

A New Theory on Place Memory

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ABSTRACT: Place memory appears to involve the storage of information by the environment, which can be retrieved through paranormal means. This concept has been around since the inception of parapsychology. In recent years, it has been generally accepted that it is the living, not the dead, that appear somehow to be involved in the creation of place memory. Unfortunately, although some theories have been proposed for how place memory works, none of them are definitive. Heath (2004) recently proposed that it might aid our understanding of the phenomenon to consider the possibility that there may be two ways by which place memory is created—one active, through psychokinesis, and the other ‘passive,’ occurring more often with proximity, recency, and frequency of repetition. The theory is discussed that resonance might be the mechanism of action for the creation of ‘passive’ place memory. Furthermore, recent advances in physics would suggest that this information, regardless of its method of creation, might not require any special “psi-field,” but could be stored via the configuration of the atomic electron cloud and the geometric structure of molecules, including water.

Haunting can be defined as the more or less regular occurrence of apparently paranormal visual and/or auditory phenomena that are associated with a particular location. It does not always involve ghosts. Parapsychologists have long been aware that the environment may hold or evoke the memory of past events as an imprint that can be retrieved by those sensitive to such information. Over a century ago in discussing haunting apparitions, Mrs. Sidgwick (1885) mentioned the possibility that, “there is something in the actual building itself—some subtle physical influence—which produces in the brain that effect which, in its turn, becomes the cause of a hallucination” (p. 148). A few years later, Gurney (1888-1889) wrote:

The next case is remarkable for the frequent repetition of the percipient's experience. It is a specially baffling case; suggesting not so much anything associated with the popular idea of "haunting," or any continuing local interest on the part of the deceased person, as the survival of a mere image, impressed, we cannot guess how, on we cannot guess what, by that person's physical organism, and perceptible at times to those endowed with some cognate form of sensitiveness (pp. 417-418).

Roll (1964) noted that Myers and Lodge appeared to be among the few early investigators who thought of the psychic information associated with places or things as a distinct psi phenomenon. Myers (1896-1897) wrote:

Then . . . a less direct source of knowledge opens out . . . objects which have been in contact with organisms preserve their trace; and it sometimes seems as though even inorganic nature could still be made, so to say, luminescent with the age-long story of its past. (p. 338)

Lodge (1909) continued in this vein, stating:

Objects *appear* to serve as attractive influences, or nuclei, from which information may be clairvoyantly gained. It appears as if we left traces of ourselves, not only on our bodies, but on many other things with which we have been subordinately associated, and that these traces can thereafter be detected by a sufficiently sensitive person. (p. 197)

Although the early founders of the Society for Psychical Research discussed the concepts of psychometry and place memory, it was H. H. Price who popularised the latter term (Roll, 1964, 2003). Of course, he had a different interpretation of it than that which is currently accepted. Price believed literal memories were involved, which had lost their connection to an individual's mind and somehow become attached to the environment, where they caused hallucinations. Since then, the term has evolved (Heath 2004). Most parapsychologists today think of place memory as information that is somehow stored by the environment and retrieved through extrasensory perception. Unfortunately, we still know little about the phenomenon, including how place memory comes to exist or is stored.

In order to make sense of what could be holding these recordings, parapsychologists have frequently speculated on the presence of some kind of unseen 'ether' or 'medium.' (Tyrrell, 1953). There are currently two popular theories. The first of these is W. G. Roll's psi-field theory wherein information is recorded through spatial proximity, frequency, and recency (Johnson, 1983). Although there might be some modifiers to the effectiveness of these elements, Roll's idea would seem to fit many of the facts as we understand them. However, no one has been able to document the existence of a psi-field.

Persinger and Koren (2001) have proposed a different theory. They postulated that geomagnetic fields record events in a way similar to the creation of a hologram. Persinger and Koren (2001) wrote:

In this context, local geomagnetic activity would be the working and reference beams, and the interaction between the local static geomagnetic field and composition of the earth's surface would be the equivalent of the exposure plate. If an event occurs during a geomagnetic storm with a specific pattern whose local signatures are matched with the inductance of the local crust, then a small representation might be maintained within the crystalline structure of the rock. The presence of human beings and objects during the event might generate interference patterns by distorting the ongoing geomagnetic activity (the working beam) as it is superimposed upon the static field (p. 192).

As with Roll's 'psi-field' theory, this is an intriguing idea that seems to hold promise for explaining some cases of place memory. In support of their notion, those who routinely perform haunting investigations feel it is possible to erase place memory through the use of anything that could disrupt a static electromagnetic field (Auerbach, personal communication). However, unlike Roll's 'psi-field,' Persinger and Koren's holographic method would not seem to explain the object-associated information of psychometry, which could be the same phenomenon as place memory, simply occurring on a smaller scale.

Two facts about place memory that seem evident are that: 1) the living are involved; and 2) emotion plays some kind of role, whether in the creation or retrieval of place memory (Heath, 2004). Said information may also have a certain amount of stability, lasting decades or even centuries. As Hibbard, Worring, and Brennan (2002) noted, "Some psychics claim that the 'energy' of a crime event never really dissipates, especially in traumatic crimes, such as homicides" (p. 62). Furthermore, the local geomagnetic field, geologic factors, and weather conditions may also influence the

storage or retrieval of place memory. However, as Cornell (2002) observed:

How and why human emotions should become embedded in the material of a building has never been investigated nor theorized further, nor have the mechanics of their replaying been explored further. Even allowing that psychometry might provide an instance of a similar phenomenon, there is nothing in physics nor any recorded data which might support or allow us to develop this theory further (p. 391).

Fortunately, this situation may have changed. Physics has made advances in recent years that might shed light on the possible mechanism of action for the creation and storage of place memory—and it does not require the existence of a psi-field or non-physical medium. However, much of this research is not widely known by parapsychologists because it comes from the fields of nanotechnology and vibrational energy medicine. Let us look briefly at these areas.

NANOTECHNOLOGY

Nanotechnology is a new scientific field that studies molecules and structures that are one billionth of a meter in size (Ratner & Ratner, 2003). Perhaps what makes it so exciting to parapsychologists is that nanotechnology demonstrates that massive amounts of information can be stored in methods invisible to the unaided eye. Furthermore, nanotech research tells us that the fundamental properties of an item and the rules determining its functioning *change* when you reach nanoscales. Macro-physical laws no longer apply; single photons can carry information; and electron bonds may act as device components. And this is true not only for machines, but, if vibrational medicine research is to be believed, for the human body, as well.

AN OVERVIEW OF VIBRATIONAL ENERGY MEDICINE

Gerber (2000) pointed out that Einstein's formula $E = mc^2$ tells us that matter is simply a frozen version of energy. In fact, not only the body but all matter could be thought of as vibrating energy of various degrees of complexity and speed. Moreover, in the model held by vibrational medicine, "Consciousness is not merely a by-product of electrical and chemical signal-processing in the human brain. Consciousness is a kind of energy itself"

(Gerber, 2000, p. 10). Regardless of whether one accepts this model, there are aspects about the body that suggest it uses energy regularly as a method of communication. Gerber (2000) stated, “we now know that the cells of the body actually emit weak pulses of light. Those weak cellular light pulses seem to be part of a light-based communication system that helps to coordinate the actions of the cells within each organ” (p. 11). Thus, as in nanotechnology, the direct transfer of information by means of energy pulses appears to work at least when short distances are involved.

There are many forms of vibrational energy medicine. However, they are all based on the understanding that living organisms are not static, but dynamic networks of vibrating molecules and liquid crystals (long, thin, flexible arrays of molecules, such as phospholipids and collagen) (Oschman, 2004). Molecules can, and do, change their shapes because the atoms within them are not fixed in place; and this can happen in the trillionth of a second. This movement can be responsible for an intrinsic symphony of vibrations, as noted by Oschman (2004) below:

Each bend, rotation, or stretch of a chemical bond has a certain resonant frequency, and will give off certain ‘notes’ if it is energized. Since molecules, water, and dissolved ions are constantly bumping into each other at body temperature, all parts are constantly jiggling and absorbing and emitting energy. (p. 123)

Oschman (2004) further observed, “all life depends upon molecules interacting through vibrating or oscillating fields” (p. 121). This appears to be particularly true of the liquid crystals, which may be extremely sensitive to environmental energy fields. Vibrational energy medicine attempts to take advantage of this situation by using various forms of energy to interact with the body’s intrinsic vibratory matrix. Homeopathy and flower essence therapy are two examples of this kind of therapy. They use preparations that vibrate in specific ways as measured by spectroscopy. The hope is that the particular energy spectrum emitted by these remedies will influence the body in such a way that it can be restored to health. We will next look at how homeopathy and flower essence remedies are created and whether either of these forms of vibrational energy medicine have been shown to be more effective than placebo.

HOMEOPATHY

Before we delve deeper into discussing the physics involved in energy medicine, it seems important to address one point—whether any of

these methods have actually been proven to work in controlled studies. And there does seem to be support for this notion, at least for homeopathy.

Homeopathic remedies are created through a process known as succussion, which involves the violent shaking of increasing dilutions of a molecule until a final mixture is reached that may contain none of the original ingredient—only the *information* culled by the association of the water with it. A brandy carrier solution is used for the final remedy (which is typically dropped upon the tongue), making it easy to create a blind placebo situation.

Kleijnen et al. (1991), Linde et al. (1997), Linde and Melchart (1998), and Cucherat et al. (2000) published meta-analyses of double-blind and/or randomised placebo-controlled trials and found that homeopathy appeared to have an effect beyond that of placebo. However, their results were tempered with caution, as these authors also observed that studies with rigorous methodologies tended to be less positive than those of lower quality. Linde et al. (1999) confirmed this tendency, although they noted that there was not a linear relationship between quality scores and study outcome. Some well-designed individual studies, such as the randomised, controlled triple-blind study by Weatherley-Jones et al. (2004) on patients with Chronic Fatigue Syndrome, have demonstrated mildly positive results.

Although meta-analysis studies can be an effective method of revealing whether there are significant trends where the effect is a weak one, they are not without their own pitfalls. In addition to the usual concerns over study inclusion criteria, there are other factors that may influence the findings. Kleijnen et al. (1991) suggested that the controversial nature of homeopathy could lead to a bias in favour of publishing negative studies. There are a number of unknowns in the field that could strongly affect study outcomes, including whether the best homeopathic remedies (or their combinations) are being employed for the disease being treated in any particular study, which illnesses are most apt to respond to homeopathy, in what manner that response can be expected to appear, and how such responses can best be measured. Some outcomes may be elusive and difficult to quantify. Furthermore, not all patients may be equal responders to homeopathy. Certainly, this does appear to be the case for at least some illnesses. Bell et al. (2004) performed a randomised, double-blind, placebo-controlled trial with 62 participants. They found that prefrontal EEB-C appeared to act as a biomarker for which patients would be exceptional responders to homeopathic remedies for Fibromyalgia. As with Chronic Fatigue Syndrome, this is a difficult, chronic illness for allopathic medicine to treat. The finding of other biomarkers could help clinicians target the most receptive patient population for vibrational energy medicine, thus allowing studies to show more robust results.

FLOWER ESSENCE THERAPY

The data is far less convincing for another form of vibrational energy medicine—flower essence therapy. For those unfamiliar with flower essences, this is not the same as the aromatic essential oils used in aromatherapy. These remedies are created from freshly picked flowers, which are placed in a glass bowl of spring water and left in full sunlight (Gerber, 2000). Then, it is said:

The energy of sunlight appears to transfer a certain aspect of the flower—the very pattern of its life-force energy—directly into the water. Unlike homeopathy, which hinges upon succussion and dilution to imprint water with the vibrational pattern of different substances from nature, flower-essence preparation usually depends upon the energy of sunlight to imprint water with the healing vibration properties of flowers (Gerber, 2000, p. 183).

Once these infusions have been created, they are preserved with brandy, and further diluted before being dropped onto the tongue for absorption (Cram, 2001a).

Unlike homeopathy, there is little in the way of double-blind controlled research on flower essence therapy. Most findings are presented as personal testimonials, informal reports, and clinical case studies. There have been three exceptions, none of which had impressive results. Cram (2001a) looked at the use of flower essences as an adjunctive treatment for depression in twelve patients. After one month of baseline care they were tried with three months' standard care plus individualised flower essence therapy. Cram reported over a 50% decrease in Beck Depression Inventory and Hamilton scores (both at $p < .0001$). Unfortunately, the small sample size, lack of a randomised treatment protocol, and absence of a control group makes it impossible to determine whether these results are truly meaningful. Cram (2001a) noted that he had performed an unpublished pilot study using a randomised double blind placebo control group with six patients where the three treated participants responded in a manner similar to this larger study, and two of the three placebo participants (imbibing only a brandy carrier) had an impressive drop their first month of treatment, but by the second month returned to baseline. As before, the small sample size is a problem. It would have been interesting to see this experimental design used on a larger scale.

Walach et al. (2001) used a randomised, placebo-controlled, blinded parallel group design with 61 participants to investigate whether a combination of Bach flower essences could affect test anxiety. All groups

showed a decrease in anxiety with no significant difference between them, leading the authors to conclude that the flower remedies were acting as placebos.

Cram (2001b) reported a randomised double-blind experiment with placebo controls looking at the effect of Yarrow Special Formula and Five Flower Formula flower essences on stimulation by fluorescent lights in 24 participants as measured by qEEG and sEMG. The lights were positioned so as to expose the participants to 3 milligauss/meter electromagnetic field as measured by a Trifield Meter. None of his results reached significance at the .05 level. Despite this, Cram concluded there was an attenuation by these agents of the expected stress response provoked by light stimulation.

It is possible that one of the pitfalls of complementary medicine may be that there is more within-group variation of response, requiring larger participant numbers to obtain significance. Small study sizes limit the odds of success. Until more research is performed, there would not appear to be sufficient data to draw any conclusions regarding flower essence therapy.

WHAT PHYSICS SUGGESTS ABOUT THE STORAGE OF INFORMATION BY WATER

The fact that at least one form of vibrational energy medicine—homeopathy—appears to have an effect beyond placebo, would seem to indicate that it is worth considering what science has uncovered as to how these remedies might work. What makes homeopathy and flower essence therapy so interesting is that patients imbibe dilutions of the therapeutic substance that are so weak as to contain no molecules of the original ingredient. The answer as to how water could retain a long-term energetic imprint could be pertinent to a question that has plagued parapsychologists—how place memory is stored.

Physicists have long been interested in the unique attributes of water. Water seems to play a special role because it has one heavy atom of oxygen and two lightweight atoms of hydrogen—thus combining in one molecule both classical and quantum mechanical properties. Furthermore:

The hydrogen bonds give the water molecule some extra degree of freedom in water, and some extra constraints, to form ordered bonds with other water molecules. The bonds are, however, not as strong as intra molecular bonds, and hence can be broken or arranged with only little energy (Schulte, 1998, p. 49).

This becomes even more interesting when we realize that, not only may it require little physical energy to impact the system, but water can form stable, coherent fields, with electron cloud oscillation that, in essence, can hold information long term (Del Giudice & Preparata, 1998). Del Giudice and Preparata (1998) have noted that:

Once a rotation with angular momentum L and energy $E = L^2/2I$ is started, it would last indefinitely . . . unless an hydrodynamic shock wave would come into play. So, in a motionless liquid, a rotational excitation of a coherence domain would have a very long lifetime (p. 101).

Turning our attention to what physicists have specifically said about homeopathy, we see that Schulte (1998) pointed out:

The fundamental riddle of ultra high dilution research is the apparent information transfer and information storage in aqueous solutions as well as in biological cells with aqueous encapsulations

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[A]toms in liquids tend to “see” only their immediate surroundings, which are made up of approximately 6 to 12 directly neighboring atoms or molecules (“atomic short-sightedness”), and which may include a further several hundred or even a thousand atoms in the vicinity . . . depending on the type of the surrounding molecules. Because of the internal, atom type specific, microscopic structure of a molecule, each molecule has a characteristic electronic-geometric appearance or form when viewed from the outside. This microscopic molecular structure, i.e. the atomic electron shell configuration, essentially determines what the geometric configuration of atoms in their very short range vicinity will look like. There is some flexibility within the local structure Within certain narrow limits the local geometries can be influenced by external forces, e.g. Through *succussion* and by the change of temperature (pp. 46-48).

One can speculate that these geometric structures, and the electron shell configurations mentioned by Schulte (1998), could represent information that can be accessed by the body for health. The key appears to be that “atoms in a liquid state of aggregation . . . form local flexible geometric structures” (Schulte, 1998, p. 48). The physical evidence that such structures actually exist was noted by Lo et al. (1996), who explained:

Recently it has been suggested that stable rigid structures (called I_E structures which stands for ice formed under electric field) can be formed from water molecules at room temperature and normal pressure. Rod-like structures are identified in photographs taken by transmission electron microscope (p. 921).

One question that would have to be asked is whether these structures are truly stable at normal body temperatures, or for how long they perpetuate themselves. Lo et al. (1996) investigated this issue and reported:

We have also heated the I_E water to 121°C at 1.1 atmospheric pressure. We see no change in its UV absorption spectrum before and after heating to such a high temperature and pressure. We also possess some samples of I_E structured water that does not change its UV absorption characteristic after a period of two years. In our previous paper we mention that in a rotary evaporation unit, very little change in UV spectrum is found between the original I_E structured water, the evaporated water, and the residue water. This indicates the unit cells that constitute these I_E structures are stable even during evaporation process (pp. 928-930).

This would seem to indicate a remarkable degree of longevity and stability at normal temperatures and stressors, suggesting that such structures, if involved in vibrational medicine, would have a reasonable shelf life and not be immediately destroyed by body temperature when ingested. Even more interesting is the fact that normal electrostatic charges may be all that is required for the formation of these structures. Physicist Sui-yin Lo (1999) commented:

It is well known that water molecules form stable rigid structures: for example, ice VI at room temperature and at high pressure (>7 kBar). Generally, such a high pressure does not occur naturally on Earth. However, we wish to point out that such a high pressure could exist between an ion and its nearby water molecules due to the electrostatic attraction between the charge of an ion and the electric dipole moments of a water molecule. Anomalous state[s] of ice which are stable rigid structures of water molecules similar to ice VI can be grown in water at room temperature and normal pressure (p. 909).

Yet another piece of the puzzle may be that water not only has memory, but also magnetic properties that allow it to be influenced by the

earth's normal geomagnetic field (Del Giudice & Preparata, 1998). Magnetic fields appear to cause the electron cores of the coherence domain of water to rotate faster. This in turn can cause attributes of the water, such as surface tension, to change. Thus, we see that not only can water—a molecule that composes much of this planet and the living organisms on it—can hold information long-term, but that the stored data can be affected by electromagnetic fields. This is particularly interesting because electromagnetic fields are also felt to be able to influence place memory. Lastly, it should be noted that although homeopathic research has focused on water as a medium, other types of molecules may also be able to store information in a similar manner.

THEORISING ABOUT PLACE MEMORY

Heath (2004) postulated that there may be two methods by which place memory is created—one “active,” through PK, and the other “passive.” Let us look at what nanotechnology and vibrational energy medicine might suggest about the possible mechanisms for the creation and storage of information for each type of place memory.

The primary curative agent in flower essence therapy is said to be “life-force energy.” Although it has relatively little as yet in the way of supporting evidence, there is one aspect of these remedies that may be worth considering—they can be best thought as information that has been stored in water after association with an imprinting agent, rather like what we see in homeopathy. If so, the violent association (via shaking) of molecules might not be as important as some form of *energy* (which in the case of flower essences is said to be sunlight) facilitating the information transfer.

This would seem to have implications for psi. It is possible that PK energy might assist in the transfer of information that occurs in the “active” creation of place memory. Whether that information is stored on a molecular or sub-molecular (including so-called subtle energy) level of water or other materials is unclear. The latter would require that solids could also alter their electron configurations in meaningful ways. Alternatively, the amount of liquid that exists at the microscopic level could be sufficient. Also, some research performed in vibrational medicine using Kirlian photography and other methods would suggest that even “solid” items may leave behind a measurable residue after they have been diminished to the point that they are not thought to exist any longer (Gerber, 2000).

Resonance may also be a factor, particularly in the creation of passive place memory. Gerber (2000) observed:

Everything in the world—be it a plant, an animal, or even a rock—oscillates and vibrates to some degree. The key frequency of vibration of an object or animal is its resonant frequency. Vibrating or oscillating systems will maximally absorb energy if the energy is delivered in the resonant frequency of the system. For instance, if you have two well-tuned guitars in a room and you pluck the E string of one guitar, the sound frequency of the plucked string will make the E string of the second guitar vibrate as well. Another famous example of the powerful effect of resonant-frequency transfer is the Memorex tape commercial where Ella Fitzgerald's voice shatters a wineglass by hitting the resonant note of the glass (p. 121).

Resonance can have a powerful effect on both macro and micro scales. It is likely that this is also true for more subtle levels of energy, such as electron field configuration, and stored information.

Resonance is not a new idea in psi. Indeed, it has frequently been suggested as a mechanism for ESP. Barrett (1918-1919) discussed the idea in the early 1900s, stating:

A much more difficult question is the *mode of transmission* of telepathy. No doubt in many minds the first conception of thought-transference was a quasi-mechanical transmission of brain waves through space. The well-known phenomenon of resonance in physics supported this idea. A tuning-fork when struck will cause another tuning-fork, in exact unison, to respond, even though they may be some distance apart. The resonance of a sensitive flame (a tall jet of gas) is still more remarkable; it will shorten nearly a foot in response to a note of the proper pitch 50 or more feet distant (pp. 256-257).

In 1960, Ninian Marshall also proposed a "theory of resonance" (Roll, 1964, p. 44). This said that the more similar two brains were, the more likely it was that one would be able to influence the other. Recent years have seen the idea of resonance as a form of information transfer continue to be a popular one, with Taylor (1998) proposing it as an element in his theory on ESP.

Should passive place memory be imprinted through resonance, Roll's findings of the value of recency, frequency, and proximity would be logical to expect. Furthermore, the geologic structure of the environment and geomagnetic fields would also be expected to impact place memory creation, as it would affect the types of molecules that could be altered and

their configurations. Likewise, there would be no reason why PK could not cause the subtle shifts required at this level to store information in the “active” creation of place memory as postulated by Heath (2004).

The notion that resonance may be able to cause a molecular shift in configuration (which is read as information) could fit with another observation that has sometimes been reported with place memory—the fact that it may appear to be stronger, or easier to access, on wet or misty days. This would make sense if information that was previously stored in geologic formations or physical structures could spread through resonance via the water molecules in the atmosphere and become more broadly available to percipients for access.

There is one other aspect to the idea that place memory is stored through the molecular configuration of the environment that is worth consideration. If this is true, it might be possible to retrieve such information through means other than ESP. One might even speculate that this could have already occurred. Auerbach (personal communication November 7, 2004) has suggested that place memory may be responsible for some electronic voice phenomena recordings. He noted a case in which the repetitive sounds of a slave rebellion and gunshots in the basement of a house, heard by a variety of percipients over the years, was recorded as an apparent case of instrumental transcommunication. Since no discarnate entities appeared to be involved, this suggests one of three possibilities. First, that human PK on the part of the investigators recorded the sounds. Second, that the atmosphere somehow held elements of past sound wave vibrations (which would seem unlikely over a long period of time). Third, that place memory, which stored in the building, was transmitted through the atmosphere through resonance and was able to affect the recording device.

A POSSIBLE DESIGN FOR TESTING THIS THEORY

We have discussed how physics and vibrational medicine might support the theory that the creation and storage of place memory could involve resonance and the molecular configurations of elements in the surrounding environment. However, no theory is of value unless it is falsifiable. In this case, it should be possible to determine whether there are physical changes in configuration with the imprinting of information on the psychometry scale. It should be noted from the outset that the outcomes of a few early trials cannot be considered to be “proof” of anything. Ideally, a long series of experiments should be performed using a variety of materials. This way, the protocol and techniques can be evaluated and improved upon.

There should ideally be at least three groups of objects studied—a control group and two treatment groups (one for passive and the other for active place memory creation). It would be interesting to look at a variety of target materials, although this can lead to its own set of problems. Water is notoriously unstable, yet in physics and homeopathy studies it appears to be sensitive to subtle influences, which can be measured by spectroscopy. Another advantage of water is that it is easy to pipette out a sample without damaging what remains. However, in the real world place memory may involve other materials. Because of this, it would be interesting to examine a variety of solid objects. The drawback, of course, is that the act of cutting out a sample might well affect the target. One possible solution would be to have pre-cut sections or cubes from the same piece of wood/metal/stone that could be already separate or easy to detach from the whole. One or more pilot studies might clarify how this situation could best be worked out. At least initially, it might be wise to include the target items that are identical test tubes of water, along with a mix of highly similar objects, such as a rectangles of wood or metal that have been cut into cubes and/or pieces of stone from the same larger rock. These samples should be labelled with randomly assigned numbers from a random number table.

Before beginning the experiment, there needs to be a baseline period for all objects. A neutral, consistent, and matched setting is important. The items could be placed into one of three separate, identical isolation rooms with a controlled temperature and humidity, where the lights remain on at all times. They could be left undisturbed in the rooms for an arbitrary period of perhaps one month. At the end of this time, samples could be removed for baseline readings which could be performed on the items.

There would be three conditions. First, a control set where no one comes into the room from the time the objects are placed there until they are removed for testing. The second sample group could be imprinted through alternate "passive" methods, permissive of resonance through recency, proximity, and repetition. Since the living seem to be involved in the creation of place memory, this might involve the same person simply coming into the room, handling the object in a consistent way, and leaving the room, without a deliberate attempt to imprint any particular thought or feeling. The third group would involve a person trying to actively imprint information on the objects using peak emotions (positive or negative). For best results, it might be advised to consider the aid of participants who have shown themselves on other experiments to be capable of performing PK. These individuals would be completely different from the psychic(s) evaluating the results.

Two levels of measurement are needed for the baseline situation and when the experiment is completed. These could be randomised (using a random number table) as to the order in which they are performed. One level would be to determine whether psychic impressions were created in the samples. The other form of measurement would involve electron microscopy, spectroscopy, and UV measurement (as appropriate to the material involved) by a professional technician skilled in such analysis.

Although paranormal information makes it impossible to have a completely blind situation, there should be an attempt to minimise sensory cues regarding which sample belongs to what group when it is measured. The samples, labelled only by their numbers, can be mixed together on a tray after being removed from their treatment or control rooms. This tray can be handed off to an experimenter who is not informed as to which sample came from what location. They, in turn, would take the samples to a distant location, where either the technician or a psychic was waiting.

One of the more problematic aspects of this design is determining which psychic(s) have an acceptable accuracy rating for deciding what, if any, paranormal information the samples contain. After all, there needs to be place memory created in the treatment groups (and not the control group) for us to expect to find measurable physical changes in the treatment items that do not appear in the control samples. A possible solution would be to look for individuals with a long track record of success at psychometry and reading place memory, such as police psychics with a hit rate of 75% or more as verified by the previous year's documented cases. They could then be asked to write down any impressions they have for each numbered sample. A third party, blind to what group each sample belonged to, could then score the result for likelihood (first, second, or third) of which group it falls into. After this was done, the experimenter would go back to the original list to see whether the psychics were able to confirm a successful baseline (i.e., identical, neutral impressions) and a treatment effect. Needless to say, if multiple psychics are used, they must have normal sensory isolation from each other at the time they perform their readings.

If the data show that the samples were statistically identical at baseline (both in terms of physical measurements and psychic impressions), then a change in the psychic impressions reported in the samples for one, or both, of the treatment groups (but not the control group) which is associated with a measurable physical change at the end of the experiment would suggest there is at least a correlation between paranormal information and molecular configuration. This would not, of course, be proof. It would simply indicate the value for further research in this direction. Should there be no measurable physical changes in the samples despite the apparent successful creation of paranormal information in a pilot and follow-up

study, then it would seem likely that the theory was successfully shown to be false.

SUMMARY

In conclusion, it might be useful for experimenters to look at place memory as something for which there could be two methods of creation, both of which are ultimately stored in the same way, as a change in the molecular structure of the environment. One method could be thought of as "passive" or induced. This could represent a low level general energetic imprint. Such information might be created through resonance on the quantum level, with the electron cloud fields of water and other molecules holding standing patterns until erased or disrupted through heat, the influence of magnetic fields, the acquiring of other information, or by some other means. Such passive storage of information would be compatible with the need for proximity, frequency, and recency in Roll's 'psi-field' theory, and would be influenced by the geomagnetic and geologic factors of Persinger and Koren's theory. Gifted psychics might be able to access the information at any time, whereas less talented individuals might have to have certain weather conditions or be in the right state of consciousness to sense what had been stored. The second, "active" method of recording place memory, as proposed by Heath (2004), could involve PK creating a resonance field, which, depending on the talent and need of the individual imprinting the information, might not require proximity, frequency, and recency.

The idea that place memory could be stored on a physical level, through the structure of surrounding molecules and electron cloud configurations, is an interesting one in part because it is testable. Such a theory would also appear to be compatible with at least some of the physical factors, such as humidity and magnetic fields, previously noted to be important in the phenomenon. Furthermore, by looking at place memory as stored information, no different from other forms of energetic data, such as that used in homeopathy and flower essence therapy, it gives us a broader perspective on what may be occurring. It is the author's hope that this paper will inspire further discussion and open up new avenues of research on the topic of place memory.

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