Abstract

Experimental Evidence for the Existence of an "Energetic" Component in Psychic Healing

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For centuries the established belief has been that so-called "psychic healing" has involved some form of "energy" that is transmitted from the healer to the healee. While there is scant experimental evidence for this healing agent what does exist indicates that "something" of a non-electromagnetic nature is transmissible and absorbable from the healer. In the 20th Century the scientist, Wilhelm Reich discovered a form of "energy" that existed in man and the atmosphere and that could be concentrated is an apparently energetically passive chamber made of alternating non-metallic and metallic materials. Reich demonstrated that this device, the "orgone energy accumulator" or ORAC could prolong the lives of experimental cancer mice. Experiments conducted by his students after Reich's death confirmed his findings.

Independently a healer, Bill Bengston, experimenting with a similar strain of cancer mice, found that the cancer tumor was anomalously sequestered from the body through an intense inflammatory reaction in response to the healing process. We found that this process was essentially identical to the form of reaction by the mice to exposure to the ORAC. Sue Benford, commenting on Bengston's experiments described the process of "radiation hormesis" that produces similar healing reactions. Benford also describes anomalous changes in gamma radiation in the vicinity of the hands of healer working by the laying-on-of-hands that facilitates the hormetic reaction. We hypothesize that a principle at work that is common to both healing by the laying-on-of-hands and the ORAC is primarily orgone energy acting secondarily through hormesis.

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Introduction

So-called "psychic healing" has been part of the world's cultures for many centuries, but only recently has it become the object of scientific scrutiny. There is ample evidence that it can be effected locally and non-locally¹and that it takes place through one or more of the following modalities: "energy" and/or "information" transfer from the healer to the healee, and a state of "resonance" between the healer and healee. Most notable among experimentalists in this genre of investigation in the 18th Century were Antoine Mesmer who claimed that the healing agent was a "magnetic fluid" and the nobelist , Franz von Reichenbach, discoverer of creosote, who, on the basis of many clinical and experimental studies postulated a healing agency that he named "od".

Most often healers believe that some form of energy transfer takes place. "...one person (the healer) acts as a channel to transfer various "frequencies" of energy to another person (the client) for the purpose of rebalancing chakras (stabilizing the 'energy field'), thereby facilitating stress reduction, regeneration of tissues, and healing". (Rosalyn Bruyere quoted by the physicist Russell Targ and the healer, Jane Katra.²) Targ and Katra believe, with Janet Quinn, a practitioner of therapeutic touch, that an essential aspect of both so-called "energy healing" and psychic healing is actually the transfer or access of healing "information" through mind-to-mind connections. However, practitioners of therapeutic touch, also believe that they "...utilize a shift in consciousness to, in some way, facilitate a'repatterning of the recipient's energy field through a process of resonance, rather than an energy exchange or transfer". "

As to the nature of the alleged healing energies Chinese scientists claim to have detected a wide spectrum of effects from Chi Gong masters generating external "chi". They include infrared radiation, static electricity, changes in magnetic fields, light waves, neutrons, beta rays, and two-way radiation of electromagnetic energy.⁴ .Other investigators have invoked magnetic or "paramagnetic" field effects as the causal mechanism in healing while still others have found experimental evidence indicating that magnetism could not possibly be the agency.⁵ Bernard Grad, a biologist from McGill University and a pioneer in the experimental investigation of psychic healing conducted a controlled study of the effect of the healer, Oscar Estabany, holding mice with thyroid goiters induced by deficient diets and thioracil. The mice in the healer-held group showed a significantly slower rate of goiter development than mice held by non-healers. Similar experiment using healer-charged cotton and wool cuttings showed similar anomalous

¹Benor, D. 1992. *Healing Research, Vol. 1*. Munich: Helix Verlag GmbH.

²Targ, R., and J. Katra. 1998. *Miracles of Mind*, 239. Novato, CA: New World Library.

³Targ, and Katra, *Miracles of Mind*, 241.

⁴Targ, and Katra, *Miracles of Mind*, 246.

⁵Gerber, R. 1988. Vibrational Medicine. Santa Fe: Bear.

changes. The condition remained, but the goiters grew more slowly. In wound healing experiments with mice the healer-treated mice showed a significantly more rapid rate of healing than controls. Grad also studied the effects of healer-treated saline on barley seeds demonstrating a significant increase in chlorophyll content, size, and yield. Clearly, whatever agency was involved in the healing could be transmitted to organic substances and thence to the living objects under investigation.

Justa Smith, expanding upon the work of Grad and Miller compared the effects of magnetic fields and the healer, Estabany, on enzyme reactions in vitro, finding that both affected the enzymes. She could not, however, find anomalous changes in magnetic fields around the hands of the healers. Further studies with enzymes, however, showed that the changes in target cells was always in a direction of greater health when exposed to healers, but magnetic fields could only produce an increase in enzyme activity, which in some cases could be deleterious to the cells. Studies with damaged enzymes "treated" by Estabany showed that the healer had repaired the damaged enzymes. The Green, et al., in their study of healing phenomena generated by practitioners of non-contact therapeutic touch (NCTT) working from within a room with copper walls found anomalously high voltages being emitted by the healers when intending healing on targets outside the room. The data suggested surges of voltage in oscillation of charge in the body rather than a change in quantity of charge. Charge seemed to be built up then emitted, but without a net change in body charge. The NCTT therapists felt that "therapeutic energy" is something that comes from the "outside", passes through their body then goes to the patient. Anomalously high voltage was also correlated with healer's intention to heal rather than with more passive contemplation.⁸

Larry Dossey, however, questions whether the term "energy" actually applies to healing phenomena eschewing redefinitions of the term, including "subtle energy", "vibrations", and "vibrational medicine". He envisions that, "...entirely new modes of images, modes of thought and vocabularies will be required to encompass it - a new paradigm of healing and consciousness that is radically different from anything that has gone before." He quotes Robert Jahn and Brenda Dunne, who, reflecting upon their many years of research in mind/matter interactions and precognitive viewing, stated, "While there have been many attempts to interpret consciousness-related anomalous phenomena in terms of some physical form of information transmission, virtually all of these have explicitly or implicitly presumed a space/time reference matrix. The demonstration of negligible attenuation of the empirical effects with distance, along with their precognitive and retrocognitive capacities, would seem to call this presumption into question, and specifically to preclude their attribution to any known form of field radiation, be it electromagnetic, geophysical, or even subtler physical vectors. Rather, some more radical proposition seems unavoidable (emphasis added)" 10

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⁶Grad, B. 1965. Some Biological Effects of the "Laying on of Hands": A Review of Experiments with Animals and Plants. *Journal of the American Society for Psychical Research* 49(2), April:95–129.

⁷Smith, J. 1972. Paranormal Effects on Enzyme Activity. *Human Dimensions* 1:15–19.

⁸Green, E., et al. 1991. Anomalous Electrostatic Phenomena in Exceptional Subjects. *Subtle Energies* 2(3):59–94.

⁹Dossey, L. 1992. But is it Energy? Reflections on Consciousness, Healing, and the New Paradigm. *Subtle Energies* 3(3):69.

¹⁰Dunne, B. J., and R. G. Jahn. 1992. Experiments in Remote Human/Machine Interaction. *Journal of Scientific Exploration* 6(4):331.

In the 20th Century Wilhelm Reich described experiments of both a biophysical and physical nature that leant credence to his conclusion that there existed in living and non-living nature a primary force or "energy", "orgone energy" that was the fundamental force for all growth and development. Reich and his students also found that through a device, the orgone energy accumulator, that this energy could accelerate healing in a variety of pathological conditions. In what follows we review Reich's evidence for his claims in the treatment of cancer in mice and note the similarity in the process of healing using an orgone accumulator and healing induced by so-called psychic means.

Reich's Discovery of organe energy

In 1942 Wilhelm Reich first reported his experiments on the treatment of mice with spontaneous mammary tumors with an "orgone energy accumulator" (ORAC). The ORAC was, at the time, one of the results of investigations first begun by Reich years earlier into the nature of what he called the "cancer biopathy". Through clinical investigation Reich had found that cancer was far more than the mass of aberrantly growing cells known as a tumor, but was a generalized process involving the entire organism: the tumor was but the most prominent physical manifestation of the cancer process. 11 Reich saw that common to all cancer patients, often at a very deep psychological level, was a process of many prior years of emotional "resignation", that is, a giving up on living life fully in the naturally aggressive and sexual way it was meant to be lived. Emotional resignation as a function in the psyche has as it counterpart biophysical changes, chronic contraction of the "bio-energy" system of the organism. This is sustained through chronic hypersympatheticotonia and a general lowering of bioenergy levels. When suffered for many years, often decades, this results in what Reich called "organismic biopathic shrinking." On a cellular level it is characterized by oxygen deprivation and shifts in nuclear/plasm ratios of critical ions. As Reich described it, "Biopathic shrinking is the continuation, in the realm of cell functioning, of chronic characterological resignation".

In pursuing the riddle of cancer to the cellular level Reich found changes in cellular structure not heretofore described. Although cancer tissue had been exhaustively examined and described by light microscopy by the early 1940s, such examinations were made almost exclusively with tissue that had been fixed and stained. This permitted finer examination of details, but invariably produced distortions in structure and, most important, blocked perception of the living process. In his search for the energetic basis of emotions, Reich examined simple heated foodstuffs in boiling water utilizing the finest apochromatic, high-powered lenses available at that time. He found that all food products, no matter what their biochemical makeup, when cooked, rapidly disintegrated

¹¹ This is well demonstrated by Grad's experiments utilizing the ORAC in the treatment of Acute Lymphoblastic Leukemia in AKR mice. Grad found that while the ORAC could prevent the formation of lymphatic tumors in this strain of mice, survival, paradoxically, was not affected (Grad, B. The Accumulator Effect on Leukemia Mice, Journal of Orgonomy 1992, 26:2, 199-218) Therefore, it is not the tumor that kills the mouse in this disorder. Reich's studies on leukemia indicated that "t-bacilli", a viruslike infectious microorganism specific for cancer and leukemia, according to Reich, was the lethal agent (Reich, W. The Leukemia Problem: Approach. Orgone energy Bulletin, 3:2, 76-80).

into microscopic, bluish glimmering, pulsatile vesicles, which he called "bions". Grass left to decompose in water in the presence of sunlight also went through the same process, but in addition, the bions reorganized into protozoal forms. In a similar manner, proteinacious tissue that had been deprived of oxygen, nutrients, and bioenergy through chronic bio-emotional contraction went through a process of degeneration characterized by chronic inflammation then, ultimately, "bionous disintegration", and reorganization into (sometimes motile) protozoal-like forms. Reich also observed and cultured from cancer tissue extremely small, rapidly motile microorganisms of the order of 0.2 -0.5 microns in length, which he named "t-bacilli". When injected into mice t-bacilli caused cancerous tumors at the site of injection.

Reich found that inorganic substances also undergo bionous disintegration when subjected naturally to heat and/or pressure. But, presumably, because of the greater rigidity of their structures inorganic substances take far longer than organic substances to disintegrate in this way. The process, may however, be rapidly accelerated by subjecting the substance to high heat or pressure. This Reich was able to do in the laboratory subjecting soot, iron filings, and ocean sand to standard sources of heat and pressure. Iron filings, for example, can be heated to incandescence by a Bunson burner, then, utilizing sterile procedure, introduced into a standard liquid nutrient medium. When immediately viewed at high power under a microscope the filings will be noted to have changed in appearance from extremely angular and dense to, in some places, having softened, rounded edges, internal vesicles, and in the fluid medium, motile vesicles. Further observations over the next several days to weeks, utilizing sterile technique to transfer materials from nutrient medium to microscope slide, reveal a continuing softening of the edges of the filings and undulatory, organic-appearing, wave-like pulsations taking place at these edges. In time, still maintaining sterile technique, one can readily observe marked changes in the filings as they appear more and more organic to the observing eve. 313

In the course of the bion experiments the serendipitous heating and subsequent culturing of ocean sand on gel-like media yielded cultures that appeared to emit an intense radiation. According to Reich, sealed x-ray film fogged, metal equipment in the laboratory spontaneously developed a magnetic charge, skin exposed to the radiation became inflamed, and unusual luminations appeared in the darkened, basement laboratory. Reich consulted a radiation expert at the local Oslo hospital, but no known radiation could be found emanating from the bion cultures. The resolution of the nature of the radiation led Reich to the discovery of what he called "orgone energy" and the orgone energy accumulator.

A series of experiments involving the charging of an electroscope by contact with rubber that had been exposed to sunlight, bion cultures, or the skin revealed to Reich the identity of "sun energy", the radiation emitted by the cultures, and a postulated "life energy" emitted by the skin. Whatever the nature of this radiation it appeared to be

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¹²Aspects of this process are known in contemporary bio-medicine as "apoptosis". Note also, "Life without a cell membrane: regeneration of protoplasts from disintegrated cells of the marine algae Bryopsis plumose" by Kim, G.H., et al, Journal of Cell Science, 114, 2001:2009.

¹³When these observations are reported the issue of Brownian motion is always mentioned. Suffice it to say at this point that while Brownian motion as understood as a mechanical phenomenon may apply to a certain extent to the observed substances in Reich's bion experiments, a strictly mechanistic interpretation cannot explain the pulsatory, undulatory quality of the bionous vesicles observed in these preparations. Reich addressed this question at considerable length.³

present in the atmosphere where it could be absorbed and re-emitted by living things. Since the radiation was particularly absorbable by organic materials and Reich's research began with the clinical study of the function of the genital orgasm, he named it "organe energy".

One striking quality of orgone energy was its capacity to spontaneously luminate. Reich reported that in the darkened laboratory he (and others) could see bluegray vapors around organic materials and small, transient lightening-like "rays" in the atmosphere. In order to better visualize these phenomena Reich built an enclosure consisting of a glass front and walls of metal backed by wood. The idea was that the metal surface would reflect the radiation from the enclosed bion cultures and the wood would absorb it, the result being a concentration of the radiation within the enclosure. Reich reported that he was, indeed, better able to see the luminations, but to his surprise they remained even after removing the cultures. Washing down, airing out, and even building a new enclosure without the organic backing did not eliminate the light phenomena. Observations over several months in all kinds of atmospheric conditions revealed only subtle differences in the intensity of the light phenomena. Further observations of the night sky where the same phenomena were seen forced Reich to conclude that the radiation was present "everywhere" and could be concentrated in metal enclosures backed by non-metallic materials.. Reich called such an enclosure an "orgone energy accumulator" (ORAC)³ (Figure 1).

Studies with electroscopic charging of a variety of non-metallic and metallic materials led Reich to the conclusion that the radiation is rapidly attracted to and then repelled by metals, while it is absorbed by non-metals. Furthermore, by increasing the number of layers of metallic and non-materials the "charge" within the ORAC, as determined by the electroscope could be increased. This finding was supported by investigations of temperatures within the accumulator compared to temperatures of the outside air or a suitable control. Reich found that the temperature within the ORAC and in a chamber slightly above the top of the ORAC was always warmer than the temperature of the air around the ORAC or within or above a suitable control enclosure. The nature of the materials was also a factor: for biological experiments galvanized iron and steel wool seemed best for the metal layers, while various plastics and wool seemed best for the non-metallic material. As far as can be ascertained to date the size and shape of the ORAC appear to make little difference with respect to its ability to concentrate orgone energy from the atmosphere.⁵ In working with plants or animals, including humans, it is important that the ORAC be just a bit larger than the tested object, as, according to Reich, the ORAC functions by providing a state of mutual excitation between the organotic charge of the person or animal or plant and the already heightened organotic charge within the ORAC. There must be sufficient air through holes in the walls or doors and around the organism so that it is comfortable.

Reich published many articles and several books on the functioning of the ORAC and devices that permitted the objectification of orgone energy. Students of orgonomy have replicated many of his experiments and these have been published in Reich's Orgone Energy Bulletins, the American College of Orgonomy's Journal of Orgonomy, the Institute for Orgonomic Science's Annals, The Orgone Biophysical Research Laboratory's Pulse of the Planet, and other journals. 10,11

Reich's Experiments on Cancer

While Reich and others had found and anecdotally reported salutary effects experimentally treating a variety of illnesses with the ORAC 12-20 the only controlled biomedical studies of the effects of the ORAC were of the treatment of cancer in mice.

Prior to beginning his investigations of the effects of the ORAC on cancer, Reich had studied the effects of injecting cultures of strongly radiating bions obtained from ocean sand (sand packet, "SAPA", bions) into mice with mammary tumors. Some strikingly anomalous results were seen, such as rapid shrinkage of the tumor in some cases and an increase in life span of the treated animals. Invariably, however, all the mice died significantly more rapidly than control mice without cancer. Reich did find, however, that the therapeutically effective agent in the treatment was the blood of the mouse: the SAPA bions apparently charged the blood with life energy, which then attacked the cancer cells. A series of experiments involving the treatment of blood and serum with SAPA bions outside the animal, then injecting the treated solution into the mouse or rabbit showed a pronounced destructive effect on the tumor, but this method was not as effective as the direct injection of bions into the test animal.² On the basis of observations of the liver tissue of the treated and untreated mice, Reich noted that the elimination of the breakdown products of the tumor was critical to their recovery.² Of particular relevance to some of our own conclusions, below, was Reich's observation that the blood of cancer mice did not form specific antibodies against cancer cells. He explained this as due to the "orgone-weakness" of the blood in cancer.²

With the discovery of the ORAC Reich then studied the effects of subjecting mice with spontaneous mammary tumors to the radiation within an accumulator. Accumulators in experimental use at that time consisted of an inner wall of galvanized iron and an outer layer(s) of rock wool and steel wool with a fiberboard material such as celotex as the outer structural support. The mice were of a "Rockford" strain that spontaneously developed mammary tumors. The ORAC was compartmentalized so that each compartment held one or two mice. From a photograph of the ORAC it appears that it consisted of either an inner metal lining with a cover of fiberboard or celotex (single fold ORAC) or of the same construction, but with an additional middle layer of a mix of steel wool and rockwool. Treatment began one week after detection of the tumor and lasted 1/2 hour daily. Reich reports the day of death of treated and un-treated control mice. The results were striking. The treated mice lived significantly longer than the control mice. (Table 1, Experiment 1) (Figure 2).

Post-Reich Experimental Studies of the Effect of the ORAC on Cancer Mice

In a controlled variation of the same experiment, in 1973, we, at the Oranur Research Laboratory in Pa., transplanted nine C3H/HeJ female mice three months of age with mammary adenocarcinoma (C3HBA) tumor cells. By random selection four mice were then treated for 30 minutes daily with individual five-fold ORACs, beginning the day after transplantation. The ORAC was constructed of a rectangular outer shell of wood with large holes in the tops and sides to permit the absorption of orgone energy from the atmosphere into the next immediate layer of wool. The inner box was made of galvanized iron with a large slit to permit the animals to have air. Between the inner and outer boxes was four alternating layers of steel wool and wool. The 5 control mice were housed in

individual plastic boxes of the same dimensions as the metal interior of the ORAC during the time that the experimental mice were treated. In all other respects they were treated the same.²¹

The injected tumor cells, 'took' in all animals, although the initial appearance of the tumor in the treated mice was delayed compared to the initial appearance of the tumor in the control mice. The treated mice lived significantly longer than the control mice after transplantation (Table 1, Experiment 2) (Figure 2). Autopsy of the mice immediately after death demonstrated marked differences between the two groups: In the control mice, the bowel and peritoneum had undergone extensive putrefaction and dissolution (Figure 3), in the treated mice these organs were remarkably clean and intact (Figure 4). The tumors of the treated mice were in all cases one and one-half to two times larger than those of the controls, presumably because they lived longer, although there may be other reasons unknown at present. These large tumors showed a marked inflammatory reaction characterized by a thick, white exudate in the central tumor mass. In one case, this took the form of a large sterile abscess. Some of the tumors of the control mice displayed central necrosis, but none showed the gross inflammatory reaction seen in the treated mice. Both treated and control mice had bleeding ulcerations of the skin over the tumor mass. In the treated mice, however, bleeding while the animal was in the ORAC was so severe that it was the immediate cause of death of all the mice in this group except for one mouse that died by accident.

In a further variation of Reich's original experiment, we treated 4 C3H/HeJ adult female mice with spontaneous mammary tumors for 45-60 minutes daily with the same type ORAC as in Experiment 2. Treatment began within one week of the time that the tumor was clearly palpable. The 4 tumorous control mice were placed in a plastic box as in our first study. Selection of mice for each group was simply determined by alternately placing the mouse in either the treated or control group when the mouse first showed tumor. Tumor size was determined by the product of the radii of the longest length times the longest width. It was measured weekly. The treated mice lived significantly longer than the control mice (Table 1, Experiment 3) (Figure 2). We found that for the three weeks prior to the death of the first animal, the mean increase in tumor size for the control mice was 212% (S.D. of 83.4) compared to 89% (S.D. of 51.9%) for the treated mice. A t-test revealed a p = 0.02., a significantly smaller growth rate of the tumors of the treated mice compared to that of the control mice.

In two experiments, E.E. Trotta & E. Marer, in Brazil, treated 3 month old Swiss male mice with transplanted sarcoma 180 tumor. In the first study (Experiment 4a) the mice in the treated group were kept together in a 3-double layered ORAC for one hour per day, 6 days per week. In the second study (Experiment 4b) the treated mice were kept together in a single, double-layered ORAC with a cover of 5 double layers, 3 hours per day, six days a week. The untreated control mice were housed in identically dimensioned boxes of only non-metallic material during the treatment time of the treated mice. There were a total of 25 mice in the combined treatment groups and an equal number of mice in the control group. Treatment began within 24 hours after transplantation. The animals were observed daily and, after death, the vital organs of mice in Study 4b were removed and submitted for histopathological examination.

The investigators observed that the treated mice in both studies exhibited a state of hyperexcitability marked by increased spontaneous motor activity, exploratory

behavior, feeding, and social interactions, especially during the first two to three hours after treatment. This behavior was not seen in the control mice. Tumor development was similar in all groups during the first 21 days after transplantation. After this time it was noted that the treated animals lived longer than the controls (Table 1, Experiment 4) (Figure 2). The tumors of the treated mice developed a slowly developing hemorrhagic necrosis, disintegrating gradually but completely from their center to the periphery, leaving in their place an open wound. This took place 2-5 weeks before the death of the animal. Histopathological examination revealed hepatic vasculitis and diffuse glomerulonephritis in all animals although the reaction was much more evident in the treated mice. No signs of metastases were found in any animals.²³

Discussion

The data from the four experiments indicate that a container structured like an ORAC can significantly prolong the life of inbred mice with spontaneous and transplanted tumors. Since this effect is completely unexpected in terms of contemporary biophysics it behooves us to search for possible alternative mechanisms of action to obtain such a result.

According to Reich the structure of the ORAC permits a gradient of "orgone energy" in the atmosphere to be established from outside the ORAC to its interior. Reich found by experimentation that orgone energy is absorbed by the non-metallic surface of the ORAC, is then attracted and repelled from the adjacent metal, absorbed by the next inner layer of non-metal, and so on until it reaches the metal interior of the ORAC. Here the concentration of orgone is higher than that of the outside air. This understanding is supported by the evidence, presented above, of the anomalously higher temperature within and immediately above the ORAC as compared to ambient temperature or the temperature within a suitable control enclosure and by the anomalously slower rates of electroscopic discharge within the ORAC as compared to discharge in the outside air. According to Reich the presence of a living organism within the ORAC creates a state of mutual excitation between the energy field of the organism and the heightened energetic charge within the ORAC. The result is an energetic charging of the organism, especially of the blood erythrocytes. "The organotic charging of the erythrocytes has, simultaneously, two most important effects; expansion of the organism and development of the organisms's own defense reactions against the T-bacilli (specific infectious agent in cancer-RAB) intoxication.".2

This reaction was seen in our own studies and that of Trotta & Marer. In our first study we saw the much larger size of the tumors (due, in part, to increased vascularization), their tendency to readily bleed, and the markedly enhanced inflammatory reaction at the tumor site in the treated mice compared to the control mice.²⁴ Trotta and Marer remark upon the unexpected sequestration of the entire tumor mass due to an intense immune system reaction and the release of tumor necrotizing factor.²⁵ It is interesting that this kind of intense immune system reaction was seen so unequivocally in treated mice bearing transplanted tumors, but far less vigorously in mice with spontaneous tumors. It is possible that mice with transplanted tumors are, at least initially, capable of recognizing the transplant as a foreign organism and that the

orgonotic charging of the treated mice intensified the rejecting immune response. This interpretation is plausible in light of results obtained in a series of experiments we conducted treating mice with transplanted tumors in which we waited 9 days after transplantation before treatment was begun. This permitted the establishment of a tumor growth rate with which we could compare tumor growth and longevity between the treated and untreated mice. In this instance, however, the tumors of the treated mice grew much more rapidly than did those of the control mice, but there was no difference in longevity. This indicates that by the time ORAC treatment had begun the mice had accepted the tumor material as part of their organism. Supplying energy to the mice via the ORAC only adds to the amount of energy available to tumors, which are notorious for "sucking up" all energy available from the organism.

These studies were conducted some time ago and never published in main-stream publications. I was stimulated to review them and write this paper after reading a paper by Bengston and Krinsley on the effect of the "laying on of hands" on transplanted breast cancer in mice.²⁶ The pattern of healing was dramatic and in many respects similar to that obtained by Trotta & Marer. The authors describe experiments where they utilized a method of healing wherein one of them (Bengston), after undergoing rigorous training by a "psychic healer", treated mice with transplanted mammary tumors by placing his hands around the outside of the plastic cage containing the mice for 1 hour each day while applying the mental healing technique. The mice were C3J/HeJ, the same as used in our experiments. Control mice were kept in a separate laboratory in the same building. Their results were, to use their own words, "...totally beyond expectation. About 10 days into the procedure the experimental mice began to develop a 'blackened area' on their tumors... approximately 1 week later, the blackened areas' ulcerated' as if they had been split open. In some cases the ulceration grew extremely large then appeared to implode and the wound closed. The mice then lived their normal life span of approximately 2 years." The pattern of sequestration and rejection of the tumor indicated to the authors that the healing method apparently induced a strong immune system reaction in the treated mice. This concept was reinforced by the following: in an attempt at replication, one study revealed that attempts to get the transplant to "take" in mice that had remitted, failed completely, indicating that the mice were, "immune to the mammary adenocarcinoma".

Of great interest, and relevant to the possible mechanism of action of the ORAC and the healing methods utilized by Bengston, is information provided by Sue Benford in a letter to the editor of the Journal of Scientific Exploration in which she comments on Bengston & Krinsley's findings. Benford finds Bengston's results to be similar to those found in numerous experiments utilizing low dosage ionizing radiation on cancer in mice and humans. This effect is called "radiation hormesis". According to Benford, the hormetic effect can also be found to exist in the use of low dosage of drugs, hormones, vitamins, and essential minerals. In an extensive and scholarly review of the subject, J. Kauffman, referring to the work of J. Cuttler on the therapeutic uses of radiation hormesis, writes, "Radiation hormesis ...is a moderate overcompensation to a disruption in homeostasis caused by the radiation; it is a stimulus to the repair mechanisms that cope with radiation damage as well, so that the overall effect is a health benefit". A

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¹⁴This experiment was not included in our main analysis because it differed so much in methodology, the treatment beginning much longer after transplantation than in our other experiments.

prominent consequence of radiation hormesis is the enhancement of immune activity in the radiated organism. In mice with cancer this manifests as an increase in interleukin-6 and tumor necrosis factor-a (TNF), which "blackens" and kills cancer cells²⁷.

In addressing the significance of hormesis to the question of Bengston's findings, Benford describes the results of her own preliminary studies with "laying on of hands" bioenergy healing techniques. Her investigation demonstrated, "... statistically-significant decreases in external gamma radiation measurements during the course of healing sessions." On the basis of these studies Benford concluded that individuals skilled in the art of bioenergy healing techniques induce the fluctuation of high-energy light waves (photons) more dramatically than those who are not trained in bioenergy healing techniques, regardless of purposeful intentions to heal. Benford suggests that, "... this decrease in external gamma counts is due to 1) enhanced absorption from the readily available gamma radiation in the environment; 2) changes to the rate of emissions from naturally-produced internal gamma radiation in the body; or, 3) a combination of both mechanisms. In any case the crucial net effect is increased internal ionizing radiation leading to enhanced radiogenic metabolism."²⁹

Benford quotes the cellular biologist, T. D. Lucky, in describing radiogenic metabolism. It is, "...the promotion of metabolic reactions by ionizing radiation and its products...radiogenic metabolism was involved in prephotosynthetic transformation of radiant energy into chemical energy. Metabolic adaptation to the utilization of free radicals from the radiolysis of water could be the evolutionary precursor to the use of active oxygen radicals in photosynthesis and respiration." Experiments shielding living organisms from natural sources of radiation are cited. This energy transformation function is thought to be active today in living organisms through the action of mitochondria absorbing radiant energy including ambient gamma radiation. ³⁰

Benford considers one of the primary aspects of disease to be a disruption of a state of healthy equilibrium between internal and external radiation sources. While gamma radiation may be the electromagnetically detectable aspect of the radiation in question, its fundamental source, according to Benford, is the zero-point energy (ZPE) of the vacuum of space. The ZPE is defined as "...the locus of a vast energy field that is neither classically electromagnetic nor gravitational, nor nuclear in nature. Instead it is the originating source of matter itself." Benford hypothesizes that healers are effective because the heightened electromagnetic fields surrounding their hands causes changes in the "torsion field" and thus the ZPE field surrounding the healee. This, in turn, through radiation hormesis, permits restoration of the natural energy balance between the healee and his environment and the absorption (or radiation) of energy from (to) the environment, depending upon whether there is energy deficiency (or excess) at the root of that particular disease state (Benford). Benford cites a number of studies that demonstrate that radiation-induced hormesis affects physiologic functions from the biochemical to the organismic level and reports in peer-reviewed journals of significantly decreased cancer mortality rates in more than 30 experiments with rodents.³¹

Radiation hormesis may also play a significant role in healing effects obtained with the ORAC, albeit not in the direct way described by Benford and Lucky. As reported above, a variety of anomalous physical effects can be detected within and about a functioning ORAC. While one might, peremptorily, expect to find an increase in some form of ionizing radiation within the ORAC, the opposite is true. As described above,

Reich found that the discharge of a charged electroscope within an ORAC is, anomalously, slower than the discharge in the nearby open air or a suitable, non-metallic control enclosure. He also found that cobalt-60 kept for several hours in orgone-charged lead foil lost its capacity to discharge an electroscope via radiation.³² One is reminded here of Benson's finding, described above, of a decrease in gamma radiation in the presence of operating healers. This lends credence to the idea that one of the mechanisms at work, at least in local healing, is an orgonotic function, the healee's organismic orgone energy excited by the healer.³³

These phenomena support Reich's contention that orgone energy and electromagnetic radiation are "functionally antithetical: intense sources of e-m and allied sources of energy such as nuclear radiation can excite quiescent orgone to the highpitched feverish state of "oranur". According to Reich mass-free orgone energy and electromagnetism function in different "realms" of nature: mass-free orgone functions in the deepest, broadest realm, being the fundamental substrate for all more superficial realms of nature, including electromagnetism. ^{34,15} This fits with Benford's concept of the relationship between ZPE and radiation. However, while Benford's model is basically electromagnetic in nature we can with reasonable justification understand it as being a more superficial expression of a deeper and broader organitic function. From an organotic point-of-view it is likely that the "ground" from which the particles of so-called ZPE emerge is "mass-free" (Reich) orgone energy. Reich postulated that a physically detectable and measurable state of orgone energy as it manifests on the physical level of functioning occurs when it emerges in a "pointed state" from the normally quiescent "mass-free" cosmic orgone energy ocean. 35 (Figure 5). Local changes in the amounts of radiation at the skin surface of healees as described by Benford (above) would, then, be a result of the organitic charge emanating from the hands of the healer interacting with the energy field of the healee. The resulting reaction could either directly or indirectly, through radiation hormesis, accelerate healing changes. The same reasoning would apply to the healing function of the ORAC except that the heightened organitic charge within the accumulator takes the place of the activity of the healer.

In summary, we have described a functionally identical relationship between the healing effects utilizing the orgone energy accumulator and the laying-on-of hands. In both interventions it is likely that orgone energy is the principle healing agent.

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¹⁵In this context it would be a mistake to rigidly think that an explanation for the experimental results must be either classical or Reich's. In fact, Reich saw his findings as providing a substratum for a deeper, broader understanding of electromagnetic theory. Today, what is known as "subtle energy" most likely is an expression of what Reich found to be orgone energy. One of the major differences between the two is that orgone energy is demonstrable objectively. Reich's "functional" approach to the relationships between mechanical energies and mass-free orgone is well documented in his book, Ether, God, and Devil.³⁶

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