Experimental

EXPLORING ROBUST INTERACTIONS BETWEEN HUMAN INTENTION AND INANIMATE/ANIMATE SYSTEMS[1]

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ABSTRACT

Based on the present paradigm, the conventional viewpoint is that humans cannot meaningfully interact, via their intention, with target experiments. Even more strongly one would state that human intention cannot possibly be captured in a simple electronic device and then have the device meaningfully interact with target experiments. Over the course of the past two years, the authors have conducted three very different target experiments using Intention Imprinted Electronic Devices, (IIEDs) and found robust interaction between these simple devices and the target experiments in complete opposition to the view of the prevailing paradigm. On the experimental side, for each target experiment one starts with two identical physical devices, isolates one from the other, and "charges" one with the specific intention for the particular experiment. This charging process involved the services of four highly qualified meditators to imprint the device with the specific intention. The devices with the same imprint were then wrapped in Al-foil and stored in an electrically grounded Faraday cage until the next step in the process. Next, when needed, the Al-foil wrapped devices were separately shipped via Federal Express, to their laboratory destination about 2,000 miles away. On arriving there, they were immediately placed in separate, grounded Faraday cages until use in the actual target experiments conducted by others. For the three target experiments, the general intentions were (1) to decrease (increase) the pH of water by one pH unit, (2) to increase the ATP/ADP ratio in fruit fly larvae so as to significantly decrease the larval development time and (3) to significantly increase the thermodynamic activity of the specific liver enzyme, alkaline phosphatase (ALP). For target experiment (1) changes of about 0.5 to 1.0 pH units increase or decrease, with a measurement accuracy of $\pm$ 0.01 pH units, was achieved. For target experiment (2), reductions of about 15% in larval development time for the imprinted vs. unimprinted device were observed ($p < 0.001$). For target experiment (3), increases in thermodynamic activity for ALP of about 10% to 20% were achieved ($p < 0.001$). In pure water containing small solid particles, pH oscillations of both short (about 1 hour) and long (about 20 hour) periods were observed. In multiple vessel studies with the IIED located only near one vessel, the following was observed: (a) a strong correlation in pH-oscillation behavior between the IIED-vessel and other simultaneously pH-monitored vessels located 115 feet to 155 feet distant, (b) a location-specific conditioning behavior associated with repeated running of the target experiment day after day, at that specific location, and (c) the presence of temperature oscillations in-phase with the pH-oscillations in the vessels. Fourier transforms of the various real-time plots were utilized to quantify the correlations.

KEYWORDS: Intention, pH, temperature, *Drosophila*, energy metabolism, enzyme activity

INTRODUCTION

The prevailing paradigm for science and technology is that focused human intention cannot meaningfully interact, at an energy/information level, with specific target experiments and even less so via an intermediary electronic device. Abundant historical technological and present-day experience with expert systems, computer-aided design, etc., buttresses this viewpoint. This has led humanity down a reductionist and materialistic path. On the other hand, one can certainly conceive of a society whose consciousness is sufficiently developed that their focussed intentions would robustly influence specific target experiments. Such a condition would require the development of a new paradigm and would indicate that a significant transformation had occurred in the human species. Such a species would further evolve down a very different path.

Over the course of the past two years, the authors have conducted three very different target experiments using intention imprinted electronic devices (IIEDs) and found robust interaction between these simple devices and the target experiments in complete opposition to the view of the prevailing paradigm. Whether or not this indicates a cosmological change, destined to move humanity toward this alternate path of evolution, it is too early to say. However, it seems clear that consciousness-directed intention must be incorporated into any new paradigm and that is the overview focus of this paper. Part I is a review of some of our recent experimental work on this subject.[2-10] Our theoretical perspective on these new phenomena is given in Part II of this series.[11]

On the experimental side, for each target experiment, one starts with two identical physical devices, isolates them from each other and "charges" one with the specific intention for the particular experiment. This charging process involved the services of four highly qualified meditators to imprint the device with the specific intention. The devices with the same imprint were then wrapped in aluminum foil and stored in an electrically grounded Faraday cage until the next step in the process. Next, when needed, the aluminum foil wrapped devices were separately shipped, via Federal Express, to their laboratory destination 2000 miles away. On arriving there, they were immediately placed in separate, grounded Faraday cages until use in the actual target experiments conducted by others.

For the three experiments, the intentions were (1) to decrease (increase) the pH of water by one pH unit, (2) to increase the ATP/ADP ratio in fruit fly larvae so as to significantly decrease their development time, and (3) to significantly increase the thermodynamic activity of the specific liver enzyme, ALP. For (1), changes of 0.5 to 1.0 pH units were achieved while, for (2), reductions of 15% in larval development time for the imprinted vs. unimprinted device were observed ($p < 0.001$) and, for (3), increases in thermodynamic activity of 10% -20% were achieved ($p < 0.001$).[5,6,8] Further, in subsequent water plus small particulate solutions, pH-oscillations of both short and long periods were observed. In multiple vessel studies with the IIED located only near one vessel, the following was observed:

(a) strong correlation of pH-oscillation behavior between the IIED-vessel and other monitored vessels located ~ 115 ft. to 155 ft. distant,

(b) a location-conditioning behavior associated with repeated running of the experiment day after day, and

(c) the presence of temperature-oscillations correlated with the pH-oscillations.[7] All of these observations point to the presence of a time-dependent pattern of coherence that develops in the water in association with the use of an IIED in the "on" state.[5]

In Part II of this series, we discuss these results and also address many of the issues associated with (1) the device imprinting procedures, (2) effective isolation of imprinted and unimprinted devices, (3) retention time of intention charge, (4) conditioning of the experimental site, (5) the necessary and sufficient set of experimental conditions needed to assure repeatability of our results by others, (6) a theoretical basis for understanding, or at least rationalizing, these experimental observations, and (7) the philosophical significance of these results for evolving humanity.[11]

EXPERIMENTAL PROCEDURES

In each of the target experiments, two physically identical devices were used but one was imprinted with human intention while the other was not. The physical size of the plastic case housing the electronics is ~ 7 in. x 3 in. x 1

in. The electric circuits utilized are quite simple as can be seen from Figure 1. They basically involve only an E PROM memory component, an oscillator component (1-10 MHz range), no intentional antenna, and either line voltage or battery power supply. The total radiated electrical power is less than ~ 1 μ watt. Both the unimprinted and imprinted devices were individually wrapped in aluminum foil and separately stored in individual electrically grounded Faraday cages for energy/information isolation purposes. They were taken out and unwrapped only for use in their target experiment and then rewrapped and returned to their own Faraday cage until their next test.

The actual imprinting procedure for a particular target experiment was as follows:

(a) place both the single-oscillator and the three-oscillator devices along with their current transformers on a table around which the imprinters sit,

(b) four people (two men plus two women) who were all accomplished meditators, coherent, inner self-managed, and readily capable of entering an ordered mode of heart function plus sustaining it for an extended period of time, sat around the table ready to enter a deep meditative state,

(c) a signal was then given to enter such an internal state, to cleanse the environment, and create a sacred space for the intention. Then, a signal was given by one of the four to put attention on the table-top objects and begin a mental cleansing process to erase any prior imprints from the devices,

(d) after 3 or 4 minutes, another signal was given to begin focusing on the specific prearranged intention statement for about 10-15 minutes,

(e) next, a final signal was given to shift focus to a closing intention designed to seal the imprint into the devices and minimize leakage of this essential energy/information from the devices. This completed the process so the four people withdrew from the meditative state and returned to their normal state of consciousness.

It should be obvious to the reader that a wide variety of options and variants exist with respect to the erasing, imprinting, and sealing phases of the overall treatment process for these devices. The specific intentions used for the three target experiments reported on here are:

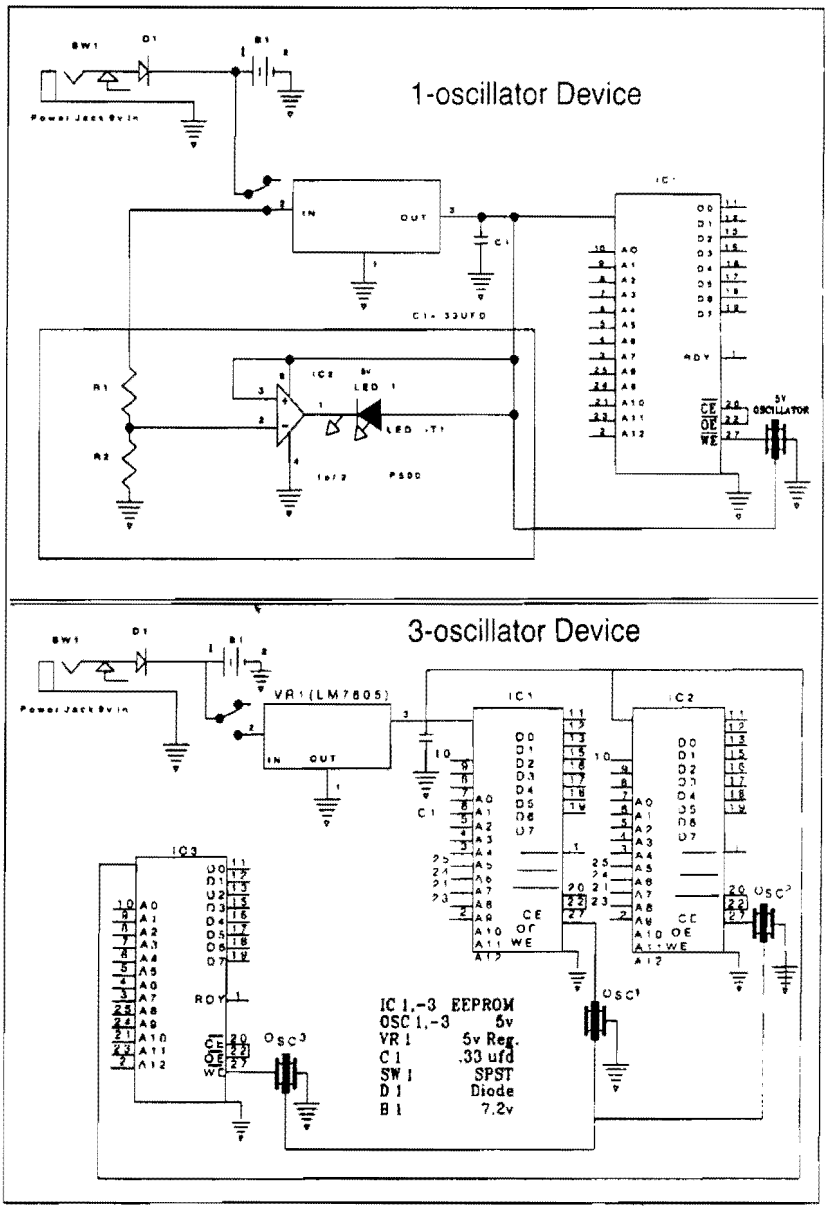

Figure 1. *Ciruit diagrams for single- and three-oscillator devices used as host devices for intention imprinting.*

Water Experiment

To activate the indwelling consciousness of the system so that the IIED decreases (or increases) the pH of the experimental water by one pH unit compared to the control; i.e., increase (or decrease) the H^+ content of this water by a factor of 10.

Fruit Fly Experiment

To synergistically influence (a) the availability of oxygen, protons, and ADP (adenine diphosphate) and (b) the activity of the available concentration of NAD (nicotinamide adenine dinucleotide) plus the activity of the available enzymes, dehydrogenase, and ATP-synthase in the mitochondria so that the production of ATP (adenine triphosphate) in the fruit fly larvae is significantly increased (as much as possible without harming the life function) relative to that of the control sample.

Enzyme Experiment

To activate the indwelling consciousness of the devices so as to increase by a significant factor (as much as possible), the thermodynamic activity coefficient of the specific liver enzyme, alkaline phosphatase. This activity coefficient increase is to occur relative to the same type of experiment conducted with unimprinted devices.

The apparatus for each of the three experiments was as follows:

Water Target Experiment. Figure 2 provides a schematic illustration of the equipment involved in the pH measurement system. An Accumet 50 pH meter was utilized with fast-response, high performance, combination electrodes with automatic temperature compensation. The measurement accuracy was +0.01 pH unit while calibration involved the use of buffer standards, pH 4, pH 7 and pH 10 (two of these were used depending on the pH of the solution). Measurements were made by placing the electrode in unstirred solution and recording the pH-time variation until a stable value was approached.

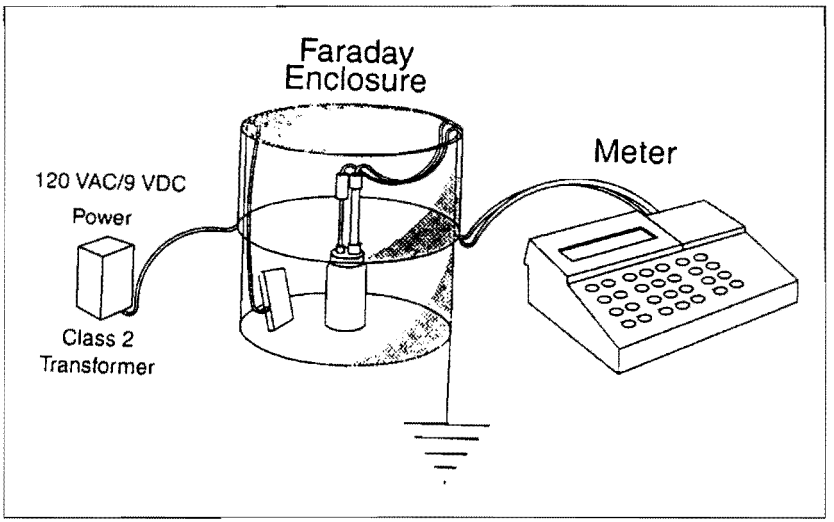

Figure 2. *Schematic drawing of experimental set-up used in simultaneous device exposure and pH measurement experiments.*

The four waters utilized in these experiments were

(a) commercial bottled Evian water, which is a Ca/Mg bicarbonate solution of initial pH = 7.00 with total dissolved solids of 300 mg/l and $[Ca^{++}]/[Mg^{++}] = 3.2$;

(b) commercial bottled Castle Rock water, which is also a Ca/Mg bicarbonate solution of initial pH = 7.10, total dissolved solids of 95 mg/1 and $[Ca^{++}]/[Mg^{++}] = 2.0$. This water was diluted 50/50 with ASTM type I purified water to ensure that no Ca/Mg carbonates precipitated during the course of the experiments;

(c) ASTM Type I purified water and

(d) ASTM type I purified water containing 4 gm/1 of fine $ZnCO_3$ crystallites (a little larger than typical colloid size).

After sample preparation, the solution was poured into several polypropylene bottles, with at least one always saved as a control. For storage and awaiting

testing, bottles with any variation in their history were placed in their own electrically grounded Faraday cage constructed from a fine mesh copper screen (0.16" grid).

The earliest experiments were conducted with the Evian water and took place at Stanford University. Because we didn't know much about what to expect, the water was treated with the device in one building and then walked 150 feet to another building for measurement. It was thought that separation of the two steps would be advantageous. However, the imprint retention was not as robust in those early days, we didn't appreciate the importance of conditioning the local environment for this class of experiment, and we introduced the variable of uncontrolled physical convection into the protocol. With the passage of time and repeated experiments, we sorted out the various factors involved and conducted the experiments in a single location with simultaneous water exposure to a device and pH measurement. With time, the experiments moved away from the use of Evian water because of the variable and thus uncontrollable degree of Ca/Mg carbonate precipitation involved. Later experiments with $ZnCO_3$ crystallites did not suffer from this problem because $ZnCO_3$ is only very sparingly soluble in water.

Fruit Fly Target Experiment

This study involved 10,000 larvae and 7,000 adult flies assessed over an 8-month period.[6] Larval development time, $t_{1/2}$, the time taken for half the surviving adults to emerge, was measured at 18°C and 55% RH. There were three experimental variants with respect to the control culture (*C*) placed on a typical lab bench top. These were, (*F*) an identical culture in a Faraday cage with no device present, (*d, o*), an identical culture in a Faraday cage with an active unimprinted device present and (*d, j*), an identical culture in a Faraday cage with an active imprinted device present. All treatments were placed next to each other on a laboratory bench at 18 °C and the experiments conducted simultaneously.

The particular device was placed in the center of a Faraday cage with vials placed around the perimeter 15 cm away (see Figure 3). At the end of a specific time interval, the device was turned off and removed from this cage.

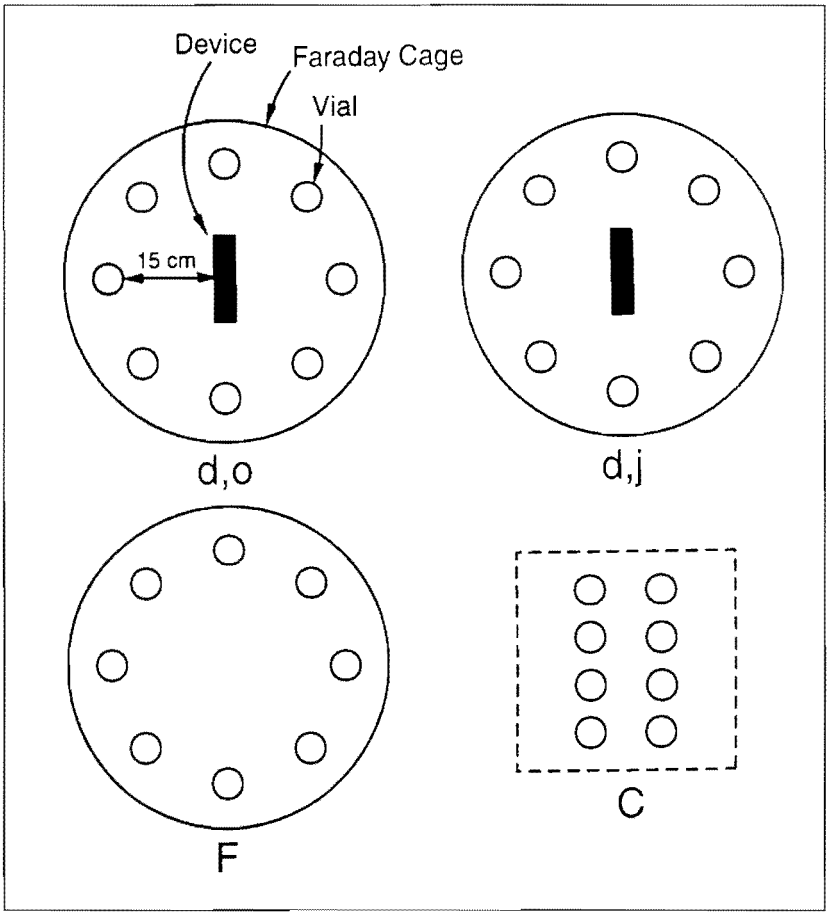

Figure 3. *Experiment configuration utilized in the Fruit Fly Experiments. The study involved three simultaneous experimental variants with respect to the control culture (C): (1) an identical culture in a Faraday Cage with no device present (F), (2) the same as (1) but with an unimprinted device at cage center present (d, o), and (3) the same as (1) but with an imprinted device at cage center present (d, j).*

The larval development continued. A single replicate involved 30 larvae (0-4 hr. old) transferred to a vial containing nonstressful food. The vials were monitored daily and surviving adults collected. There was a minimum of 15 replicates (vials) per treatment.

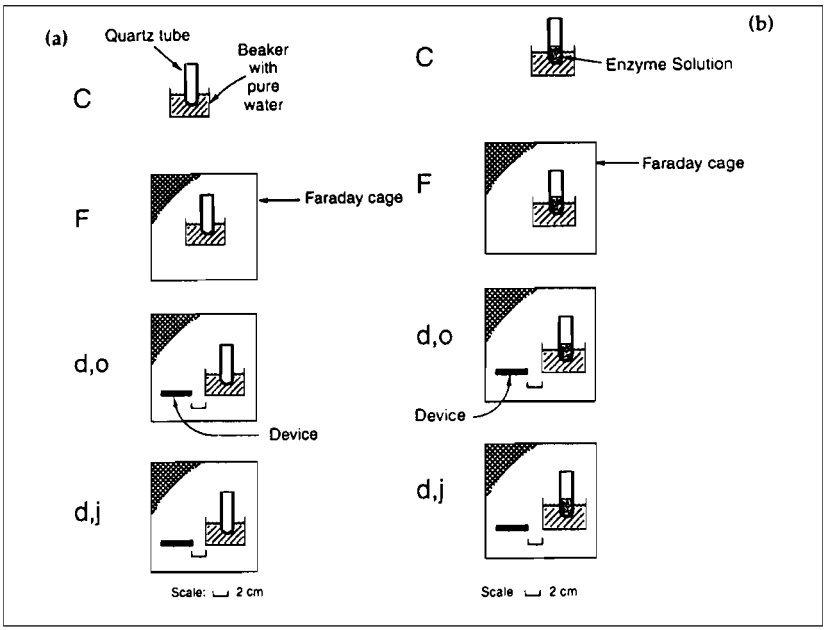

Figure 4. *Experiment configuration utilized in the alkaline phosphatase activity study. (a) A core experimental system comprising 100 ml empty quartz tubes placed in beakers containing 100 ml pure H_2O was utilized for the initial treatment and (b) ALP solution was added to the quartz tubes for the secondary exposure.*

The [ATP]/[ADP] ratio for these flies was measured in the presence of (1) supplemental pure H_2O or (2) supplemental 0.01M NAD. The ATP, ADP, and AMP were extracted using 4.2M formic acid and 4.2M ammonium hydroxide. Quantification was made via an automated Isco HPLC unit, a VYDAC column and a pre-programmed gradient from 0.025M to 0.5M sodium phosphate monobasic (pH = 2.8). There were eight replicates per treatment for both supplemental NAD and pure H_2O.

Enzyme Target Experiment

Once again, as in B, three comparison treatments occurred, (*C*) with (*F*), (*d, o*) and (*d, j*).[8] The local enzyme-vessel arrangement is shown in Figure 4. The protocol utilized was to expose the water and quartz tubes without the enzyme

to the four treatments for a period of two days. Next, with the ALP solution present, all treatments were exposed for 30 minutes. Three dilutions of the ALP, 100 µl ALP solution plus 150 µl pure H_2O, 200 µl pure H_2O and 250 µl pure H_2O, were studied. After this, the ALP activity was measured.

The enzyme activity was measured using the VITROS DT60 chemistry system with the DT6O11 analyzer and DTSC11 module from Johnson & Johnson Clinical Diagnostics Inc. This system gives results in 2-5 min. The VITROS DT controls are available as vials of frozen lyophilate and serum. Enzymes are present in the lyophilate with the ALP being derived from porcine kidney.

The VITROS ALP-DT slide is a dry multilayered film in a plastic support. In 10 µl of serum or plasma, it contains all the reagents needed to determine thermodynamic activity. The primary reaction is based on ALP catalyzing the hydrolysis of p-nitrophenyl phosphate to p-nitrophenol. The p-nitrophenol then diffuses to an underlying layer where its concentration is monitored by reflective spectroscopy.

EXPERIMENTAL RESULTS

Water Target Experiment

Early experiments at Stanford with Evian water and pH-lowering devices showed us three things,

1. An intention-induced pH effect was present (see Figure 5) although not nearly as large as intended because of unanticipated Ca/Mg carbonate precipitation,

2. One could see a time-dependent growth and decay of a unique pH-signature that appeared to be related to both gradual local environment conditioning and gradual leakage of the "imprint-charge" from the IIED over a two-month period (see Figure 6 for about one month's variation) and

3. A clearly distinguishable difference was apparent in the coherence in the pH-data between the water treated with an active *unimprinted* device (relatively incoherent) and an active imprinted device (much more coherent). This difference is illustrated in Figure 7 with the day-by-day pH-plots after exposure of the water to these devices.

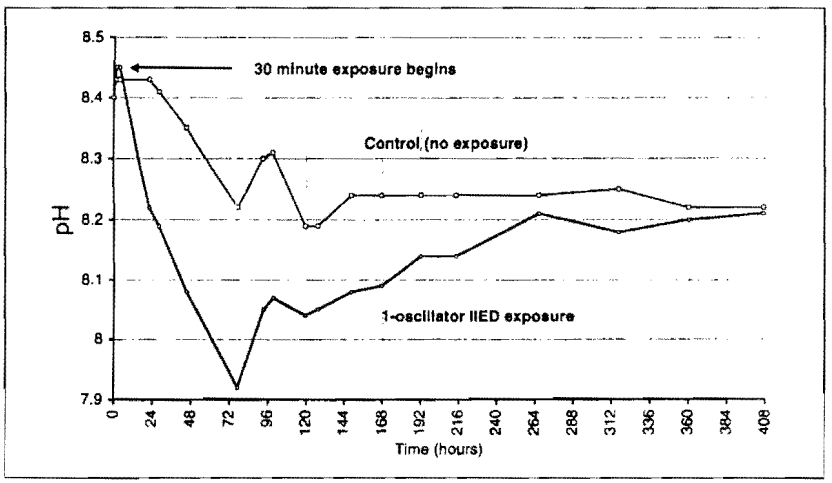

Figure 5. *pH vs. time for stirred undiluted Evian water with 30-minute device exposure.*

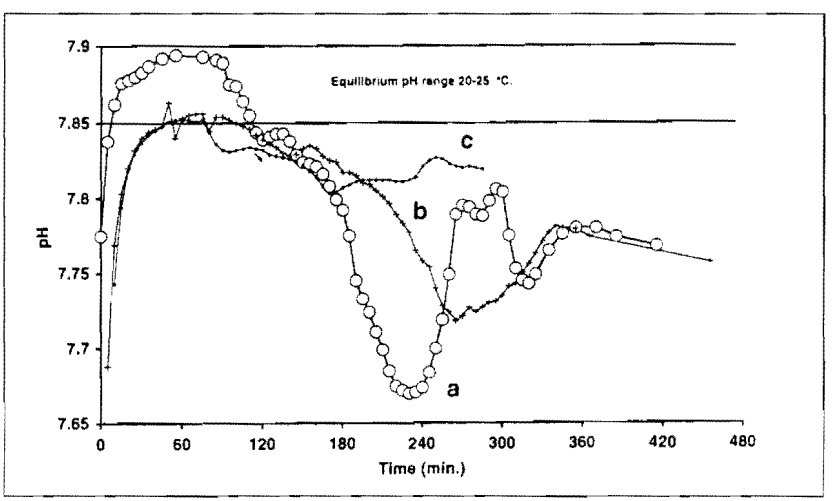

Figure 6. *pH vs. time for the same vessel of water over an 8-hour period on various dates and with a simultaneous 2-4 hr. exposure to a 3-oscillator imprinted device on each of the following dates (50/50 dilution of Castle Rock water with ASTM Type I purified H_2O): (a) Large circles, 6/23/97, 2hr. exposure, (b) crosses, 7/13/97, 4hr. exposure, (c) small circles, 7/20/97, 2/5 hr. exposure,. The dynamic pH values enter the equilibrium range in just a few minutes after the electrode is placed in unstirred solution and remain in this range for months in the absence of exposure to imprinted devices or to solutions previously exposed to imprinted devices.*

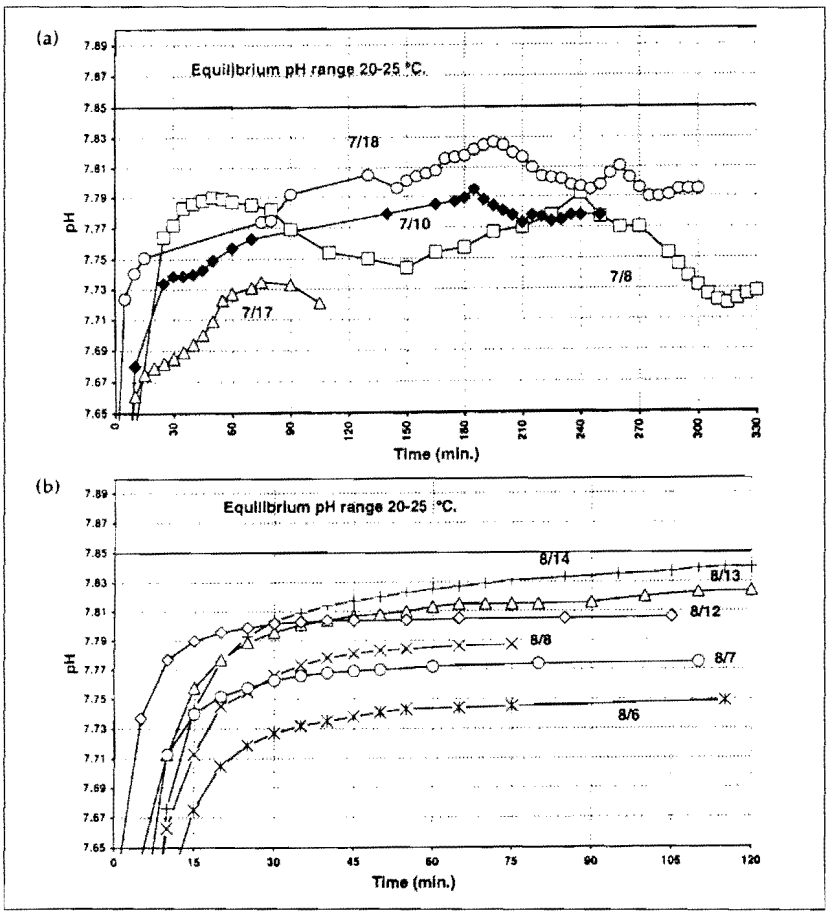

Figure 7. *pH vs. time for 50/50 dilution of Castle Rock water with ASTM Type I purified water. (a) exposure to an unimprinted 3-oscillator device for 2 hours on 7/7/97 with measurement on subsequent days. (b) exposure to an imprinted 3-oscillator device for 2 hours on 8/5/97 with measurement on subsequent days. In all cases time zero was selected to be 9 a.m.*

The 50/50 Castle Rock water plus ASTM Type I purified water experiments, initially conducted at Stanford and continued in Minnesota with pH-lowering devices, eliminated the uncontrolled Ca/Mg carbonate precipitation and allowed large, robust pH changes to be recorded. This is illustrated in Figure 8 for the two cases, (a) simultaneous water exposure to an active IIED and pH measurement over a 5-day period and (b) a preliminary 5-day exposure to the

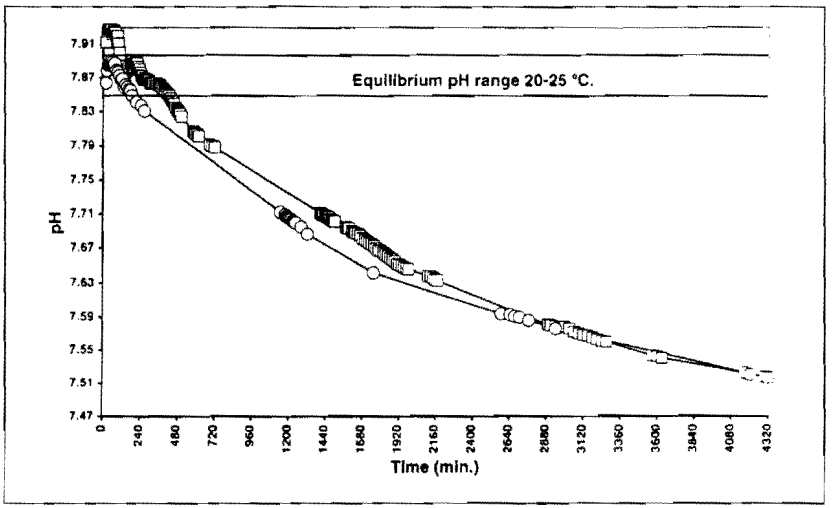

Figure 8. *pH vs. time for 50/50 dilution of Castle Rock water with ASTM Type I purified water. Exposure to an imprinted 1-oscillator device with simultaneous pH measurement for the data points depicted by squares but 5-day pre-exposure followed by subsequent pH measurement for data points depicted by circles*

active IIED without pH measurement, removal of the active IIED to its Faraday cage and then continuous pH measurement of this pretreated water. The similarity of the two curves seems remarkable.

To prove that IIEDs are not limited to pH-lowering effects, IIEDs with pH-raising intention were next prepared in California and shipped to the Minnesota lab for testing with 100% Type 1 purified water. Figure 9 shows the very first piece of experimental data obtained with these newly prepared devices. It was most satisfying to see that a ΔpH of one full pH unit had been achieved. Comparable data of this nature was observed over the next three-fourth months as the imprint charge slowly leaked from the devices.

To further test the idea suggested from previous work that the imprinted water (after treatment by an active IIED) might transfer an imprint-effect to crystals grown from that water which, in-turn, might transfer the imprint-effect to fresh water, we utilized some of the Ca/Mg carbonate crystals from the Evian water studies. These crystals were carefully washed and then added to a vessel of new, untreated water. The crystals dissolved in this water and transferred the

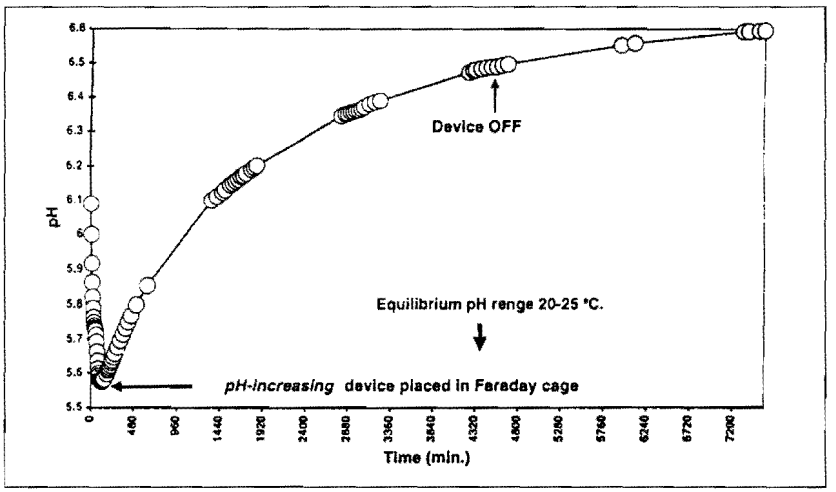

Figure 9. *pH vs. time for 100% ASTM Type I purified water simultaneously exposed to an imprinted device with pH-increasing intention.*

imprint-effect to this fresh water. However, even though a transfer-effect had been observed, was it due to partitioning of the original imprint to these crystals as they grew from the imprinted solution, or was it merely due to entrainment of some of the original water at defect surfaces in these crystals formed as a consequence of their uncontrolled mode of growth? Further, because of unanticipated metastable phase formation from uncontrolled solution supersaturation and precipitation, even if real imprint partitioning had occurred, we didn't know which crystalline phase was the culprit. To correct this deficiency, we set about to carefully grow specific crystals under well-defined conditions so as to test this partitioning hypothesis. The sparingly soluble material, $ZnCO_3$, was chosen as the first test material and, during the course of that investigation, a phenomenon arose that sent the experimentation down a different path. Thus, the crystal-partitioning study is unfinished but this new phenomenon to be described below, has been diligently pursued.

As a consequence of the $ZnCO_3$ crystal growth experiments, we began to add fine particles of commercially available, sparingly soluble $ZnCO_3$ to purified water and performed a variety of experiments with a solution containing 4 g/l of fine $ZnCO_3$ particles (having a surface area of 21.4 m^2/gm). Although the new phenomenon could sometimes be obtained with no $ZnCO_3$ particles

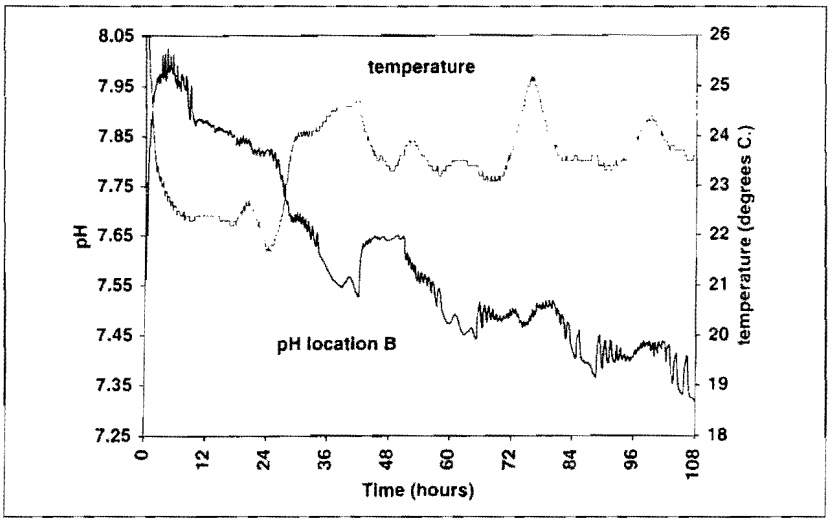

Figure 10. *Temperature and pH versus time plots for vessel at location B. Vessel at location B contained 250 ml pure water and 1 g $ZnCO_3$ crystallites from a commercial source. Vessel at location A, 150 feet away, contained the same $ZnCO_3$ crystalites but was exposed to a pH-lowering imprinted device. pH measurements at B began two days after the IIED was powered at location A.*

present, it was almost a constant phenomenon when the $ZnCO_3$ particles were present in the water. This new phenomenon was the appearance of both low frequency and appreciably higher frequency oscillations in the pH-time curves (see Figure 10).[7] Such oscillations in pH should not be possible according to the second law of thermodynamics in systems close to or at equilibrium.

The results of Figure 10 were generated via a particular two-vessel experiment. Vessel A contained a solution of ASTM Type I pure water plus 4 g/l $ZnCO_3$ particles with an IIED about one foot away. Vessel B was 150 ft. away in another building, contained the identical type of solution with solid particles, and was simultaneously pH-monitored and temperature-monitored but had no IIED nearby. As can be seen from Figure 10, at location B, the long-period oscillations, τ_L exhibited $\tau_L \geq 20$ hours while the short-period oscillations, τ_S, are reduced by a factor > 10. A particularly interesting highly periodic short-period oscillation train with diurnal repetition can be observed between 65 and 108 hours in Figure 10. The damped followed by undamped series of oscillations repeats on two consecutive days.

In further experiments, a new transmitting station (location C) was established about 115 feet from location B in another building. Similar to the A-B transmission series, a pH-lowering device was placed at location C about one foot from a vessel containing pure water with $ZnCO_3$ particles as above. There was no IIED present at location B following the previously established protocol. The inset in Figure 11a is a magnification of a portion of the τ_S-oscillation profile from this C-B transmission experiment, while Figure 11b is a further magnification to illustrate the highly periodic nature of these oscillations.[7] Figure 11a gives the Fourier amplitude spectrum for the data shown in the inset. Here, one can note an exponential-like intensity decay with increasing frequency wherein the fundamental period is $\tau_S \sim 64$ min.

Although the τ_L-oscillations appear to be connected to either diurnal, solar, or lunar rhythms, the τ_S-oscillations appear to be connected to the activation (on) vs. deactivation (off) of the IIED. The results shown in Figure 12 are from simultaneous pH measurements in two vessels, B and C, with exposure of vessel C to an imprinted pH-lowering device 115 feet from B. Both vessels contain pure water with $ZnCO_3$ particles as above. In Figure 12 (a and b), by comparing the pH-time curves for locations B and C, one notes that a kind of "beating" correlation exists between the two systems wherein B appears to periodically move in and out of relative phase coherence with C.

Another interesting observation is presented in Figure 13. Here, we see in another experiment, the pH-time curves for locations B and C with a small amount of correlation between them but, because the IIED close to C has been turned on, one expects the plot for B to be generally decreasing and it is not. However, by shaking vessel C, an abrupt and substantial decrease in $(pH)_C$ occurs with accompanying large amplitude τ_S-oscillations over subsequent days while nothing particularly significant happens to $(pH)_B$. The shaking of vessel B ~ 24 hours later produced an abrupt decrease in $(pH)_B$ even though no active IIED was close to B. Again, as in $(pH)_C$, the τ_S-oscillation amplitude increased in vessel B after its shaking event.

In Figs. 14a and b, one sees simultaneous pH and temperature measurements in vessel B with exposure of a similar vessel to an imprinted pH lowering device at location C 115 feet away in a different building. Again, as before, the two vessels contain 1g $ZnCO_3$ particles in 250 ml pure water. Without the IIED

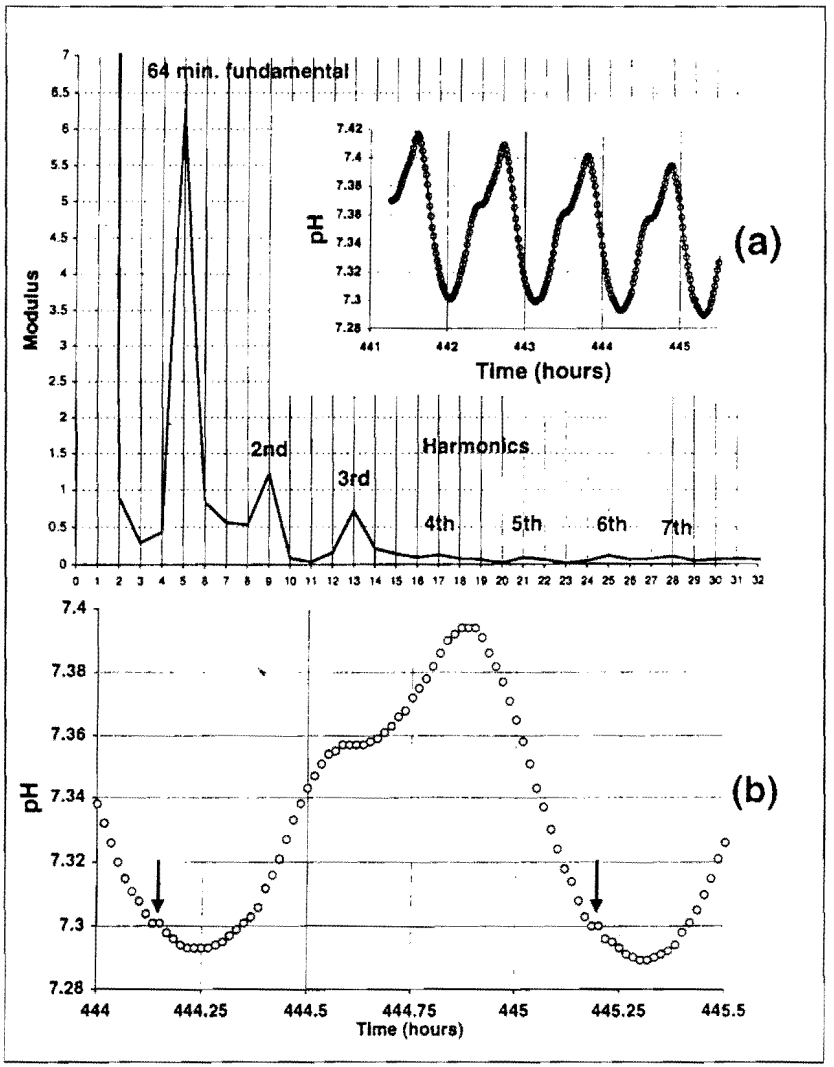

Figure 11. *(a) Modulus versus frequency plot from Fourier analysis using data set shown in inset. The fundamental frequency of these highly periodic escillations is 64 minutes. Data shown are for vessel at location B containing $ZnCO_3$ crystallites, 115 feet from a vessel at another location (location C) also containing $ZnCO_3$ crystallites and exposed to a pH-lowering imprinted device. (b) Close-up data shown in inset of Figure 11a. Note highly periodic nature of this pH data as indicated by data points marked by arrows. The sample interval is one minute.*

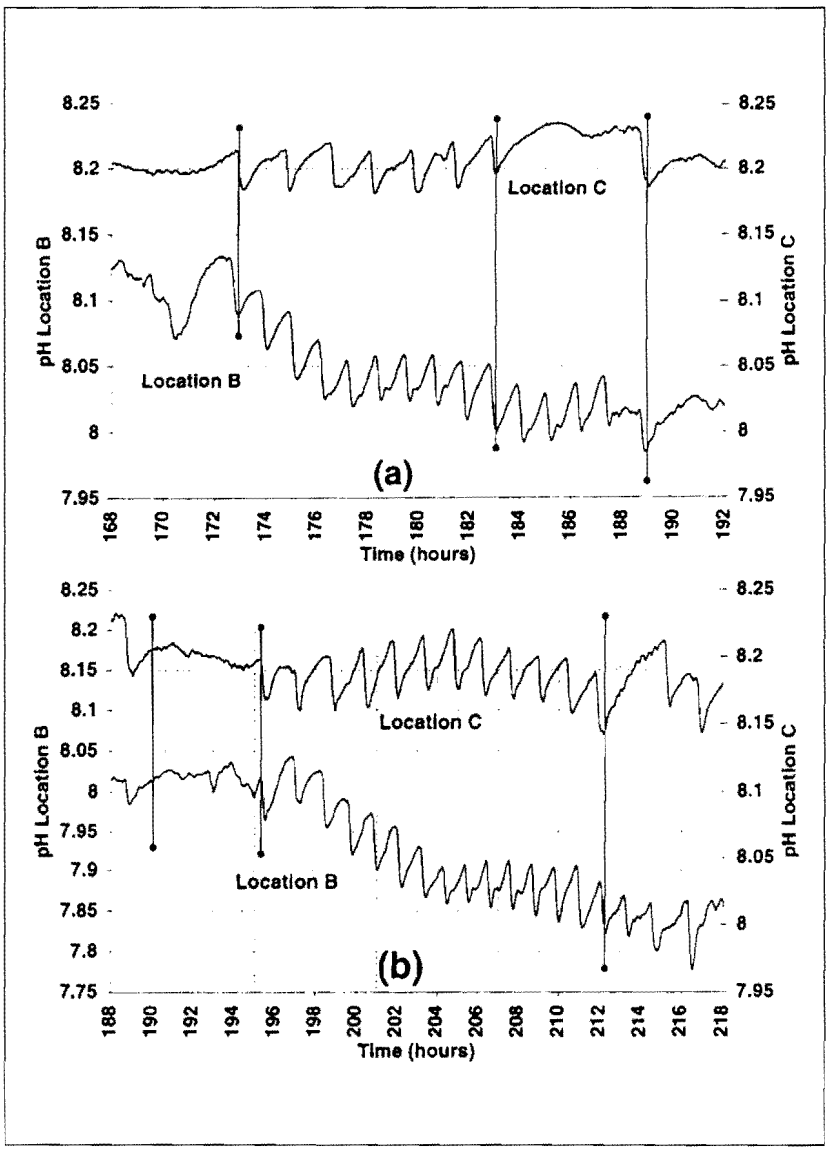

Figure 12. *(a) pH vs. time plots for vessels at two locations B and C about 115 feet apart. Both vessels contain pure water and ZnCO3 crystallites but only vessel at location C is exposed to a pH-lowering imprinted device about one foot away. The sample interval is one minute. (b) Continuation pH vs. time plots for vessels at locations B and C.*

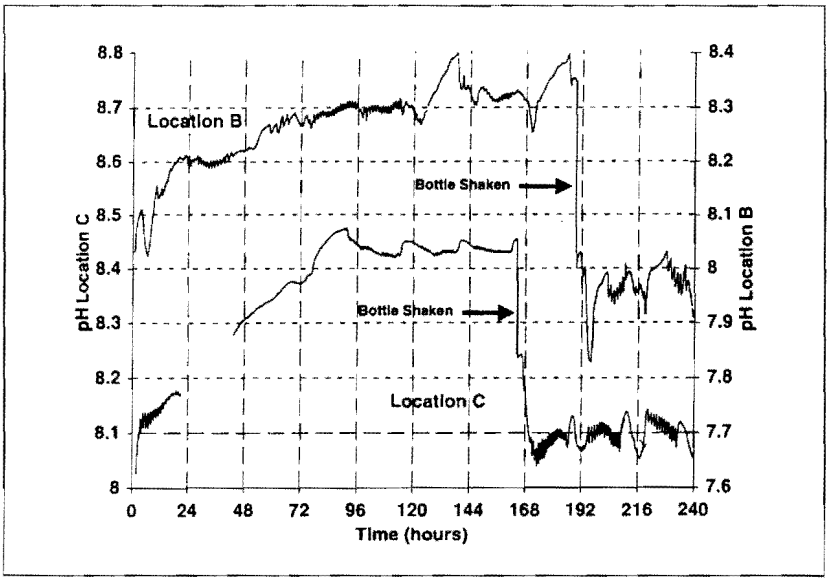

Figure 13. *pH vs. time plots for vessels at the same two locations B and C illustrating effects of shaking on pH-time course and development of short-period oscillations.*

being turned on at location C, the temperature profile at B does not have the pronounced flat periods near temperature minima. Of course, it is well known that there exists a conventional mathematical relationship connecting temperature and pH—but this is not it! Here, after the IIED has been turned on at location C as indicated in Figure 14a, the pH changes in the direction of its prime directive with significant amplitude τ_S-oscillations at location B. Looking carefully at Figure 14a, one notes that the bursts of pH-oscillations correspond with the nearly periodic shallow minima present in the temperature profile. Somehow, these T-undulations and pH-oscillations are connected, but not in the conventional way. Figure 14b is a closer view of this type of coupling.

Perhaps the most important observation of this study made to date is that continued use of the IIEDs at a particular locale conditions that locale in such a way that oscillations in various properties of water (pH, temperature, conductivity) occur without the further use of an IIED. This was first noticed via a strong correlation between the τ_S-oscillations in vessels B and C when locale B was one that had been utilized a great deal during these experiments. However, when vessel B was moved to a new location, several hundred feet

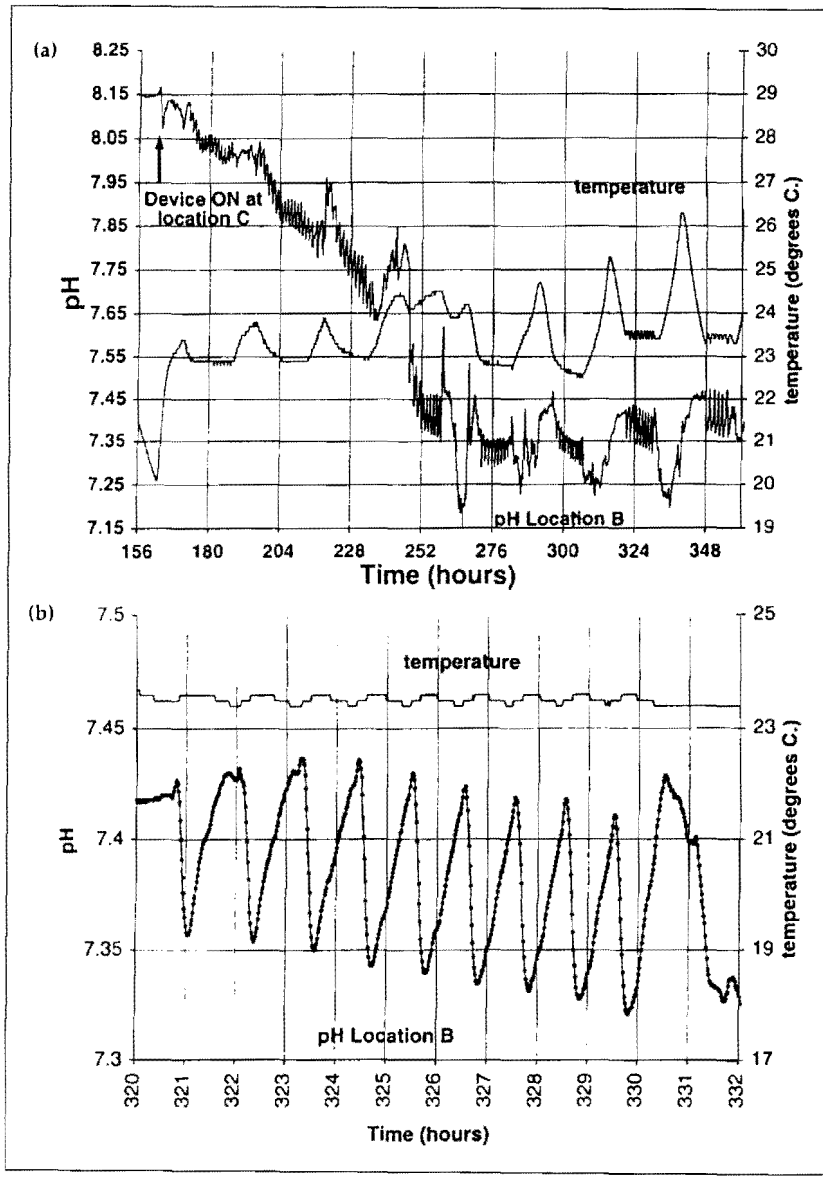

Figure 14. *(a) Temperature and pH versus time plots for vessel at location B for another experiment. Again, a vessel at location C (data not shown) is exposed to a pH-lowering imprinting device about one foot away. The sample interval is one minute. (b) Close-up of data shown in Figure 14a illustrating in phase coupling between pH and temperature.*

from C, no pH-oscillations were initially obtained (neither τ_L nor τ_S); but, with continued use at that new location, the oscillations slowly grew. Once the environment has been conditioned in this way, oscillations in water properties can be studied without the use IIEDs. Figures 15a and b illustrate some of the in-phase oscillations in water properties that occur in various aqueous solutions exposed only to a conditioned environment.

Fruit Fly Target Experiment

The experiments presented here deal with an environmental treatment effect; thus, we adopted a conservative statistical approach and treated the population means for the four experiments as the primary data. The ANOVA is given in Table I and it indicated a significant treatment effect for larval development time, $t_{1/2}$, with the following treatment rankings: $F < C \leq d, j \leq d, o$. Figure 16a gives the mean values for the fitness components and treatments, calculated using the mean values from the four experiments. Considering the results for the two categories of devices assessed, a pairwise comparison of d, j vs. d, o was significant as follows: $t_3 = 10.753$ ($p = 0.002$). Additionally, a pairwise comparison of C vs. F gave $t_3 = 3.813$ ($p = 0.03$).

Results for the [ATP]/[ADP] ratio in the presence of both NAD and pure H_20 indicated statistical significance as follows: $F > C > d, j > d, o$ (see Figure 16b and Table I). Considering results for the two different categories of devices, d, j and d, o, pairwise comparisons were significant as follows: NAD gave $t_7 = 6.497$ ($p < 0.001$) while pure H_2O gave $t_7 = 3.091$ ($p = 0.02$), a much less significant result.

Enzyme Target Experiment

Here, comparisons are made between the control ALP solution on a shelf in an incubator at 4°C with (1) an identical ALP solution in a small Faraday cage (F) which is located adjacent to C on the shelf and no device is present, (2) the same as (1) but with an imprinted device present (d, j) and (3) the same as (1) but with an unimprinted device present (d, o). All four experimental states (C, F, d, j, and d, o) were located next to each other on the shelf. A core experimental system comprising 100-ml quartz tubes placed in beakers containing 100 ml pure H_2O was utilized. This system, without the ALP solution, was first exposed to the particular treatment (C, F, d, j, or d, o) for

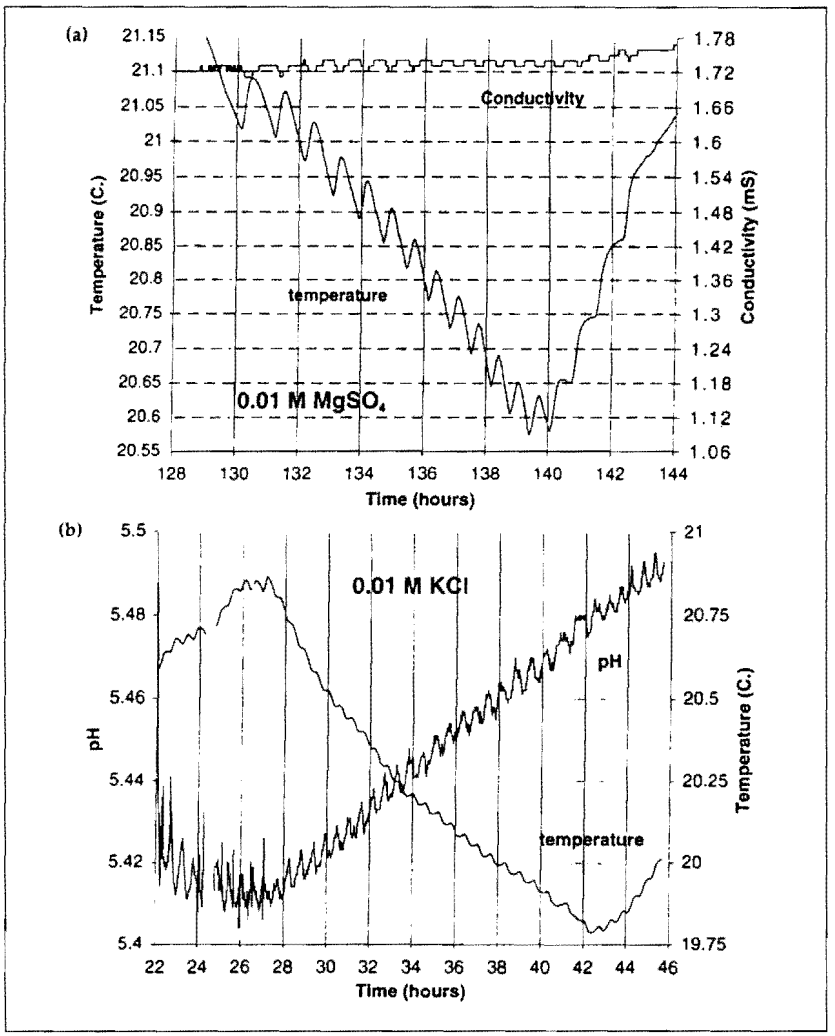

Figure 15. *Temperature and conductivity versus time plots for 0.01 M $MgSO_4$ solution exposed to conditioned environment where strong higher-dimensional coupling is present (see Part II[11]). Temperature is measured using high-resolution digital thermometer. Conductivity and temperature are measured simultaneously in the same solution. In-phase correlation between temperature and conductivity is illustrated. (b) Temperature and pH versus time plots for 0.01 M KCl solution exposed to conditioned environment where strong higher-dimensional coupling is present (see Part II[11]). Temperature is measured using high-resolution digital thermometer. In this experiment, in-phase correlation between temperature and pH is illustrated using a different solution.*

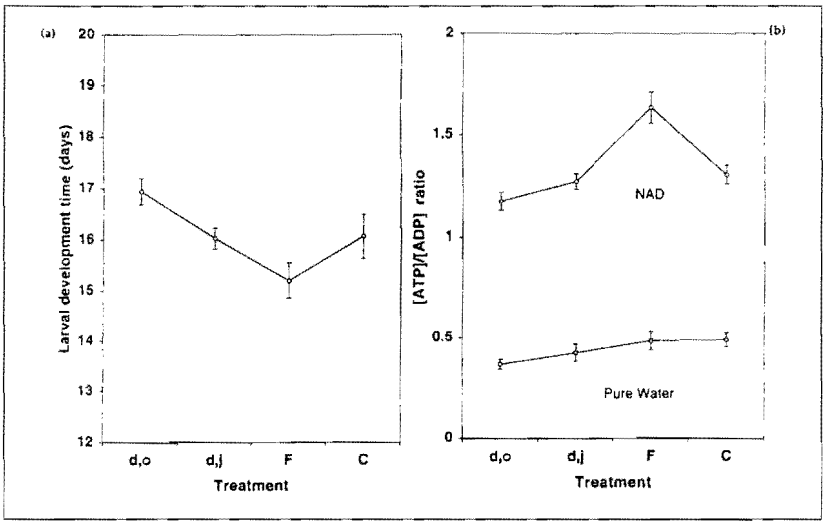

Figure 16. *(a) Larval development time for the four treatments,* ***(C)****,* ***(F)****,* ***(d, j)*** *and* ***(d, o)****. The corresponding ANOVA is given in Table I. (b) [ATP]/[ADP] ratio in the presence of 0.01 Molar NAD. The corresponding ANOVAs are given in Table I.*

two days. Then fresh enzyme solution was prepared and transferred to the quartz tubes followed by 30 minutes of exposure to the particular treatment (see Figs. 4 & 7). At the end of this period, ALP activity was determined as the mean of seven replicate assays for each treatment.

ALP activity was measured with the VITROS DT60 chemistry system, the DT6011 analyzer. and the DTSC11 module (Johnson & Johnson Clinical Diagnostics, Inc.). VITROS DT control enzyme solutions were used as experimental material. The ALP was derived from porcine kidney and standard procedures were followed. The VITROS ALP DT slide is a dry, multilayered film in a plastic support. It contains all the necessary reagents to determine activity in 10 µl serum or plasma. The reaction is based on ALP catalyzing the hydrolysis of p-nitrophenyl to p-nitrophenol. The p-nitrophenol then diffuses into the underlying layer where its concentration is monitored by reflectance spectrophotometry. The process starts by depositing a 10 µl drop of solution on the slide, which is evenly distributed by the spreading layer. The experimental means and standard deviations for ALP activity are given in Figure 17 and show the relationship $(d, j) > F > C > (d, o)$ for both dilutions

Table 1

ANOVA for the Larval Development Time

The population mean for each experiment was treated on the primary data. *df* represents the degrees of freedom and *F* the variance ratio Treatment effects were significant at $p < 0.001$ and d_j was significantly greater than d_o.

Source	*df*	Sum of Squares	Mean Square	*F*
device/treatment	3	6.103	2.034	19.651**
error	12	1.242	0.104	

** indicates $p < 0.001$

ANOVA for the [ATP]/[ADP] Ratio

The population mean for each experiment was treated as the primary data. *df* represents the degrees of freedom and *F* the variation ratio.

(a) 0.01 M NAD

Source	*df*	Sum of Squares	Mean Square	*F*
device/treatment	3	0.928	0.309	107.920**
error	28	0.08	0.003	

(b) With Pure Water

Source	*df*	Sum of Squares	Mean Square	*F*
device/treatment	3	0.075	0.03	17.733**
error	28	0.04	0.003	

** indicates $p < 0.001$

($p < 0.001$). Considering the results for the two categories of devices assessed, a pairwise comparison of *d, j* vs. *d, o* was significant as follows: $t_{13} = 4.007$ ($p < 0.001$). Additionally, a pairwise comparison of *C* vs. *F* gave $t_{13} = 2.871$ ($p = 0.01$).

DISCUSSION

It seems clear from the experimental data that, at least here, intentionality has been elevated to the status of an important variable influencing the key physical processes in these target experiments. How are we to understand this when there is such a large body of data that supports the opposing position? This is fully addressed in Part II.[11] There we first see where in today's description of physics are there allowable possibilities for "windows" through which subtle domain forces could act and how these possibilities might lead to an IIED-effect. Next, we see how such devices, via an on/off switch, appear to be able

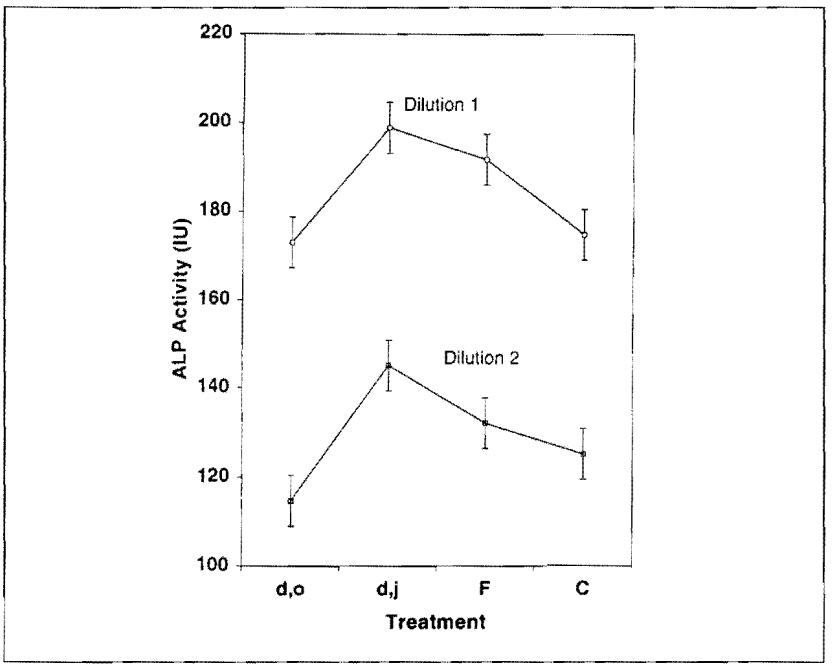

Figure 17. *ALP activity for the four treatments,* ***(C)****,* ***(F)****,* ***(d, j)*** *and* ***(d, o)****. The ALP dilutions were: dilution 1 - 100 µl ALP solution plus 150 µl pure H_2O, and dilution 2 - 100 µl ALP solution plus 200 µl pure H_2O.*

to broadcast a "prime directive" to the different target experiments. Next, we consider what aspect of this "broadcast" might activate the key physical processes needed to yield such target experiment results. Finally, we address the question of what is so special about these acts of intention embodied by the IIEDs that they have generated such robust results when so many other approaches have not.

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ACKNOWLEDGEMENTS: This work was partially supported by Ditron, LLC.

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