”¹⁾ This definition specifies three major characteristics of EQ: 1) EQ exists only when a well-trained qigong practitioner enters into a qigong state (it does not exist among ordinary people or in an ordinary state); 2) it can travel a distance from the practitioner; and 3) it is directional and can be applied to a specific target far away, while not affecting the nearby objects where the intention is not focused. Although this is an imperfect definition, we have used it as the criteria for selecting relevant EQ studies for discussion in this paper.

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3. Major Detectors in Measuring EQ

1) Physical Signal Detectors

Physical signal detectors are the primary methods that most researchers have used from the beginning as they fit into the traditional energy model. Many primary researchers have tried to measure the effect of EQ in terms of its physical aspects, such as: sound²⁾, light^{3,4)}, electricity⁵⁾, heat⁶⁾, magnetism⁷⁾, radiation or Gamma ray⁸⁾. Early researchers used whatever equipment they could access to measure EQ, and found various and complicated physical signals emitting from EQ.

To verify the existence of EQ, the physical signal detectors are completely “qualified,” and sometimes very convincing. However, there are many problems with these physical detectors since they only touch the outer physical part of the unknown biological energy and not its essence. Consider far-infrared measurements, it is very easy to misunderstand the nature of qi with far-infrared radiation. Far infrared may just be a secondary signal or a side effect of EQ, since its intensity is just in the magnitude of μw , and could not, by itself, produce the healing results observed. There are other misleading possible conclusions from this type of detector. For instance, quite often some infrasonic sound (9-13 Hz) was detected during qi healing; but this is just an accompanied response when a practitioner concentrates, not the effect of EQ itself. Ordinary people may also produce this type of signal, although not as strongly as the qigong practitioner, and, more importantly, it is not directional according to the emitter’s intention but spans outward in all directions. The specificity of physical detectors is very poor. A slightly wrong measurement can easily lead to an erroneous conclusion. For example, in an early experiment, Gu claimed that she found that qigong could produce a “flow of charged particles”³⁾ when a supersensitive voltage detector was used. Although this kind of detector is mainly used for micro-potential measurement, it is also very sensitive to heat. When they put a layer of grease on the skin of the qigong master, they were unable to measure any physical signals. The signal was recorded again when they used a Ge micro-pressure detector. Another problem is that the more complicated or more sensitive the equipment used to detect weak physical signals, the more likely the equipment will experience interference from the EQ of the qigong practitioner; thereby increasing the chances of an error in the related conclusion.

2) Chemical Dynamic Methods

By the 1980s, researchers noticed that the presence of EQ could affect the dynamic process of some chemical reactions, and accelerate the reaction process. Using the basic principles of chemical reactions, researchers designed some chemical detectors to explore the pres-

ence of EQ. Two well-known chemical reactions that have been tested for this purpose include the reaction of Hexane and Bromine which under exposure to EQ produce bromized hexane and hydrogen bromine⁹⁾; and the accelerated reaction of hydrogen peroxide decomposing into water and oxygen when treated with EQ.¹¹⁾

Undoubtedly there are more chemical reactions that can be used to detect the effects of EQ. This method can easily and uniquely identify the presence of a bio-energy field as separate from any psychological effects. However, these reactions usually cannot tell much about the mechanism or the essence of EQ, or how exposure to EQ has changed the reaction process.

3) Detectors of Biological Materials

Since biological material, independent cells (*in vitro*) and tissues are assumed to possess qi (vital energy) themselves and since they are especially sensitive to EQ, the concept of a biological detector has existed for long. In the early EQ studies, it was very awkward for both the researcher and the practitioner to work with lifeless physical signal detectors because the practitioner could not easily perceive these detectors. Master Zhao Wei, one of the early participants in this kind of research, told us, “It’s very difficult to communicate (have a dialogue) with the physical sensor” when he tried to send qi to the physical sensors because he found it difficult to perceive the target. He felt that when his qi reached his target two meters away, it seemed to “slip” away. In contrast, with biological material it was much easier to establish a “dialogue” between the qigong master and the sensor or detector. Although the reasons for this “dialogue” phenomenon still needs further exploration, it provides a new idea for the design of bio-detector studies for researchers to use to verify the existence of EQ.

In fact, existing reports show that biological detectors produce far superior results than physical detectors. Xu and Zhao of the High Energy Physics Institute of Shanghai used tree leaves to successfully detect the microelectronics of EQ¹²⁾. Chu DY of Peking University reported significant effects of EQ on the change of conformation in various bio-molecular materials¹³⁾. Chen YF of the Shanghai Academy of Chinese Medicine revealed the effects of EQ on liver cancer cell (BEL-7402) and lung cancer cells (SPC-A)^{14, 15)}. Zhou et al.¹⁶⁾ discovered the effect of EQ on the cells of living organisms. Cheng et al.¹⁷⁾ reported the effect of EQ on the blood plasma eAMP. Guo¹⁸⁾ reported the significant effect of EQ on the structure and pharmaceutical characteristics of Vitamin C. Yan et al.¹⁹⁾ found that EQ could alter the phase behavior of dipalmitoyl phosphatidyl choline (DPPC) liposomes and enable the growth of Fab protein crystals. Feng et al.²⁰⁾ reported the significant effects of EQ on the microstructure of E-coli bacteria and tumor cells in mice. Yin et al.²¹⁾ reported the inhibitory effect of EQ on the growth of hepatitis B virus. Zhang et al.²²⁾

at the Chinese Academy of Medical Science uncovered the inhibitory effect of EQ on the growth of human liver cancer cells. Other findings from studies using biodetectors are too numerous to list individually in this review. All of these studies demonstrate the superiority, simplicity, practicality, accuracy, and uniqueness of using biological detectors as a means to measure EQ. Moreover, the effects of EQ to significantly accelerate the germination and growth of various plant seeds, include rice, wheat, pea, bean, peanut, flower and many others,^{16, 23-27)} have been reported by many researchers. This raises a new challenge to, and offers a new opportunity for, bio-engineering of plants.

A new breakthrough by Feng et al.²⁸⁾ reported the possible bi-directional effects of qigong on the growth of bacteria (*E. coli*) -- inhibitor or accelerator -- depending upon the intention of qigong practitioner. When the intention of qigong master was to destroy the bacteria, the inhibitory rate in comparison with the control group ranged from 45% to 91%. Under the same conditions, when the qigong practitioner's intention was to accelerate growth, the rate of bacterial growth in the qigong group was 2.3 to 6.9 times faster than in the control group. After Feng's report, it was realized that EQ, unlike physical material, does not necessarily have the same characteristics at all times. Since it is possible that EQ varies with human intention, some researchers then designed research based on the possibility of using EQ to change the characteristics of antibiotics or select certain desired qualities of the antibacterial products by use of human intention. Among this type of study, the one performed in cooperation between Gu of the Chinese Pharmaceutical University (Nanjing) and the North China Pharmaceutical Corp has had some positive results²⁹⁾. Gu used EQ and intention to select the proper bacteria producing antibiotics "directionally", and achieved wide application and high economic effects. Tsinghua University, North China Pharmaceutical Company and the Institute of Microbiology in Chinese Academy of Science have jointly conducted a series of studies using qigong to help process industrial virus or bacteria. Their preliminary findings have been positive and they have been used in pharmaceutical production³⁰⁾.

In short, much research has been conducted to explore the effects of EQ on bacteria, cancer cells and other biological materials. Most of them had positive findings, even though not all of them had a sound design with appropriate controls and only few of them were implemented on a double-blind basis. With detectors of biological materials it is easier for researchers to confirm the uniqueness and specificity of EQ. Meanwhile, it introduces the issue of bi-directional effect and opens a new door to explore the potential mechanism of qigong with the possibility of measuring both energy and bio-information.

4) Detectors Using Living Sensor

Based on what has been said so far, it is logical to consider microorganisms and small animals as ideal sensors for detecting EQ. Due to skepticism about the therapeutic effects of qigong (attributing the effects to psychological suggestion), researchers started to shift the focus of qigong studies to living organisms that closely resemble the bio-characteristics of human. It seems that almost all conventional animal or biological models used for research can become suitable for use as biological sensors for detecting EQ. For example, after the study of nose cancer cells under the treatment of qigong³¹⁾, Chen et al. studied the inhibitory effect of EQ on liver cancer in nude mice and achieved remarkable results.³²⁾ This study that used a life detector and qigong to treat infected mice has a different implication because, instead of cell samples, they used the whole body of a living animal (*in vivo*). Chen's study showed a significant inhibitory effect of EQ on liver cancer. Using the same principle of life detector, Kong et al.³³⁾ uncovered the effects of EQ on prolonging the lives of laboratory flies, and Zhang et al.³⁴⁾ reported the effects of EQ exposure on the rapid recovery of fish after having been frozen for 10 minutes. As cited above, there are many successes in using infected mice or laboratory animals as life sensors to detect the qi emitted by qigong masters. In addition, there also has been some significant progress and positive preliminary results utilizing the application of qigong in "animal model of hypertension" and "animal model of diabetes."²⁰⁾

Along with mice and rats, other frequently used laboratory animals like flies,³³⁾ rabbits,³⁵⁾ fish,³⁴⁾ dogs,³⁶⁾ toads³⁷⁾ and pigs³⁸⁾ were also used to detect the therapeutic effects of EQ. Most animal studies were designed to respond the criticism that the therapeutic effects of qigong are mainly psychological or produced through the therapist's suggestion. While these studies did not do much to reveal the mechanism of qigong therapy, they did confirm the existence of the therapeutic effect of qi and they have raised the issue that this kind of healing cannot be completely explained by the physical signals detected in the early studies of EQ.

5) Measuring Effect of EQ on Human Bodies

External qigong has been used to treat many kinds of diseases in human patients, and the results have been reported extensively in the literature^{8,11,39,40)}. Among the frequently reported and well-documented successes are: the complete remission of degenerated disc diseases such as protrusion of lumbar intervertebral and rheumatoid arthritis; complete recovery from uterine myoma, cataracts, asthma, and shoulder peripheral neuritis and significant improvement of fractures, cardiovascular diseases, irregular pulse, and hemi-paralysis. (literature omitted due to volume). Although most publications were based on observational studies, instead of double blind clinical tri-

als, many actually had a control group. One of the characteristics of these diseases is that western medicine considers all of them to be incurable. Because of this, patients who use conventional therapy become the control group. Although we cannot eliminate the placebo effect completely, the reported effectiveness has far exceeded any recorded placebo effect. While it is still questionable as to how much of the effect was due to EQ and how much due to expectation or psychological suggestion, in general, every patient being healed by EQ provided researchers with an opportunity to study the nature and effects of qigong. Unfortunately, the literature does not present many well-controlled studies.

Study of EQ effects on the human body is complicated since the subject who accepts the emitted qi also has qi (vital energy), and, there are psychological expectations. Therefore, using a human body as the detector of EQ usually lacks uniqueness or specificity, and includes other possible alternative explanations. On one hand, a human body may be the best detector for the effects of EQ as it can receive all of the information and energy from the qigong master. On the other hand, this detector may be the most controversial since human subjects present a number of alternative explanations that are hard to separate out, such as placebo effects and psychological expectations.

4. Discussion

The extant literature seems to suggest that some form of bio-information plays a critical role in the effect or characteristics of EQ (about which we know very little). The quality and appropriateness of different detectors for EQ evaluation can be listed in the following ascending order: physical signal detectors, chemical reaction sensors, biological material detector, life detector and the human body. As we move from physical signal detector to human body detector, the energy sensitivity level may decrease while the bio-information sensitivity level increases. The physical signal detector may be most sensitive to the energy signal, but not as effective in sensing the assumed bio-information contained in the EQ. While human body detectors may not be sensitive to weak physical signals, they are much more sensitive to EQ bio-information and the benefits are more comprehensive.

As in other scientific fields, many EQ studies with failed results never have been published. However, these failures do not deny the successful results of other studies. It is understood that the variables in EQ studies are many starting with the quality of the qigong master/practitioner, and that even a good qigong master cannot emit qi successfully every time. Many successful studies support the notion that there is some form of biofield effect from the human body.

Most scientists have agreed that EQ may consist of matter, energy, and information, and that it is easy to measure the objective existence of external qi, but it is much harder to measure the essence of qi or to explain the mechanism of qigong therapy. Studies suggest that bio-information and the power of intention are involved in the qi emission process. Unfortunately, we have little knowledge of this aspect of external qi. If we define EQ based on the findings of studies that focus on external effects, we may miss the real essence of qi, limit our understanding and options, and mislead the public. Therefore, the focus of scientific research on qigong should not be limited only to what EQ is or how qigong works. Once the existence of qi or the biofield effect is confirmed, the focus of qigong research should be on understanding the healing process of both internal qigong (self-practice) and external qi emission. The understanding of qigong therapy and the applications of qigong and its health benefits will generate new and exciting opportunities for modern science and medicine.

All these studies, to differing degrees, have confirmed the objective existence of EQ or bio-field effect. We recommend that future studies in this area should not focus on physical or chemical detectors, but should use more biological or life detectors to increase our understanding of the bio-information contained within qigong. It seems that physical and chemical detectors measured only the carriers of qi, not EQ itself. EQ with the same physical characteristics may produce completely different results depending upon the intention of the practitioner during the qi emission. Because we are unable to determine the exact mechanism of EQ with our existing equipment and knowledge, and qigong is mainly an internal self-training method or process, the primary objective of research in EQ should be directed towards "catching" bio-information and understanding the major benefits of qigong; helping the general public to accept the existence of such biofield effects, and learn how we can all benefit from this ancient therapy.

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