Double-Blind Controlled Experiments and the Orgone Energy Accumulator[1]

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The case is made that the pervasiveness of the placebo response requires that knowledge claims about the efficacy of any medical treatment be substantiated by the use of double-blind controlled experiments. The use of such experiments in orgonomy is then reviewed. The Farabloc, a product whose construction suggests that it is an orgone energy accumulating device is then examined and the double-blind experiments providing evidence for its biological effects are discussed.

Given that people receiving any medical treatment are likely to manifest the placebo response,[3] and given that those administering such treatment are likely to display experimenter's bias,[4] double-blind controlled clinical trials are generally seen as the "gold standard" in establishing definitively the efficacy of a medical treatment or agent.

Yet, such experiments are extremely rare in the history of orgonomy. Though Wilhelm Reich did controlled experiments, never were his protocols double-blinded. My survey of the orgonomic literature reveals only one or two double-blind placebo controlled experiment.

However, extensive experimentation has been done on the Farabloc, a fabric which may be a weak orgone energy blanket. At least one of these experiments was double-blinded and meets the highest standards of scientific scrutiny. To the degree that the Farabloc is an orgone energy blanket – a fact yet to be determined, to that degree experiments supporting its effectiveness also provide compelling evidence for the biological effects of orgone energy devices.

[1] The author is indebted to both Maxwell Snyder and Prof. James Strick for their careful reading of an earlier draft of this article. Much of the material in what follows was part of the author's lecture entitled, "A Controlled Double-Blind Experiment Confirming the Effectiveness of the Orgone Energy Accumulator," given at Orgonon, July, 16, 2009.

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[3] The placebo response is now believed to be far more pervasive than formerly thought, with as many as two-thirds of those taking an inert substance manifesting a positive response, at least temporarily. See, for example, (1).

[4] Since the late 1950s Robert Rosenthal has done a series of experiments that show that experimenters' expectations influence experimental outcomes for both humans and, surprisingly, animals as well. See (2), (3) and (4).

The "Gold Standard," Reich's use of Controlled Experimentation, and Controlled Experiments in Orgonomy since Reich:

Though rare, there are circumstances when the use of double-blind placebo controlled experimentation is considered unethical, specifically in the case of cancer or other grave illnesses (5). With cancer nearly all controlled experiments involve comparing one treatment with an alternative, rather than a treatment versus a placebo, since withholding life-saving medication from a patient suffering from a potentially terminal illness may be unethical. Recently a similar stance was taken towards administering AZT to pregnant women, though in this case the charge was one of racism, where a placebo controlled experiment was proposed for women in Africa but forbidden in the United States (6). In addition to questions concerning medical ethics, there is also the cost of double-blind experiments: they are far more complicated and thus expensive to set up. Still, researchers generally look to double-blind placebo controlled experimentation as their standard for convincing themselves and others that they have made a significant discovery.

Wilhelm Reich never used double-blind controlled experimentation. He is not to be faulted for this. For one, the treatment protocol was virtually unknown at the time of his experimental work with orgone energy.[1] Double-blind only gradually came into greater and greater use following the Congressional hearings on thalidomide in the early 1960s (for example, see 8). The experiments establishing "experimenter's bias" first began at the time of Reich's death.[2] Secondly, Reich's focus was more about the discovery and the application of orgone energy than it was about working out all the detailed implications of his findings or in presenting them in ways that would meet current publication standards. Recall the passage in *Ether, God and Devil*:

> Did Columbus discover New York, or Chicago, the fisheries in Maine, the plantations in the South, the great water works or the natural treasures on the West coast of America? He did not discover, did not build or work out all this in detail (9: 6).

The discoverer of orgone energy and the orgasm formula has revealed "the coastal stretch from which everything else has developed"(9:6-7). Here I would add, and "will continue to be developed," one hopes. He left it to others to "work out all this in detail."

Reich did do a number of controlled experiments, beginning with those on the bioelectrical basis for sexuality and anxiety. Here Reich compared the readings of someone at rest and when that person was tickled or otherwise stimulated. Also, the responses of different people were compared, and different experimental protocols examined (10). In his bion research, different solutions, unsterile versus sterile were compared, as were different forms of sterilization; also, Reich compared bions generated from organic material vs. inorganic material (11). The orgone energy accumulator (ORAC) temperature difference experiments involve controls, as do the experiments with electroscopic discharge rates inside and outside an accumulator (12).

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[1] The first double-blind experiment was done by Harry Gold to test the use of aminophylline for cardiac pain in the mid-1930s. See (7: 90).

[2] Rosenthal, cited above, conducted his initial experiments in late 1950s.

And perhaps, most important of all, the experiments with cancerous mice, described in *The Cancer Biopathy*, involved comparisons of the life-span of untreated control mice with mice treated in ORACs (13). But, again, none were double-blind: at best, those involving mice were "single-blind" – mice are not likely to suffer from (or benefit from) the placebo effect, but those handling the mice knew which were being placed in ORACs, and may, as a result, handled them differently.[1]

The orgonomic literature since Reich's time details numerous controlled experiments. Here is a list of some:

- various duplications of Reich's orgone accumulator temperature difference experiments;
- water evaporation inside an ORAC and a dummy box;
- experiments with plants, often focusing on the sprouting of seeds;
- experiments involving cancerous mice;
- wound healing in mice using the DOR buster and the ORAC; and
- body temperature experiments, one of which will be discussed below.[2]

With one exception, none of these was double-blind. Still, it must be emphasized that the lack of double-blind protocols in the overwhelming majority of the experiments summarized in this list, does not mean that these experiments were useless; quite the contrary, many of them provide very strong evidence of the physical and biological effects of orgone energy devices.

The literature both during Reich's life and since includes numerous case studies of the effects of the accumulator, and the anecdotal evidence that such studies provide is of importance as well. Indeed, an entire book recording cases has been written (15). In this context, one must note the tension that exists between a doctor as healer versus the doctor as an empirical scientist.[3] In case studies, one cannot isolate the natural course of healing of the organism (so-called "endogenous healing") and the possible placebo effect of medical treatment per se from the potential healing of properties of the medical DOR buster, the shooter, and the accumulator.[4] Only controlled double-blind experiments can do that.

I would be remiss if I did not note that at least one person who takes it upon himself to speak on behalf of orgonomic science dismisses the need for double-blind experiments. Writing in the *Journal of Orgonomy*, Charles Konia states flatly that double-blind experiments "are not used in the orgonomic sciences because they are not necessary." Such experimental protocols

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[1] In one of Rosenthal's experiments, students were told that a certain set of rats had been bred to be super-smart; this was a fiction. Those rats subsequently ran mazes more quickly than did their identical comrades, who had been labeled "dull." But videotaping showed that the "smart" rats were handled more frequently than the "dull" ones; this plus possible timing errors more than likely accounted for their speed at maze solving. See (14).

[2] Stefan Müschenich detailed these experiments in his presentation, "Scientific Research on the Orgone Energy Accumulator and on Wilhelm Reich's Concepts of Biopathies," at the International Conference on Orgonomy, Rangeley, ME, 2007. I am indebted to him for providing me with a copy of his talk as well as a copy of the projected images.

[3] For an interesting discussion of this and other issues concerning physicians' initial responses to the use of randomized clinical trials, see (16: 155-156).

[4] Grant Thompson suggests that any treatment benefit consists of the positive effects of the treatment *plus* the natural course of the healing process *plus* the placebo effect. (7: 26).

may be necessary in conventional scientific inquiry, but in the case of orgonomy "an essential requirement in functional research is the *state of emotional health* of the investigator." And if the researcher is healthy then she will be immune to perceptual error or "characterological bias," thereby vitiating the need to exclude the experimenter's expectations and other sources of data distortion. In the case of conventional inquiry, presumably carried on by armored individuals, the presence of distorting factors (misperceptions, character flaws, etc) must be excluded to obtain valid results. "This situation is the exact opposite of the relationship between the healthy natural scientist and the process under investigation where the organ sensations of the scientist are, to a large extent, the tools of research." [1]

As for the last point, surely Konia is correct. The process of discovery in orgonomy does at times require orgonotic sensing, and with *certain* experiments perceptual responses will differ with the health of the observer. But I should think that the use of double-blind placebo controlled experimentation is less about discovery and more about confirmation once initial results lead to a promising hypothesis. Then one must confirm one's findings, and what better way to do that than to rule out possible bias. But, Konia presupposes that everyone working in the orgonomic sciences is, *ipso facto*, healthy and thus free of bias. Would that it were so!

A Double-Blind Controlled Experiment in Orgonomy:

There is one double-blind controlled experiment in orgonomy that is widely known; it was done by Stefan Müschenich with the assistance of Rainer Gebauer. Their research was submitted to the University of Marburg for their D. Psych. degrees, and later published as *Der Reichsche Orgonakkumulator* in 1987 (18). Though their experiment was described in an earlier issue of the *Annals* (19), I will briefly summarize it here.

The focus of the Müschenich / Gebauer experiment is Reich's observation that "*body temperature rises in the accumulator* as much as *one degree centigrade* (the rapidity and amount of increase varying from individual to individual)" (13: 317; italics in original). Müschenich / Gebauer set out to measure core body temperature, skin temperature, and heart rate, using careful double-blind procedures. In every case there was a statistically significant result, with a rise in core body temperature, an increase of skin temperature and an increase in heart rate; the last result was seen by the experimenters as unexpected, but nonetheless established. Subjects were also asked for their own impressions via a questionnaire; all but one of the subjects reported feeling "better" in the ORAC as opposed to the dummy box.

The only possible criticism of this highly important experiment is the low number of subjects, with a total of only fifteen. A follow up experiment involving 62 test subjects was carried out at the University of Vienna in 1991/1992 by Günter Hebenstreit, but unfortunately it

[1] From (17: 162); thanks to Maxwell Snyder for pointing this passage out to me.

did not measure core body temperature.[1] It is difficult as of this writing to say more about the Hebenstreit experiment.

We now have at least one double-blind controlled experiment verifying one of Reich's claims and noting an "anomaly" that traditional medical science would be hard-pressed to explain. But there is additional double-blind experimentation, *if* the marketed Farabloc is an orgone energy accumulating device.

The Farabloc: Its Origins and the Theory behind its Development:

The Farabloc was developed in Germany by Frieder Karl Kempe, in an attempt to help his father who suffered from phantom limb pain following the amputation of his leg during the Second World War. Two aspects of the history that follows are worthy of interest, namely the roles of weather and of the Faraday cage: we know that Reich claimed a definite correlation of weather and measurable orgone energy phenomena, and we also know that Reich's use of the Faraday cage was instrumental in the development of the ORAC.

Kempe noted that his father's pain increased as low pressure approached. This observed correlation of pain and weather change is, of course, not new, going back at least to the time of Hippocrates (20). Kempe reasoned that the pain his father experienced had to do with the lack of skin covering the stump, and thus exposing it to electromagnetic fields that are otherwise shielded.

Here I feel compelled to interrupt this narrative to question Kempe's reasoning here. First, I don't need to remind the reader that many people who haven't lost limbs to amputation also report an increase in pain with the onslaught of bad weather. Second, why did Kempe associate bad weather with electromagnetic increase? Or is he thinking about possible electro-static activity? Apparently, the Farabloc shields both kinds of fields, but Kempe only mentions electromagnetic ones. Finally, there is the assumption that ordinary skin acts as a shield against electromagnetic fields. Does it?

Back to the narrative: if a lack of skin explained the increase of pain, or so Frieder Kempe reasoned, perhaps a shield that functioned like skin would decrease his father's agony. From the Farabloc website:

> Frieder wondered if a "second skin" - the principle of a Faraday Cage - might shield sensitive tissue, calm damaged nerve ends and stimulate blood circulation. This began what has become a 30-year personal odyssey. After studying engineering, Kempe began work on a prototype covering, which he tested on his father. By 1978, he'd developed a thin fabric cloth with interwoven metal fibers that significantly reduced his father's pain. He named the product Farabloc. (21)

The Farabloc is, we are told, a "fabric cloth with interwoven metal fibers." In an article reporting on research on its effectiveness the fabric is described as "woven mesh of stainless steel and nylon thread... 9.5% of the fabric is made of steel wire, which consists of iron, nickel and chromium" (22: 16). This same article claims that the Farabloc has been shown to block high frequency and ultra high frequency electromagnetic fields. This provides some theoretical basis for explaining the healing

[1] Müschenich briefly described this experiment at the International Conference on Orgonomy in 2007. For further details, I am indebted to Müschenich's colleague and secretary, Peter Nasselstein: email, November 25, 2009.

potential of the Farabloc:

> Changing the balance of the electromagnetic field toward lower frequencies may
> suppress free radical formation by inhibition of iron-containing enzymes...(22: 15).

Evidence of the Effectiveness of the Farabloc:

The first controlled study of the Farabloc was funded by the Farabloc Development Corporation and carried out in 1985 by Prof. G. L. Bach, M.D., Professor of Medicine/Rheumatology, University of Munich, Germany. In the study the material was wrapped around the entire body of the subject or in cases of phantom limb pain, just the exposed stump. Bach's report indicated that:

> In a relatively broad range of disorders in 32 patients with phantom pain, the therapy resulted in 81.25% of the patients showing a good or very good improvement....Similarly good were the results with arthrosis (85%), lumbar spinal column syndrome (86.7%) and other syndromes (79.4%). The results of the test on 12 patients with chronic polyarthritis are astonishing. In the tests 63.6% of the patients reported an improvement in their condition. This result is astonishing in view of the fact that chronic polyarthritis belongs to the inflammatory-rheumatic group of illnesses... (23).

Though placebo controlled, this study was not double-blind; still the rate of positive results (in all but one of the tests) is greater than the 66% of people who may respond positively to a placebo, and thus quite important.

The Farabloc Corporation is located in Vancouver, British Columbia, and in 1990 the British Columbia Ministry of Health asked researchers at the University of British Columbia to conduct a controlled double-blind experiment to determine the Farabloc's efficacy in treatment of phantom limb pain. The Corporation cooperated and provided materials, both the genuine item and a placebo dummy cloth. From the study:

> Farabloc is made of a series of ultrathin steel threads woven, in a specific pattern, into a linen fabric which can be sewn into a garment (e.g., a sleeve/glove, sock, vest) to be worn over the amputation site as soon as the pain is felt. It is based on the same principle as the "Faraday Cage" to block external magnetic influences. ...
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> For the purpose of this study, the manufacturer produced a placebo fabric, identical to Farabloc in color, thickness, and texture but without the wire mesh which is not visible. Garments were fashioned from each fabric as appropriate for the individual subject. (24).

The most significant feature of this study was that it was double-blind. It involved a cross-over design; that is, subjects used both the dummy and the real fabric, with a "wash out" period in between, to control against carry-over. Pain relief was reported using the Visual Analogue Scale, a commonly employed measure of pain (25). A total of 34 subjects completed the trial and the results indicated that "the subjects reported significantly greater pain relief on the VAS scale when they were using the Farabloc garment as compared to their pretreatment, washout or placebo pain relief ratings" (24: 8).

In 2002 an article reviewing various approaches to addressing phantom limb pain was published in *The Clinical Journal of Pain.* The authors were concerned with quality assessment of the various trials. Five assessment questions were listed, with a "yes" answer counting as one point towards a numerical value for comparison purposes.

> 1. Is the study randomized?
> 2. Is the randomization appropriate?
> 3. Is the study double-blind?
> 4. Is the double-blind method appropriate?
> 5. Are withdrawals and dropouts described? (26: 85).

Using the scale that results from answering these questions affirmatively, the researchers gave the Conine study just discussed a rating of five out of five. Of the post-operative intervention trials reviewed, only the Farabloc study scored five out five (26: 89).

Another study originating at the University of British Columbia, this one single-blind, looked at the Farabloc in diminishing delayed-onset muscle soreness. From the results:

> **Main Outcomes Measured:** Perception of muscle pain, as measured by a visual analog scale (VAS), and strength, as measured by knee extensor torque (EST) with the Biodex dynamometer, were evaluated at 0, 24, 48, 72, and 96 hours. Serum inflammatory markers of muscle damage, including malondialdehyde, creatine phosphokinase, myoglobin, leukocytes, and neutrophils, were assayed at 0,2,6,24, and 48 hours.
> **Results:** Repeated-measures analysis of variance was carried out for each of the seven variables to assess differences for fabric, order of treatment, time, and all combinations. Results of VAS and EST and levels of malondialdehyde, creatine phosphokinase, myoglobin, leukocytes, and neutrophils all showed a highly significant effect of Farabloc compared with placebo. (22:15)

In short, the use of the Farabloc led to "reduced pain, [reduced] strength loss, and [fewer] serum markers of inflammation" (22: 20).

The most recent study of the Farabloc addresses fibromyalgia. From the article in *Clinical Rheumatology*:

> ...we performed a phase 1, single-blind study of patients using Farabloc (F) or placebo (P) gowns for 8 h per night during the 20-day hospitalization and a phase 2, single-blind crossover study of patients using both F and P gowns randomly and alternatively switching after 10 of 21 days hospitalization ...The study involved randomly selected and blinded use of hospital gown 8 h per night of either F or P fabric. ...
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> Patients with fibromyalgia had less pain after sleeping in a gown made of Farabloc than with a placebo fabric. This suggests that Farabloc, an electromagnetic shielding fabric, has analgesic properties in fibromyalgia. Reduced pain observation is consistent with previous studies in phantom limb pain and delayed onset muscle pain. Limitations of this study include single blind design, small sample size, and in phase 2, a lack of washout period and a F/F group. (27)

In sum, there is strong empirical evidence that the Farabloc is effective in reducing pain and inflammation. Assuming, based on its construction, that the Farabloc is an orgone energy accumulator, then evidence of its effectiveness is simultaneously further evidence of the real biological effects of the ORAC. But is it an accumulating device? We know or have good reason to believe that it is indeed a blocking device, but does it accumulate orgone energy? And of course, the same question could be asked of the orgone energy accumulator itself: is it really an accumulator of orgone or a shield against electromagnetic energy? Or both?

Blocking, Accumulating or Both?

The idea that ORACs may be blocking or shielding or keeping something out rather than accumulating something within is not new. It was part of the dismissal by one of

the scientists engaged by the FDA of Reich's electroscopic discharge experiments.[1] But of course it is possible that an orgone energy accumulator both shields *and* accumulates. It would seem that the construction of an ORAC might very well give it the ability to shield or screen out high frequency and ultra high frequency electromagnetism. It is, after all, a Faraday cage of a sort, but one covered with non-metallic material. If so – and this could easily be determined empirically, then it is certainly possible that the healing properties of the ORAC might be due to *both* the benefits described in the Zhang article quoted above (fewer free radicals, etc.) *and* the vagotonic benefits of being within a higher orgone energy field of the sort provided by the accumulator.

Does the Farabloc wrap function as an accumulating device? Its construction would seem to argue for this, given the metal running through the linen. One possible test of its role as an accumulator would be to see if a temperature difference could be detected between the Farabloc and a dummy cloth of similar construction.[2] Until such time as an experiment of this sort may be performed, it is worth considering reasons why one would argue that the accumulator is indeed adding something within, even if it is also screening something out. Here are some reminders:

- the temperature difference experiment;
- the vacor tube experiments;
- the visual detection of energy within the ORAC;
- the double-blind experiment by Müschenich/Gebauer described above.

All suggest the addition of energy rather than the mere absence of an energy field.

In this article I have described the Farabloc, a device intended to shield out electro-magnetic fields within a certain range. The description of this device would suggest that it is a weak orgone energy blanket. If this is so, then evidence supporting the healing properties of the Farabloc–specifically its ability to diminish pain and lessen inflammation–simultaneously provides the ORAC with empirical support that meets the highest standards of experimental protocol. If the Farabloc can be shown through some version of the To-T experiment to have the thermal properties associated with the ORAC, this would argue for its being an orgone energy accumulating device. Also, the recent work on harmful effects of electromagnetic fields,[3] might explain in part the healing properties of the ORAC.

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[1] This was the position taken by Dr. Kurt Lion of MIT in 1952. Reich was aware of the issue generated by the possible screening effects of the enclosure and developed an ingenious experimental protocol to address it: see (13: 128-132). For a critique of Lion, see (28).

[2] This suggestion was made by Prof. James Strick at the Summer Conference at Orgonon, July, 2009. I have a Farabloc pad and the Corporation is sending me a placebo pad of the same size, absent the metal threads. With these two pads, one can set up a To-T experiment similar to the one that is displayed in the Wilhelm Reich Museum. A positive temperature difference would tend to confirm the assumption I've made based on the construction of the pad.

[3] A number of such studies are cited by Zhang in the article on delayed-onset muscle soreness.

Two hypotheses, then, remain to be tested. One, does the ORAC shield against electromagnetic radiation? Secondly, does the Farabloc have the ability to produce a To-T difference that is statistically significant? Should both hypotheses yield positive results, it would seem that people within the orgonomic community might wish to be in communication with the Farabloc Development Corporation.

Finally, a potentially interesting and complicated legal situation may arise in the future for those who manufacture and sell orgone energy devices. The Farabloc Development Corporation was granted a U.S. patent in 1987 for the Farabloc. They currently hold four such patents (29).

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