

EXPERIMENTAL CONFIRMATION OF THE REICH ORGONE ACCUMULATOR THERMAL ANOMALY

by James DeMeo, Ph.D.

ABSTRACT

Experimental investigations were undertaken by the author, of the thermal anomaly (To-T) inside the *orgone energy accumulator* (ORAC), a phenomenon firstly observed by the late Dr. Wilhelm Reich, who invented the ORAC device. This thermal anomaly, by the theory of Reich, is produced from the rarified motional-pulsating *orgone energy continuum* which is concentrated inside the ORAC, producing a frictional thermal heating of the air. Discussion is given on the experimental proofs standing behind Reich's theory and claims, drawing attention to similar concepts in the modern sciences. The orgone energy is similar in many respects to the older *luminiferous cosmic ether* in that it fills all space, but also fulfills the role of an *atmospheric-biological life-energy*, in that it is pulsatory and excitable, and charges living tissues. In the To-T experiment, air temperature was measured inside the upper part of a 10 cm cubical ORAC, and contrasted to the temperature within a thermally-balanced but non-orgone-accumulating Control enclosure, following the protocols of Reich. Exceptional care was taken in the construction of the apparatus and in control procedures, with instrumentation calibrated down to -0.002°C . The experiment was undertaken in a well-ventilated but fully dark-shaded outdoor thermal shelter specially constructed for the evaluations. Under the optimal conditions for ORAC functioning (i.e., low humidity, light or no winds, clear skies), a cyclical positive thermal anomaly was systematically detected, with an average of $+0.13^{\circ}\text{C}$ differential in two 10-day experimental runs presented here, with maxima peaking daily around $+0.5^{\circ}\text{C}$ warmer than the Control, and minima at around -0.1°C . The experiments confirmed Reich's claims of a slight spontaneous heating effect inside the ORAC, which has no known energy source by classical "empty space" determinations.

Keywords: Wilhelm Reich, orgone energy, orgone accumulator, thermal anomaly, To-T

INTRODUCTION

This report presents the preliminary findings from an extended experimental evaluation of the thermal heat anomaly within the orgone energy accumulator (ORAC), or *To-T effect*. The To-T is one of several experimental proofs developed by the late Dr. Wilhelm Reich for the existence of what he called the *orgone energy*, or *cosmic life energy*. From Reich's theory, the thermal anomaly is produced due to a postulated subtle friction-heating of the air, from the rarified motional-pulsating *orgone energy continuum* which is preferentially attracted into and concentrated inside the ORAC, but less so inside the Control. My experimental investigations into this phenomenon extend back to c.1970, but I began in earnest to evaluate the To-T experiment under optimal laboratory conditions around 2000. Early in my work I was using sensitive mercury thermometers, calibrated to NIST standards and with tenth-degree markings, which by use of a magnifying glass could be evaluated for hundredth-degree determinations. These were later given up for thermocouple measuring systems, which for other reasons also proved unsuitable for the experiment. Ultimately, I settled upon sensitive high-quality thermistors, which could be individually calibrated electronically by software adjustments. I also experimentally tested different shapes and sizes of ORACs, such as cone-shapes, and sizes ranging from 1 cubic foot, down to a 10 cm cube. ORACs and Control devices were tested inside special chambers, underground in dug pits, as well as above ground, in the shade and in open sunlight. In the end, a simple methodology was finally settled upon which produced relatively consistent and positive results, as given below.

REICH'S DISCOVERY OF THE ORGONE, AND EXPERIMENTAL CONFIRMATIONS

The discovery of the orgone was claimed by Reich originally as a sensible *bioelectrical current* which moved along the skin surface during states of emotional and sexual excitation.¹ His later work examining biological excitation in single-cell microorganisms demonstrated a similar sensible, but also visible and photographable blue-glowing energy-field emitted by special micro-

spheroid vesicles derived from crushed beach sand heated to red-hot incandescence, and then quickly plunged into sterile nutrient solutions.² He documented various protocellular life-like forms by both heating and freezing of preparations.^{2,3} Reich's blue-glowing vesicles were around 1 micron, and could be observed and photographed in the light microscope.^{3,4,7,8} He called these vesicles the *bions*, and given their pulsatory movements and culturability, considered them to be a transitional entity between living and non-living matter.^{2,3,4,7} His now-validated experiments on this subject predate and anticipated similar findings on the development of life-like microspheroid vesicles produced under conditions of heating and/or freezing some 30 years later by scientists such as Bahadur, Carnes-Smith, and Fox.⁵ The existence of thermophillic microbes as from deep-sea hydrothermal vents or hot springs, which today stand at the cutting-edge of research on the "origins of life" question, were anticipated by Reich's early experiments. The therapeutic value of natural hot springs, which are typically enriched with mineral vesicles, is fully accepted by folk medicine and natural-oriented physicians as having healing properties similar to what Reich previously documented with the radiating bions. Reich's findings on the bions were originally replicated by Roger duTeil and they jointly communicated the findings to the French Academy of Sciences in 1938.⁶ However, Reich's bion discovery remained relatively unknown and unacknowledged due to the events of World War II and the Vichy take-over in France, particularly given his public anti-Nazi writings. He came to the USA in 1939, just ahead of the Nazi invasion of Norway.

Reich also observed an anomalous blue-energy radiation around living red blood cells viewed microscopically, a phenomenon which also registers on photographs.^{3,4,7,8} This appears to be one and the same as the classically-described *zeta potential* of electrostatic charge around the blood cells, and which is accepted as a measure of overall vitality as expressed in the sedimentation testing of blood.⁹ Broth cultures of the sand-bions were also observed to have strong radiant effects which passed through glass containers to create

biological reactions among laboratory workers (conjunctivitis of the eye from prolonged microscopical observation, plus an irritation or tanning of the skin). Physical effects were also noted, such as the fogging of photographic plates, the spontaneous magnetization of metal laboratory implements kept near to the radiating sand-bion cultures, and non-frictional electrostatic charging of nearby insulators.¹⁰ These kinds of observations led Reich to understand he was dealing with an entirely new form of energy, something related to bioelectricity and life, but also with clear physical expressions in non-living material.

In efforts to better study this radiation, which could not be detected via standard electromagnetic instrumentation, Reich constructed a special metal-lined insulated box, to capture and amplify the phenomenon for closer study. This effort was successful, and Reich observed this would enhance the observed visible and sensible effects of the radiating sand-bion cultures. However, the metal box surrounded with insulation also showed similar phenomenon without inclusion of the radiant sand-bion cultures. After considerable puzzlement and investigation, Reich concluded the atmosphere was filled with the same energy which charged and radiated from the sand-bion cultures, though in a form not bound directly to life or matter.¹¹

Reich thereby made the simultaneous discovery of the *orgone energy*, and invention of the *orgone energy accumulator*. The discovery led him into medical research on the health effects of this radiant and luminous energy, and investigations into the best materials and environmental conditions for constructing and using the orgone accumulator. At his laboratory, Reich and his associates were injecting the radiant blue-glowing sand-bions into experimental cancer mice, and also having human subjects sit inside larger orgone accumulators (ORACs), for direct exposure to the radiant energy. His experiments along these lines were controversial, as they produced remarkable life-positive effects, including prolongation of life in cancer mice, plus remissions of various health problems not anticipated by classical biology or

medicine. Reich eventually came to believe the “resistance to disease” was basically a condition of life-energy charge and pulsation within the organism.^{3,7}

Both during his lifetime and in the years after, the ORAC has been shown to produce powerful physiological effects in clinical research for treatment of humans against what he called *low energy biopathies*, which included most cancers.^{3,7} While stopping short of claiming a “cure”, his *orgone accumulator therapy* has spread both informally “through the grapevine” and through professional and scholarly groups, and is today widely used in both Europe and North America, though almost exclusively outside of the hospital system of the medical mainstream.^{12,13} The ORAC has also been shown to stimulate an increased growth and vigor in controlled experiments with plants, and increased life-span and slowed tumor growth in cancer mice.^{14,15} Published clinical case-studies of the effective benefit of the orgone accumulator on human diseases are too abundant to review here, but there are several double-blind and controlled experiments, undertaken at European universities and published in more recent years, confirming Reich’s observations on the orgone accumulator’s parasympathetic influence upon the human organism.¹⁶ A German government ministry in the state of Niedersachsen also included *orgone accumulator therapy* as a recommended form of *energy medicine* along with homeopathy and acupuncture, for harmonization within EU medical practice.¹⁷ Other controlled and blinded clinical experiments employing orgone-radiating tubes as substitutes or additions to acupuncture needles, strongly suggest that orgone energy is also the *acupuncture energy* of Chinese medicine.¹⁸ These and other findings are strongly suggestive also of the work by Popp and others documenting a weak but permanent *biophoton* flux in the visible and ultraviolet range.¹⁹

Reich’s studies on the physical properties of the orgone energy were equally remarkable. The ORAC could develop a higher electrical charge-density inside itself as compared to the exterior, as determined through delayed electroscopic discharge-rate experiments.²⁰ My own experiments indicate orgone energy can charge up water,

suppressing its evaporation.²¹ Orgone accumulators were also shown, including within my own laboratory, to charge up high-vacuum tubes, yielding anomalous luminous and electrical effects, indicating high vacuum tubes approaching deep-space environments remained filled with a mass-free energetic substrate.²² Reich's high-vacuum experiments are thereby suggestive of classical physics concepts invoking terms like "dark matter," "neutrino sea," or "zero-point vacuum fluctuation," to describe a still-unsettled issue about what actually exists in the core of a deep-vacuum.²³ Geiger Muller tubes for radiation detection were also shown, after sufficient charging inside an ORAC, to yield anomalously high counts for background radiation alone.²⁴ I have replicated this effect in my laboratory where upwards of 4000 counts per minute have been recorded from Geiger-Müller tubes charged in strong ORACs for about a year, and exposed only to normal background radiation.²⁵

A *thermal anomaly* was also noted by Reich inside the orgone accumulator, with special experimental tests developed for its measure. This experiment, which in its basics has been replicated many times, shows how the ORAC spontaneously develops a slightly higher temperature inside itself than in a thermally-balanced control enclosure.²⁶

All of these experimental anomalies were replicated and the effects corroborated by other scientists, either during Reich's lifetime or in the decades after his death.

A "GREAT BOMB" FOR PHYSICS, WITH DISMISSALS

One of the scientists who corroborated the ORAC thermal anomaly was Albert Einstein, who met with Reich over five hours at his Princeton home on 13 January 1941.²⁷ Reich brought several of his instruments to their meeting, including an organoscope which allowed for visual objectification of atmospheric orgone phenomenon, as well as a special orgone accumulator for demonstrating the thermal anomaly. During the demonstrations, Einstein declared to Reich, "should it be true, it would be a great bomb," presumably because of its implications for classical physics theory.²⁸

At the end of their meeting, Reich's devices were loaned to Einstein for further study. Einstein confirmed the effect in a subsequent letter of 7 February to Reich.²⁹ Unfortunately, one of Einstein's assistants offered the explanation that the To-T effect was an artifact of thermal-convection in the room. Einstein accepted that explanation without further attention and in the same letter communicated his opinion to Reich. Reich subsequently wrote back to Einstein on 20 February, outlining various control experiments which, if undertaken, would refute the idea of simple convection effects. However, Einstein never replied back to Reich on this issue of control experiments, and there is no evidence he ever bothered to undertake further investigations.²⁷

Today we know Reich's orgone energy, which is a similar cosmic medium to the older *cosmic ether of space*, would have undermined Einstein's theory of relativity, which demands that space be empty of any light-affecting medium. Only eight years earlier, Einstein had been confronted with experimental evidence of a similar cosmic energy continuum by the American physicist Dayton Miller. Miller had undertaken several decades of work on the ether question, including a definitive series of interferometer tests over four seasonal epochs atop Mt. Wilson, in the late 1920s. There, he detected an ether-drift signal which overcame the small and less conclusive results of the better-known Michelson-Morley experiment.^{30, 31}

Einstein never embraced the Miller results, however, dismissing them *ex-cathedra* as "thermal artifacts," a claim which Miller successfully rebutted when still alive.³¹ The same "explanation" was resurrected by Einstein to dismiss Reich's troubling findings, which also suggested the discovery of a *ponderable medium* – the orgone energy in Reich's case.²⁷ Today, we know the Miller ether-drift experiment was corroborated by several others, including the late Albert Michelson, and in more recent years by Yuri Galaev at the Ukraine Radiophysics Institute.³¹⁻³³ The most forward-looking physicists today speak about the "intergalactic medium" or mysterious "dark matter," and there are a growing number of scientists and engineers who

increasingly speak about the *cosmic ether of space*, based upon these and other experimental confirmations.³⁴ All of this newer research provides support to concepts which are quite similar to Reich's cosmic orgone continuum.³⁵

AN AROUND-THE-CLOCK THERMODYNAMICALLY-CONTROLLED PROTOCOL

The basic To-T or thermal anomaly inside the orgone accumulator has been replicated by different scientists since Reich's time, with varying degrees of certainty. Prior to my own studies on this issue, and beyond the work presented by Reich, successful replications were undertaken notably by Blasband, Baker, Fuckert, Grad, Konia, and Seiler.^{26,36-40} My own experiments benefited from those earlier studies, but additionally addressed a number of potential issues, using a protocol to rule out all known classical thermodynamic objections.⁴¹ My own experiment would additionally be run around-the-clock over many days, using an automated data-acquisitions (DAQ) system, and with greater precision than in prior trials. Space does not allow a full exposition of the methodology, but I can summarize.

The most definitive results came from using matching thermistors of high sensitivity and accuracy, which allowed very exacting calibrations down to 0.002° C, with around-the-clock automated To-T recordings. These were used inside a small but strong ORAC, and a thermally-balanced Control enclosure, with hollow interior dimensions of 10 cm in both cases, and exterior of 17 cm, the difference being composed of the variable materials from which they were composed. The goal, which was achieved through empirical laboratory thermal stress-testing, was for the ORAC and Control to have nearly identical thermal resistance and heat capacity, such that ordinary natural diurnal thermal variation would create nearly identical thermal reactions within their interiors. Whatever residual effects were noted, then, could be viewed as a possible influence of the orgone energy phenomenon acting within the ORAC, but not in the control.

Reich's original determinations on the best materials

for an orgone accumulator require use of ferromagnetic metals (galvanized sheet steel or steel-wool products) interlayered with insulators of a high-dielectric property (rough sheep's wool blankets or wool-fluff, fiberglass materials, certain plastics such as styrene or acrylic felt, mason-board or fiber-board materials).^{12, 42}

From these guidelines, and following my own experimental testing of materials, the ORAC was composed as follows:

1. An inner 10 cm box of thin galvanized steel sheet metal, 27-gauge (-0.5 mm thick) was constructed. One of the metal sheets had a ¼ inch hole drilled through, for insertion of the measuring thermistor.
2. This metal cube was firmly nested inside another box composed of ½ inch fiber-board material, (i.e., *Celotex* brand) which is typically composed of crushed agricultural residues (i.e., sugar-cane stalks), which at the factory is mixed with binding glues, spread out flat and allowed to harden into semi-rigid sheets, one side of which is typically given a white coat of paint. It is used for ceiling tiles or insulation, and is readily available in most building-supply stores in North America. These fiber panels covered the exterior sides of the metal cube, overlapping to compose a slightly larger cube which was glued and coated with a white silica-based paint of a high-dielectric property. One of the fiber-board panels also had a hole drilled into it, to match up with the hole in the sheet metal. This side with the hole became the top of the ORAC. A straight and rigid hollow plastic tube of around 10 cm length was then fixed through and cemented into the hole in the fiber-board panel, but resting against the outside of the metal plate, such that the thermistor (fitted inside a separate rigid jacket which allowed only its sensing tip to be exposed) could easily be inserted down the tube and precisely into the top-interior of the metal box. A cotton-fluff insulation gasket was fitted to the thermistor jacket such that, when fully inserted down the tube, the top-hole in the ORAC interior would be fully sealed from outside air.

3. A layer of “000”-grade steel-wool was then laid down to cover the full cube, and that was in turn covered over with a double-layer of acrylic felt, as can be obtained in fabric shops. 100% wool felt also could be used (but not polyester). Three such alternating layers of steel-wool/double-felt were applied in turn. The final exterior layer was composed of a double-layer of acrylic felt. Standard masking tape was used to hold the steel-wool/felt layers together during the construction process.

4. A final exterior layer of thin plastic kitchen food-wrap was added, to slow or eliminate air-intrusion.

This ORAC construction design employing layered ferromagnetic conductive material with high-dielectric insulation material, creates, by my observation, a type of *hollow capacitor*, which has no history of experimental development outside of Reich’s discovery, and which attracts a higher charge of the cosmic life-energy inside itself.⁴³

The Control enclosure used similar insulating materials but *no metals whatsoever*, as follows, from the inside out:

1. Five layers of 110-pound card-stock (from a printing shop as used for post-cards) were lightly cemented together in a stack and then cut to compose a 10 cm cube, with hollow interior, matching in size the metal cube of the ORAC. A ¼ inch hole is drilled for thermistor insertion, identical to the ORAC.

2. A surrounding box of ½ inch fiber-board material was created, exactly the same as in the ORAC, snugly fitting around and lightly cemented to the outside of the constructed card-stock box. A matching hole was also drilled in the fiber-board, with the addition of an identical rigid plastic tube for insertion of the thermistor, as was done with the ORAC.

3. Multiple layers of the same acrylic felt, but no steel wool, were used for the Control, which did not include metals in its construction. Because there was

no steel wool, the Control required about twice as much acrylic felt layering as used for the ORAC.

4. A final exterior layer of thin plastic kitchen food-wrap was added, as before, to slow or eliminate air-intrusion.

Several times during the construction process, the materials were evaluated empirically as to their thermal properties. The choice of 5 card-stock layers in the Control to match against the single layer of steel in the ORAC was determined empirically, by experimental measurement of their heat-resistance properties. A thermal heat lamp and/or radiant heater was used to determine the number of card-stock layers necessary to match the thermal resistance of the 27-gauge (~0.5 mm thick) sheet steel, by measuring temperature rise and fall on the side opposing the heat source. By this method, I determined that 5 card-stock layers produced nearly identical thermal shielding from the heat sources, as did the single metal layer being used. While one might anticipate the metal layer would more quickly conduct a thermal impulse across and through its dimensions as compared to card-stock materials, one must keep in mind the metal also reflects away much of the incident thermal infra-red which strikes its surface. By classical theory, this difference would work *against* any mechanically-produced thermal heat anomaly in the ORAC, as discussed below.

A subsequent thermal evaluation of the composed metal box and cardstock box was also made, and later still of these boxes with their respective fiber-board covers, verifying the accumulator and control yielded very close thermal reactions to the intensive heat lamp.

This thermal-stress evaluation was repeated again to determine how many layers of acrylic felt was necessary on the Control to compensate for the steel-wool/felt construction of the ORAC. By adding or subtracting layers of acrylic felt to the Control, I was able to produce a nearly identical thermal-resistance and lag-time response between the two enclosures. The overall size of the ORAC and Control ended up nearly identically also, at ~17cm on each side.

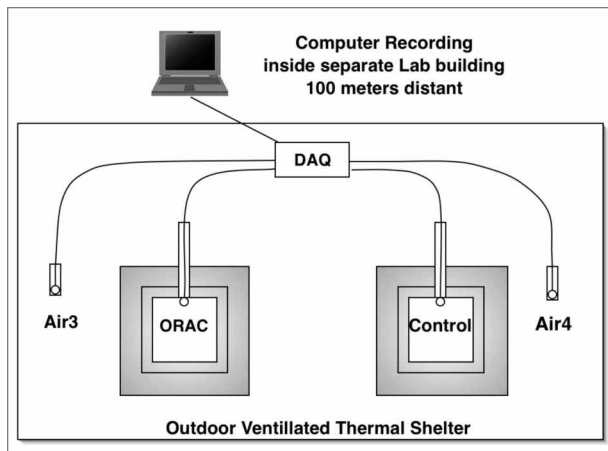


Figure 1. General layout of the To-T Experiment. Thermistors measure the temperature in the upper interior of both ORAC and Control enclosures, with separate air temperature measurements.

The metal components of the ORAC would, by classical theory, reflect away a significant quantity of whatever thermal infra-red (IR) energy was incident upon them. One might therefore expect, with no orgone energy and equal thermal dynamics, the orgone accumulator would never get as warm as the Control. Consequently, by classical thermodynamic theory and no orgone energy effects, the ORAC should produce a much more shallow oscillating curve over the course of the day as compared to the Control, the latter of which would allow radiant IR energy more directly into its interior, yielding a greater warming effect. By this reasoning, even with identical thermal effects from air temperature, as from air conduction and convection incident upon the exteriors of the ORAC and Control enclosures, the accumulator should never get as warm as the control. The ORAC should constantly be reflecting away considerable IR energy, and hence remain slightly cooler than the Control in the daytime when the Sun is heating up the atmosphere and landscape. Over the cooling night period, and assuming no orgone energy thermal effects, the ORAC would retain more of the thermal energy it had acquired in its interior during the day, given the inward-reflecting nature of its metal components.

In this regard, the thermal reactions of the ORAC bear some similarity to how modern building design uses

metal foils with insulation materials to reflect thermal IR energy: To keep a building cool in a hot environment, the metal foil reflects away the unwanted daytime heat; in a cold environment, the metal foil layer helps retain a building's internal heat by inward-reflection. Likewise, metal-foil-lined "survival blankets" retain body heat in cold environments, while foil lined beverage coolers ward off IR heat from the outside. Consequently, there are several lines of classical thermodynamic argument which predict the ORAC should show a lower temperature than the Control during the daytime, and a possibly warmer condition during the night. As will be shown, just the opposite was the case.

It was also important to create an outdoors, ventilated but dark-shaded environment in which to run the To-T experiment, where no significant differences in thermal energy input could preferentially arrive at either the ORAC or Control, to create a mechanical warming or cooling of one of them over the other. I could not use the standard kind of laboratory environmental-chamber, notably because they do not allow for fresh-air mixing, and are composed of metals, both of which would predictably affect the orgone-energy dynamics of the experiment.

From many sources^{12-16,42} it is known the more sensitive orgone accumulator experiments require a well-ventilated but dry space, away from any kinds of metallic structures, and without interfering low-level electromagnetic fields from either 60-cycle power lines, VLF from computers or electronic equipment, and RF from wi-fi, cell phones and towers, and similar radiations. Nuclear materials must also be excluded from within the proximity, with a preferred distance of around 50 miles from any nuclear reactors or similar atomic facilities, and the experiment should optimally be undertaken at higher altitudes. Reich's laboratory in Rangeley Maine met such standards, and my own laboratory was selected for those exact properties, in the forests of SW Oregon at a high altitude of 4300 foot (~1300 m) elevation, with a pronounced summer dry season -- conditions known for stronger orgonotic effects. This essential aspect of the experimental protocol

is in fact no more stringent than, for example, the different but equally specific demands that a cosmic-ray telescope be located in an isolated high-altitude region distant from city lights, or that neutrino-detection experiments be isolated deep underground or within a huge mass of glacial ice, and also fully away from atomic power reactors. As previously cited, others have made reasonably good measures of the thermal anomaly under conditions less-than-optimal. But a negative result under non-optimal conditions would be no more definitive than a cosmic-ray photograph fogged up by lights from a local airport, which the incautious astronomer thought would be irrelevant, but wasn't.

Initially I devoted considerable effort to running this experiment within a sheltered enclosure inside my laboratory building. However, multiple problems and issues forced moving the experiment outdoors into a special ventilated thermal shelter. This shelter, shown from the outside in Figure 2, was located under a shaded tree canopy on the forest floor away from all other structures. The walls were composed of double-layered plywood with numerous gaps allowing slow mixing with the outside air. Fresh air is necessary for good orgone accumulator functioning. It was painted white on the outside, with additional interior and exterior 1 inch Styrofoam insulation-shade panels. The roof was plywood with composite asphalt shingles to shed precipitation, and also covered with Styrofoam panels on the top. The entrance door was on the north side corner, covered over with a heavy tarp and plywood sheet when closed up for the experiment. During those times, the interior was quite dark, requiring a flashlight to view things. The exterior of the structure received only spotty direct sunlight as would filter diffusely through the thick cedar and pine forest canopy which rises overhead to around 150 feet in height at this location. By empirically adjusting plywood shade and Styrofoam insulation panels, I was able to create a shelter where the internal thermal gradient was typically no greater than -0.2°C difference from one interior side to the other over the course of the day. This was determined firstly by use of an infrared thermometer-scanner, and later confirmed by separate measuring with thermistors during actual



Figure 2. Exterior of Ventilated Thermal Shelter under a heavy tree canopy, with air-gap double-walls and protective shade panels.

experimental runs. It becomes quite essential, that there be *no great variance in internal air temperature, nor point-sources of IR heat* (as from the Sun) which would thereby skew the results.

Once the thermal shelter was prepared, I created a rotating pivot on the interior ceiling, and from this was suspended by ropes a platform composed of simple plywood measuring ~ 25 cm width and ~ 1.25 meter length. The ORAC and Control were placed on this plank about 1 meter distance from each other, at about 1 meter height. The orientation of the axis, and location of the ORAC and Control enclosures, could then be moved around, or the locations reversed, to evaluate the effects of environmental influences. This is seen in Figure 3.

In later experiments this whole platform would be put into slow rotation by a DC motor, of around 1 rotation per 3 minutes, so that both the ORAC and Control would be progressively exposed to whatever temperature variations existed inside the thermal shelter, from the various walls. In practice, this rotation system often malfunctioned, so it was used only intermittently, but it finally did produce some of the best results. Confounding problems existed with power black-outs from winter blizzards or summer thunderstorms, causing computer crashes and lost data. Occasionally on windy days there would be a significant flow of warm summer or cold winter air that

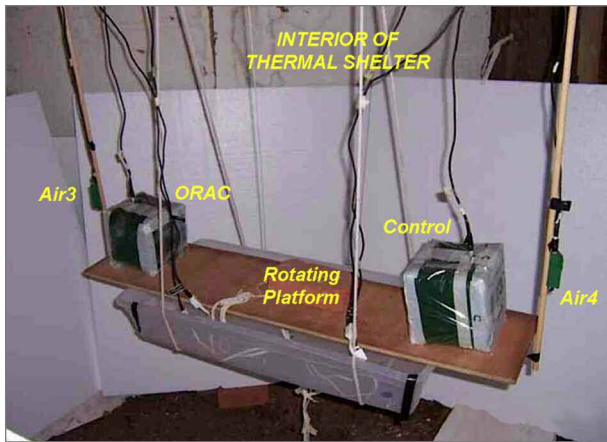


Figure 3. Interior of the Thermal Shelter, showing platform with ORAC and Control enclosures. Thermistors enter them from the top. Separate Air3 and Air4 thermistors are also attached to dowels at the far end of each platform. ORAC and Control are ~1 meter apart. White Styrofoam insulation panels are seen in the background, and these covered a full circle around the device, as well as above it.

would enter the interior of the ventilated shelter preferentially on one side, and skew the interior temperatures and the To-T results. This was determined by separate thermistors set to monitor the open air temperature near to both the ORAC and Control. The best results were consistently obtained on low-wind and low humidity summer days, during the Oregon dry season.

Thermistors used in the measurements were coupled to a Vernier Lab-Pro DAQ system, with a hard-wired remote USB connection to a laptop inside the main laboratory building, running Vernier Logger Pro software.⁴⁴ Once an experiment was up and running, the door into the thermal shelter was covered with opaque plastic and the interior remained dark and with only very diffuse light entering inside. Four thermistors were used, identified as the ORAC, Control, Air3, and Air4. These latter two thermistors were placed in the open air, covered only by a thin plastic tube with single felt-layer cover, to moderate against short-term fluctuations. These were positioned about 10 cm distant from the respective ORAC and Control enclosures, and at the same height, to monitor the actual air temperature differences within the thermal

shelter close to the two experimental enclosures. As I will note later, under the most satisfactory conditions – and this became a determinant between usable and non-usable runs -- the difference between the Air3 and Air4 thermistors was typically *less* than what was recorded from the ORAC-Control (or To-T) difference. When this Air3 and Air4 temperature difference became greater than around 0.2° all by itself, or being extremely variable, I considered that particular run as questionable even if it had a very positive To-T.

With all these considerations in place, one final step was necessary. Off the shelf, the thermistors (Vernier STS-BTA) would yield very stable readings over time for the same absolute temperature, but could be off from each other by as much as -0.2°C . Fortunately, the Vernier software allowed for electronic adjustments of their absolute readings. To evaluate and correct this factor, I created a special highly insulated Calibration Chamber, composed of nested Styrofoam boxes. All four of the thermistor probes were firstly inserted into a small clear-plastic pill box where they shared the same air within a tiny space of around 1 cm^3 . This plastic box was then inserted inside a Styrofoam enclosure, which in turn went inside the larger Styrofoam box, which was then sealed to prevent air intrusion. The overall Calibration Chamber was then placed into rotation on the same platform used for the experiments, inside the thermal shelter. The thermistor probe-wires then connected back through the DAQ system just as when an experiment would be run. During these calibration runs, I could monitor which, if any of the thermistors yielded higher or lower readings for the same absolute temperature inside the core of the Calibration Chamber. By adjusting the calibration values in the software, corrections could be made to each thermistor, bringing their values to within a remarkable -0.002°C of each other. This minimal variation was possible even as temperature varied over the course of the day and night, which could be as much as $\sim 10\text{-}20^{\circ}\text{C}$. Frequently, I would run the calibrations over several days and observed once being adjusted, they would retain the same values for the same absolute temperature for a considerable period. Once the calibrations were completed, the

actual experimental runs would begin. Without changing any of the electronics or settings, and with the full system continuing to run, I would carefully remove the thermistors from the Calibration Chamber and place them inside the ORAC and Control enclosures. The Air3 and Air4 thermistors were likewise placed into position, near to the ORAC and Control, and I would exit the shelter, cover the door, and the actual experimental measurement run would begin.

CONTROLLED MEASURES OF THE THERMAL ANOMALY

Once I had completed the calibrations and set-up for a run of measurements inside the thermal shelter, and departed back to the laboratory, typically it would take several hours for the thermal variations from my body-heat and handling of the thermistors to dissipate and stabilize. I could then study and review whatever thermal energy anomaly might be produced inside the ORAC relative to the Control. With the Air3 and Air4 thermometers in place, I could also monitor the effects of wind or Sun on the shelter's thermal dynamics. I also developed a method to mathematically compensate for smaller variations within the thermal shelter. When one side of the thermal shelter was warmer or colder than the other, determined by the difference between the Air3 and Air4 thermistors, I could subtract that environmental difference from the actual To-T to create a new value, of the Adjusted To-T. When winds were very light, the Air3-Air4 difference was within 0.1° to 0.2°C of zero. In those cases, one could say the conditions were optimal for the most significant determinations, and in fact the actual To-T and the Adjusted To-T was very close if not identical at those times. Presented below are several selected experimental runs made during those most exacting and optimal conditions.

Figure 4 for example, shows one selected 10-day run in 2008 where the ORAC and Control sat on the plywood platform inside the thermal shelter, but without any rotation of the platform. This was under light wind or no wind conditions, with clear skies and humidity lower than 50%. Under those conditions, the graphs show

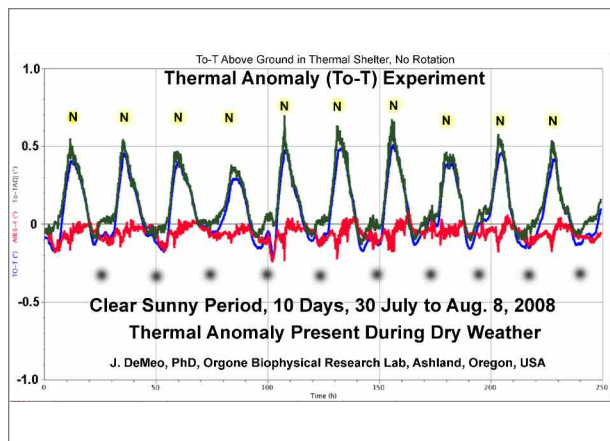


Figure 4. To-T in Clear Weather, Outdoor Thermal Shelter – thermal anomaly is present. N (with yellow dot) = Solar Noon, Grey dot = midnight.

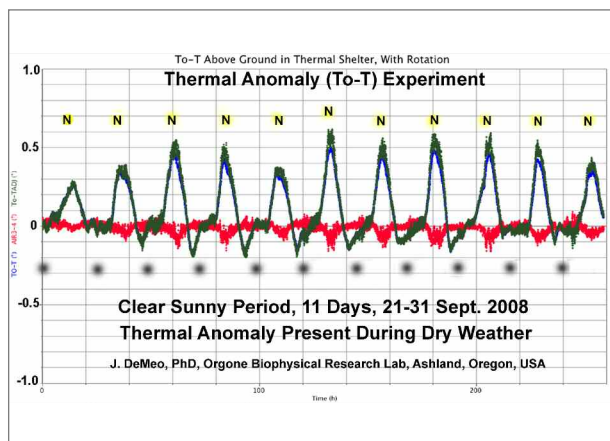


Figure 5. To-T in Clear Weather on Rotating Platform in Outdoor Thermal Shelter – thermal anomaly is present. N (with yellow dot) = Solar Noon, Grey dot = midnight.

persisting though cyclical positive To-T readings, given in the blue line. Here the ORAC developed an anomaly averaging around +0.088°C, and typically peaked around +0.5°C warmer than the Control at Solar Noon, with minima of approximately -0.1°C close to Midnight. The red line is the temperature difference between two air-exposed thermistors, Air3 and Air4 on opposite ends of the platform, indicating a natural thermal gradient within the shelter of an average -0.055°C, with the environment of the ORAC being that much cooler. This means, the actual temperature gradients inside the thermal shelter worked against the

To-T effect by this average -0.055°C . The green line provides the Adjusted To-T, which compensates for this gradient, yielding an average anomaly of $+0.143^{\circ}\text{C}$ ($0.088^{\circ} + 0.055^{\circ}$), with peaks up to around $+0.7^{\circ}\text{C}$. The blue To-T and green Adjusted To-T curves are quite close, and predominantly above the zero line, indicating an anomalous heat source entering the ORAC which is unrelated to the natural thermal gradient within the shelter.

In Figure 5, made several weeks later, the entire experimental platform was put into rotation, at about 1 rotation per 3 minutes, which immediately reduced the effects of thermal gradients within the shelter to about one-fifth of that without rotation, reducing the Air3-Air4 temperature difference down to an average of -0.011°C . Because of several days of overcast weather near the beginning and end of this particular run, the peak To-T on those days was also reduced, yielding an overall average of $+0.101^{\circ}\text{C}$, and an Adjusted To-T averaging $+0.112^{\circ}\text{C}$.

Neither of these temperature curves yield up the classical thermodynamic expectation of a zero or “null” effect, nor of a cooled or negative daytime To-T as from a blocking of diffuse and scattered thermal IR radiation within the thermal shelter, due to the reflective metal components of the ORAC. Nor is there any “thermal lag” effect, which would typically cycle over the 24-hour clock with readings above and below the zero line in equal proportions. Note that in early AM or full-daytime periods of Figures 4 and 5, the Air3 temperature, located only 10 cm from the ORAC, developed a cooling trend of between -0.1° to -0.2°C over the Air4, near the Control, indicating the environment was exerting a cooling effect upon the ORAC during those times when the To-T was nevertheless surging ahead and showing its maximums. But this raises the question, what would a data curve look like if there was no orgone energy thermal effect at work? What if we accept the narrow classical argument that the ORAC and Control were merely two “empty boxes” of no significance other than being of similar thermodynamic construction? We can answer this question by reviewing their thermal

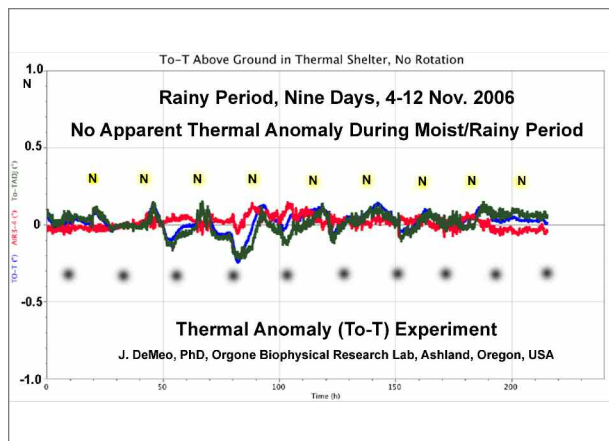


Figure 6. To-T, Rainy Wet Weather, in Outdoor Thermal Shelter (no platform rotation) – thermal anomaly has vanished. A strong cold-front passed through the area on the third day, resulting in a slight mechanically-produced thermal perturbation. Otherwise, the graph is close to zero and insignificant. N (with yellow dot) = Solar Noon, Grey dot = midnight.

behavior during long periods of rainy and overcast weather, when orgone energy effects are minimal or absent. During those times, the ORAC essentially becomes an “empty box” without orgone energy effects. Figure 6 shows a trace made over 10 days between 4-13 Nov. 2006, when constant overcast, drizzle and very high relative humidity prevailed, and the To-T effect basically vanished. At those times, by Reich’s theory and all prior experimental determinations, orgone energy is bound up by atmospheric water vapor, and by the liquid water saturating the soil and landscape. In this wet-environment experiment, we basically document the thermal dynamics of two “empty boxes”, ORAC and Control, in the absence of any significant orgone energy effects. And indeed, under this condition, with the same exact set-up and operation, there is no To-T effect apparent. The thermal anomaly for this *wet-environment* graph averaged at $+0.021^{\circ}\text{C}$, while the Air3-Air4 difference was at $+0.014^{\circ}\text{C}$, and the Adjusted To-T was a fully insignificant $+0.007^{\circ}\text{C}$.

DISCUSSION

The data in Figure 6 from a wet period was obtained when we do not expect to see any significant To-

T effect, and the relatively flat nature of that data graph is itself a confirmation of the basic methodology, and accuracy of the original empirical testing and calibrations used for construction of the experiment. Had there been some major error in the construction of the ORAC versus the Control enclosures, such that their thermal resistance or heat capacity was significantly different, or if the calibration procedures were inaccurate or faulty, then the data displayed in Figure 6, acquired under conditions when *no* orgone energy effects were anticipated, is where we should expect to see such errors expressed. Daily temperature variations, from night minima to daytime maxima on this particular run of wet conditions were from 5° to 12°C daily, which is similar to what existed in both the prior two graphics Figure 4 and 5, under dry conditions of clear positive To-T effects, which both had daily variations of around 8° to 14°C. This also was indicative, the positive To-T readings were not due to thermal-lag reactions to diurnal temperature variations. The To-T is not created by mechanical temperature bias due to slight differences in the thermal properties of the two enclosures. If that were the case, we would see a significant oscillating temperature mimicking the To-T even during wet periods, due solely to daily temperature variation. This never happened. Wet conditions always extinguished all but the most insignificant thermal variations. Figure 6 thereby provides added support to the anomalistic nature of measurements in Figures 4 and 5, where a clear and positive To-T was obtained under the exact optimal conditions when we expect the orgone

accumulator to generate a high charge inside itself.

Table 1 summarizes these overall results, which show the Average To-T values for the two dry periods of higher orgonotic charge to be from 4 to 5 times as great as during the wet periods of no anticipated orgonotic effects. The Adjusted To-T shows an even larger difference, the dry periods of expected high charge yielding a thermal response from 16 to 20 times as great as during the wet periods of no anticipated orgonotic effects.

There is yet another even more telling factor in the To-T data indicating the thermal anomaly is not the product of mere “solar heating” either, as might be considered given how the data has a diurnal periodicity (and ignoring for the moment, the significant shading and insulation provided by the thermal shelter). Significantly, note the locations of the yellow dots which mark Solar Noon, and the grey dots which mark Midnight. This also is anomalous as it shows the ORAC is peaking out in temperature not at the hottest time of day, which occurs some 3-4 hours later, nor bottoming out at the coldest time of the night, just before sunrise.

In both Figure 4 and 5, the temperature anomaly increases in the daytime and peaks out at solar-noon, even though the experiment proceeds in near-darkness inside the shaded and insulated thermal shelter. The yellow dots on the graphs mark those points of Solar Noon, over the ten-day period, while midnight is

Table 1: Summary of Results

	Average To-T	Air3-Air4	Adjusted To-T	Extremes
Figure 4 Dry Conditions	+0.088°	-0.055°	+0.143°	Max. ~+0.7° Min. ~-0.25°
Figure 5 Dry Conditions	+0.101°	-0.011°	+0.112	Max. ~+0.6° Min. ~-0.2°
Figure 6 Wet Conditions	+0.021°	+0.014°	+0.007°	Max. ~+0.15° Min. ~-0.25°

identified by the grey dots. Significantly, the peak daytime air temperature of 3-4 PM showed no discernable influence on the To-T readings, and the minima is similarly anomalous, trending towards zero anomaly at the time of midnight. Therefore, the minimum night air temperature of 5-6 AM, just before sunrise, showed no effect upon the measured To-T minima either, and the steady increase in To-T during the early AM hours is one of the more interesting aspects of the anomaly. The ORAC gradually loses its interior heat source from noon towards midnight, but then picks up again, as if a tiny and growing heat source has returned; this continues from midnight towards a peak at noontime, after which it falls off once again.

This indicates, *the ORAC is responding to some factor related to the absolute position of the Sun in the sky, rather than merely to the effects of solar-heating at the Earth's surface.* Somehow, without any direct thermal influence, the experiment can detect when the Sun is directly overhead, or even more significantly, underfoot at midnight.

Over many runs of this experiment, I never saw even once a purely mechanically-determined temperature curve, peaking at the hottest time of day and bottoming-out during the coldest. The anomaly reveals a pulsatory diurnal effect, suggesting a *non-thermal solar excitation influence directly upon the background orgone energy ocean.* The To-T curves factually correlate with tidal forces related to gravitation, something which Reich's own work led him to postulate.⁴⁵ I should also note, this kind of solar-noon diurnal influence has also been noted by biologists and naturalists, who have argued for a tidal influence upon biological clock cycles.^{46,47} From geology and meteorology we also have long-time evidence of tidal forces influencing the Earth's crust and atmosphere, in ways which are not always so straightforwardly understood as mere products of gravitation alone, which itself remains a point of great mystery to natural science.

We do not anticipate ordinary ferromagnetic metals layered with high dielectric insulators – be it described

as a *hollow capacitor* or *orgone accumulator* – to produce heat inside itself, nor does classical physics give us any hint as to why this might occur. The ORAC and Control enclosures, balanced in construction as they are, should behave nearly identically so far as classical physics is concerned. And they do, but only during wet periods when no orgone energy effects are present. During dry periods, the orgone accumulator functions exactly as Reich described.^{26,42}

While the magnitudes of the To-T effect demonstrated here are small, in only tenths of a degree, they are still consistent and up to 20 times greater than what classical thermodynamics alone will produce in the same apparatus – as seen in Figure 6 and Table 1. To better understand this thermal anomaly, we must give credence to Reich's original theories on the matter, and likewise consult the voices of those radical scientists of the 20th Century whose work provides independent support for this more dynamic view of nature. While space does not allow discussion, I would especially point to the discoveries of Frank Brown, Giorgio Piccardi, Harold Burr, and Dayton Miller.^{30,31,46,48,49} Elsewhere, I have presented entire lists of such dissenting scholars and scientists whose work gave support in this direction, and so unhesitatingly assert that Reich was not alone in proclaiming the existence of such a dynamic and ubiquitous cosmic energetic phenomenon.⁵⁰

My results therefore confirmed Wilhelm Reich's original findings on the thermal anomaly within the orgone accumulator, as well as to validate the prior confirmations of others. This confirmation is beyond all known thermodynamic expectations, and is now documented in a most carefully-conducted experimental protocol. There is no other known cause for the anomaly, other than a true and real effect of the orgone energy, or something very similar to it. This being the case, it is yet another call for an open scientific and medical reappraisal of Reich's larger body of work.

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CORRESPONDENCE: James DeMeo, PhD,
Orgone Biophysical Research Laboratory, Ashland, Oregon, USA
demeo@mind.net www.orgonelab.org www.saharasia.org

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