The Physics of Dowsing: Body Interactions Part 1

A qualified physicist as well as successful businessman and author, BSD member Jeffrey Keen probes further into the subject of the physics of dowsing.

INTRODUCTION

To assist in understanding the purpose of this article, it is useful to compare dowsing to the history of astronomy. Ignoring the great contribution made by the ancient Greeks, so called "Scientific" progress in understanding astronomy and cosmology started with Copernicus having the vague notion that the Earth revolves round the Sun. This was followed by Tycho Brahe's meticulous but primitive measurement of planetary motion, which led to Johannes Kepler's laws of planetary motion (i.e. geometry involving elliptical orbits), which in turn led to Newton's Law of Gravity. This was over 300 years ago, and today the exact mechanism for gravity and mass is still unknown.

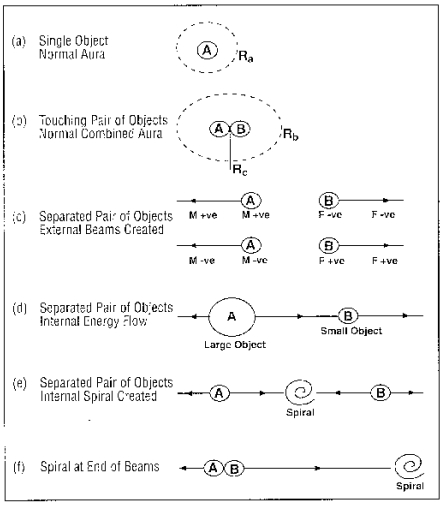

Fig 1. Interaction of two sources of dowsable energy

Present day understanding of dowsing could be comparable to the situation with astronomy about 600 years ago. The time currently seems right for studying dowsing scientifically, as the fascinating and as yet inexplicable aspects of dowsing are no more unbelievable, and they seem to involve similar concepts as other current research topics in mainstream physics, including:- the "weird" effects of quantum theory, multiple universes, ten or eleven dimensional universes, whether time as we perceive it actually exists, quintessence and dark energy, dark matter, the anthropic principle (most of the numerous laws of Nature are such, so that they enable intelligent life to be created thus enabling us to observe those laws of the Universe we happen to live in), and the science of consciousness (Do we see something because it is there or does something exist because we sense it?).

In fact, dowsing seems more plausible than some of the other current ideas in physics mentioned above. In particular, the fact that one can touch and feel dowsing, unlike ten dimensional universes and some of the esoteric effects of quantum theory!

Utilising the above analogy with astronomy, this article (which is open to critical review) contains primitive measurements analogous to, say, Tycho Brahe's contribution, and possibly some tentative laws comparable to the level of Kepler's laws. In other words, there is still a very long way to go in understanding both the mechanism of dowsing and the effects perceived by observers of dowsing.

THE INTERACTION OF TWO OBJECTS EMITTING DOWSABLE ENERGY

This article illustrates some of the benefits of using scientific principles to improve the understanding of dowsing, and particular, the measurement of Range, which is the furthest distance over which an emitted Dowsable Energy Field can be detected. A particularly interesting spin-off is the scientific demonstration of the effects of the interaction between objects emitting dowsable energy. Before investigating multi-object interaction in general, it is initially simpler to isolate just two bodies and study the physics of their interaction. This interaction is strongly

Errata

1) The title of the article by Jeffrey Keen in the December issue (see page 12) of the Journal should have read: "2-body Interactions". Unfortunately the "2" was omitted.

2) Figure 1 (f) only makes sense when Objects A and B are separated and not touching as published.

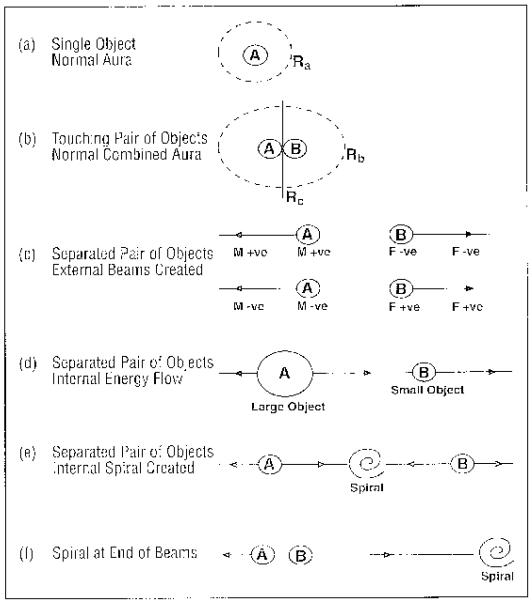

Fig 1. Interaction of two sources of dowsable energy (amended)

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dependent on the separation of the two bodies, when, at critical distances, an appreciable dowsable beam is created. The qualitative results are illustrated in Figure 1.

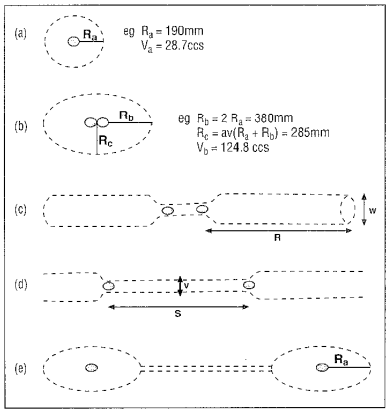

Fig 2. The dowsable energy field of two interacting objects

Figure 1 (a) illustrates a single object, A, with its normal dowsable energy range (aura) R_a, which typically is less than 1 metre, but may extend to about 10 metres for large megaliths. Figure 1(b) illustrates two touching objects, A and B, with a combined ellipsoidal dowsable energy field with radii R_b and R_c, which again are typically 1-2 metres.

However, Figure 1(c) illustrates for two sources of dowsing energy (A and B) that are separated by several centimetres, a dowsable energy beam is created which extends for many metres along each side of the axis of the two objects. In general, the energy flow is outwards either side of the two objects. Depending on the characteristics of the emitting objects, the dowsable beam which is created and emanating from that source will have the same characteristics as the source i.e. male (M) or female (F), positive (+ve) or negative (-ve), or beneficial or detrimental energy for the observer. This effect is not just confined to perceived dowsing emitters such as minerals and crystals, but it equally applies to wood, live plants or a combination of any two objects emitting dowsable energy. If the two objects are too close together, no dowsable energy beam is created.

What happens between objects A and B? As seen in diagram 1(d) if a larger object (A) is separated from a smaller dowsable object (B), the energy between A and B flows from the larger to the smaller object. If, however, the emitting dowsable objects are of similar size as in Figure 1(e), the energy emanating towards each other forms a spiral in the centre. This may be a downwards anti-clockwise spiral, for an example of citrine and rose quartz, or an upwards clockwise vortex, for a combination of two fluorite crystals. (However, the direction of dowsable energy flows can vary from time to time due to changes in the environment, in its widest sense, and from observer to observer.)

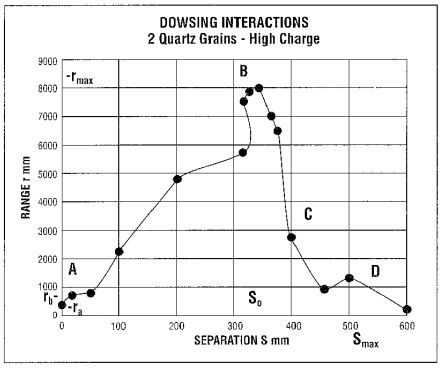

Fig 3.

In general, the dowsable energy line created by the above technique is analogous to a laser beam. However, unlike the usual electro-magnetic laser beams, these "laser beams" created by the interaction of two bodies always end in a spiral, as illustrated in Figure 1 (f).

The effect of two objects interacting and enhancing the dowsable energy produced can be quite dramatic and can increase the size of the dowsable energy field by over fifty-fold. For example, two random pebbles taken from a beach are perceived to emit dowsable energy fields that can be detected up to one metre away. This would apply to each of the two stones measured individually. However, if these two stones are separated, it is possible to detect the dowsable energy from them at over 100 metres away at a certain separation. Figure 3 illustrates in graphical form the relationships between the separation of two objects and the dowsable range. The general effects of the interaction and the shape of the Range-Separation graph are the same for any pair of any sized dowsable objects, be they minerals, crystal, rocks, wood, plants etc.

As measuring the effects of even two small pebbles requires a large outdoor area of up to 100 metres long, it is easier to experiment indoors using, for example, small quartz crystals of the size of sand, which produce proportionally smaller "laser" beam Ranges.

Figure 2 expands quantitatively on Figure 1, and illustrates the physics of the interaction starting with Figure 2(a), which shows a single grain of quartz producing a spherical shaped dowsable energy field with a radius of 190mm centred on the quartz grain (R_a = 190).

Illustration 2(b) illustrates the effect when two grains of quartz are placed adjacent to each other. The dowsable energy field becomes ellipsoidal with the major axis coinciding with the axis that joins the centres of the two grains. The dowsable energy Range along the major axis of the two crystals is R_b, which in this particular case is 380 millimetres. This equals the sum of R_a for each of the grains. This is as expected from Reference 3 where objects with relatively low mass have a dowsable Range which is proportional to mass. The minor radius R_c appears to be the average of R_a and R_b. These findings can be generalised as Law A.

LAW A

When 2 dowsable objects with essentially spherical auras touch, the combined aura is essentially ellipsoidal. The Range of this combined aura along the major axis is the sum of the radii of the individual auras ie $R_b = R_a1 + R_{a2}$, whilst the radius of the minor axis is the average of the single range plus R_b ie $R_c = 3/2\ .\ R_a$

Figure 3 illustrates graphically the quantitative effects of the above interaction. The condition where the two grains are touching each other (i.e. zero separation) corresponds to point 'A' in Figure 3 where the separation is zero mm and the Range is 380 mm. As the separation of the two grains increases towards 300 mm, it is apparent that the Range increases significantly. Area 'B' in the graph, illustrates the dramatic resonance effect between the two quartz crystals when the "laser beam" Range sharply peaks at 320 mm separation. Between points 'A' and 'B' on the graph, the dowsable energy field takes the shape of Figure 2(c).

As the separation increases (between points "B" and "C" on Figure 3 graph) the dowsable Range collapses even faster than it rose between points 'A' and 'B'. The shape of the dowsable energy field of the two interacting particles is illustrated in Figure 2(d), whereby the dowsable energy field between the two objects has shrunk into a long thin cylinder. Eventually when the separation is sufficiently large (in this case about 500 mm), the dowsable Range is back to R_b i.e. 380 mm. This is illustrated in Figure 2(e), which

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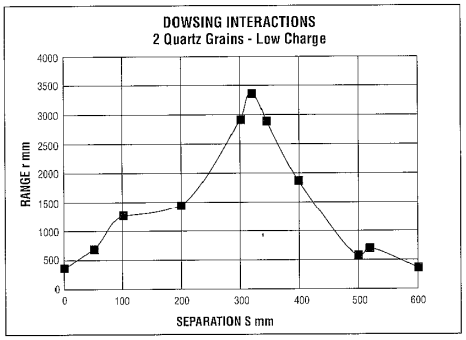

Fig 4.

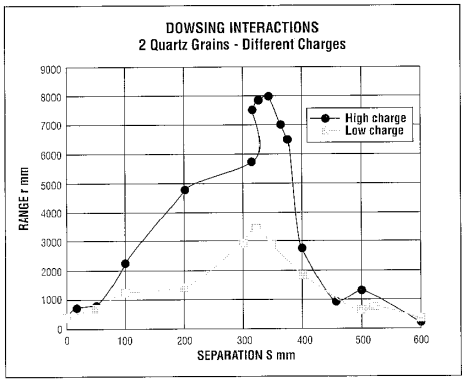

Fig 5.

produces a similar Range R_b as in Figure 2(b), but, in this case, the two particles are very loosely coupled. Eventually, when the separation is in excess of 600 mm, the two particles become totally decoupled and each is reverting to the situation in illustration Figure 2(a), where each particle has a Range R_a of 190 mm. This occurs at about point 'D' on the graph, where the observer is only detecting the effect of one particle emitting dowsable energy.

The dowsable Range of the produced "laser" beam depends on the state of dowsing energy charge of the 2 interactive objects. The graph in Figure 4 is the same experiment as illustrated above in Figure 3, but repeated two months later after the two quartz grains were kept out of sunlight in a totally dark drawer, for two months. It is interesting to note that superficially, there appears to be no reduction in the aura size of either low-charged grains, particularly as R_a remains at 190 mm. Similarly, at zero separation of the two particles, R_b is still 380 mm. However, on repeating the experiment, there is obviously less dowsable energy in the two quartz grains because, although the resonance occurs once again at a separation of 320 mm, the Range of the laser beam is now only 3,350 mm compared to 8,000 mm in the previous experiment, when the quartz particles had been charged up naturally in sunlight. Figure 5 is graphs 3 and 4 superimposed.

LAW B

This experiment suggests there is a qualitative law, which states that electro-magnetic energy increases the Range of dowsable objects, and depriving objects of electro-magnetic energy reduces their Range. Future work is required to measure this effect and produce a mathematical relationship.

In repeating this experiment for two interacting objects of different substances, there are six key measurements common to all situations; three relate to separation and three relate to Range.

Separation

1. At zero separation there is no interaction or resonance.
2. S_o is the optimum separation that occurs at peak resonance: i.e. the longest laser beam.
3. S_{max} is the maximum separation of the two particles where there is still an interaction.

At separations greater than S_{max} the objects are not interacting and appear as if they were isolated.

Range

1. R_a is the Range of a single particle in isolation.
2. When the two particles are touching with zero separation, the dowsable Range is R_b.
3. When the two particles are at optimal separation, the maximum Range of the dowsable energy of the lase beam produced is R_{max}.

Repeating this experiment for different substances, leads t various Laws.

LAW C

The ratio of S_O/R_a is between 1.5 and 1.7. This figure i tantalisingly close to the Fibonacchi constant of 1.61803 (also known as Phi (ϕ), or the Golden Ratio) whic frequently occurs in other applications of dowsing. Thi suggests further research, with more samples and to greater degree of accuracy, is called for, to establish if th ratio is, in fact, 1.618034.

(The Fibonacchi series is a series of numbers startin with 0 and 1, where the next in the series is the sum of th previous two numbers i.e. 0, 1, 1, 2, 3, 5, 8 ..... Th Fibonacchi Constant of 1.618034 is obtained by dividin any number in this series by its previous number especially higher orders. This constant *Phi (ϕ)* is als obtained from the geometry of a pentagon where all corners that lie on a circle are joined. Pentagons produc interesting dowsing effects. The layout of many pre-histori and historically built sites is based on a geometry an trigonometry that involves this Fibonacchi constant. Othe interesting properties relating to this constant is tha subtracting 1 from it (0.618304) also produces its ow reciprocal, whilst adding 1 to it (2.618034) gives its ow square.) (Further general information on *Phi (ϕ)* may b found in references 1 and 2 in the bibliography.)

Law D

The ratio R_{max}/R_a obviously depends on the state c dowsing charge of the two objects, but in general, seems t fall between 3 and 43.

LAW E

The ratio of S_{max}/R_a lies between 1.8 and 2.6.

In attempting to understand the physics of the tw body interactions discussed above, it is instructive t examine some basic conservation laws. For example, doe the energy density of the dowsable energy field vary as th two objects separate? In measuring the energy density in a the combinations illustrated in Figure 2, it seems to b constant. If this is so, it is instructive to look at the volum of the dowsable energy fields as illustrated in Figure 2.

Assuming the dowsable energy in Figure 2(a) is sphere and the dowsable energy in Figure 2(b) is a ellipsoid, it is possible to work out accurately the volume the energy for both single and double objects depicted Figures 2(a) and 2(b). As the particles separate, a fir approximation is that the total volume of dowsable energ comprises (i) a central cylinder whose length is equal to th

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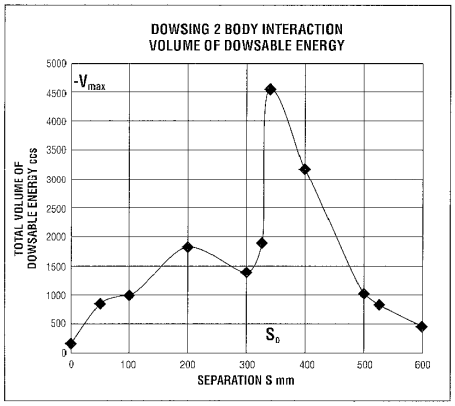

Fig 6.

separation distance (s) and diameter (v) plus (ii) two cylinders of smaller diameter (w) either side, whose lengths each equal the Range (r). The total volume of dowsable energy, as the two objects separate, is illustrated in Figure 6, which, like the previous graphs in Figure 5, forms a sharp peak at the resonance separation of 320mm. The three key measurements in relation to the volume of the created dowsing energy fields are:

(i) The maximum dowsable volume V_{max} at optimum separation S_0

(ii) The dowsable volume of the combined objects at zero separation (V_b) and

(iii) The dowsable volume of a single object in isolation V_a (as illustrated in Figure 2a). This leads to:

Law F

The volume of the dowsable energy fields generated by two objects has a similar relationship as the Range-Separation distance, and forms a resonance peak maximum at a similar optimum separation. The magnification of volume ratio is

$V_{max}/V_a = 158.4$

$V_{max}/V_b = 36.5$

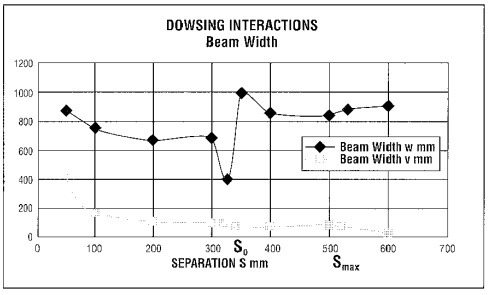

Fig 7.

Measurements of the generated dowsable energy, as any two objects separate, suggest that the dowsable energy density remains constant and uniform. Assuming dowsable energy adheres to the normal conservation of energy laws, as the dowsable energy field's volume increases by a factor of over 36, where has all this additional energy come from? One possible explanation is that the resonance effect produces increased dowsable energy so that the energy density remains constant by draining dowsable energy from the source objects. Assuming the conservation of energy, which must be a sensible starting point, one way of testing this theory, is to measure the decay of dowsable energy over a period of time, when (a) the two objects are left at their optimum separation distance S_0, and compare this to (b) when the two objects are left touching, so that there is no separation. In both cases, sunlight and other ways of charging the objects must be avoided.

The Graph in Figure 7 illustrates how the beam width ((w) in the upper graph of Figure 2(c)) changes with separation. As the two source objects separate, the generated external "laser beam" dowsable energy field decreases in diameter until the beam width is a minimum around the optimum separation distance (S_0). The width of the generated beam then increases to a maximum, levelling off to its initial value.

The diameter of the dowsable energy field between the two source objects (v) is depicted in the lower graph in Figure 7, and, as is apparent, the diameter of the internal field declines to zero at S_{max}

SUMMARY

In Summary, this paper demonstrates that two dowsable objects resonate strongly at a critical separation, and generate a greatly magnified "laser beam" effect of dowsable energy. However, unlike a laser beam, this dowsable beam does not obey the inverse square law, but ends abruptly in a spiral. (The observations described above related to quartz crystals, but the same effect applies to most dowsable objects including living specimens such as plants). At separations greater than a certain distance, the two objects ceased to interact. This experiment also illustrates that dowsing is fundamentally linked to energy fields that vibrate with specific frequencies, which some how relate to mass. A spin-off from this experiment suggests that electromagnetic radiation "charges up""dowsable objects. Once again Phi (ϕ) tentatively seems to enter into dowsing. Furthermore, some challenging experiments are suggested to confirm that the conservation of energy applies to dowsing.

Bibliography

1. Jim Lyons, Page 5, EEG Newsletter Volume 7 Issue 25 March 2002

2. Grahame Gardner, Page 14, EEG Newsletter Volume 7 Issue 25 March 2002

3. Keen, Jeffrey: Measuring Dowsing, September 2001, Vol 39 No. 273, The Journal of the British Society of Dowsers

(To be concluded. Part 2 will cover theoretical considerations).

The Physics of Dowsing: Two-body Interactions Part 2

SUMMARY OF PART 1: THE STORY SO FAR

In summary, Part 1 of this paper demonstrated that most natural objects (such as crystals or plants) interact if they are in sufficiently close proximity. In particular, two dowsable objects resonate strongly at a critical separation, and generate a greatly magnified dowsable "jet" or "laser beam" effect. However, unlike a laser beam, this dowsable beam does not obey the inverse square law, nor extend to infinity with decreasing strength (as does light or gravity), but has a constant strength, and ends abruptly in a spiral. The length of this "jet" depends on the separation of the two objects, as does the changing geometric shape of the dowsable aura surrounding the two source objects as they move apart. In general, the dowsable energy flow along the "jet" is outwards, away from each object, and this "jet" adopts the dowsable characteristics of the source objects. At separations greater than a certain distance, the two objects ceased to interact.

This experiment also illustrates that dowsing is one of the best methods for detecting and measuring universal energy fields that cannot be detected by other means – either by the usual five senses, or by scientific instruments. It is found that the fields involved vibrate with specific frequencies.

A spin-off from these experiments highlights the importance of the state of "charge" of crystalline, or other dowsable sources. Electromagnetic radiation "charges up" dowsable objects, and is therefore fundamentally linked to a mechanism that produces the dowsing phenomenon.

Once again the universal constant, Phi (φ), tentatively seems to enter into dowsing. Furthermore, some experiments were suggested that challenge if the conservation of energy, (a classical fundamental law of physics), applies to the fields being detected via dowsing, or alternatively if dowsable fields involve vector potential and not energy.

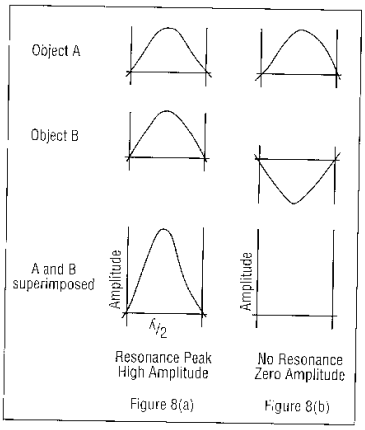

Fig 8 a and b

THEORETICAL CONSIDERATIONS

Up to now, this article has recorded facts that have been observed and measured by means of experiments by independent people, including the Dowsing Research Group. It is important that additional researchers independently verify the experiments outlined in this paper, and ensure they obtain similar results, not only for crystals, but also for different substances and masses.

This following section is an attempt to explain theoretically some of the observations described in Part 1.

VIBRATIONS

One immediate deduction is the apparent existence of a vibrating fundamental field of nature, which interacts with crystals in particular, but with matter in general. This article is an attempt to determine the characteristics and specification of this unknown field, which can be detected relatively easily by dowsing.

The following analysis starts by building on the consequences of observing vibrational fields or energy. This implies waves, which in turn suggests wavelengths with an associated frequency and velocity. Various models are considered that could produce the observed resonance peak, and the reasons why only one resonance peak is observed. It is then possible to obtain values of the most likely wavelength, frequency, and velocity of the dowsable energy field responsible for the effects observed.

DISTANCES AND MASS

Law C (as set out in Part 1) may be written as:-

$S_0 = b . R_a$

(where R_a = the range of the "laser beam" in mm

S_0 = the optimum separation distance between the 2 objects giving the longest "laser beam"

b = a constant which approximates to Phi (ϕ))

From the Bibliography reference 3, another dowsing law is of the form:-

Law G

For large masses $R_a = a . \log M$

(i)(a) where **M** is the source object's mass in grams, and a is a constant with a value approximately 300 for quartz.

For small masses $Ra = d . M$

(i)(b) where **d** is a constant with a value approximately 32 for quartz.

Both **a** and **d** are in units of dowsable Range (in mm) per unit mass (in grams), and this concept is analogous to specific gravity (density). The values of **a** and **d** depend on the composition of the source object. It is important to stress, as set out in Part 1, that one of the prime purposes of this experiment is to simplify the factors involved in dowsing. Hence, in this case, only the basic core auras have been measured. Any dowsable shells and/or repetitive dowsable images, (be they in an arithmetic or geometric series), have been ignored.

Combining the above ***Laws C*** and ***G*** gives:-

For large masses $S_0 = a . b . \log M$ (ii) (a)

For small masses $S_0 = d . b . M$ (ii) (b)

i.e. the optimum separation (S_0) that produces the longest dowsable "laser" beam is a function of **mass**. This is most unexpected.

WAVELENGTHS

That a resonance peak is obtained is good evidence that dowsable fields involve vibrations. In other words when the dowsable fields perceived to be emitted by each of the two source objects are in phase, resonance occurs. Figure 8 is a simplified pictorial representation of this standard effect for two dowsable source objects A and B. When the peaks of the waves emanating from A and B are both superimposed, a peak is produced, as in Figure 8a. A half wavelength λ/2 is used in this example. Figure 8b illustrates the two waves out of phase, producing a null effect.

According to standard wave theory, the resonance peak at optimum separation is a function of **wave-length (λ)**. In other words, the optimum separation distance between the two objects is a fraction or an integer **(i)** of a particular wavelength (λ). i.e. $(S_0 = i . \lambda)$.

So what is the value of this wavelength? A good clue is that there is only one resonance peak observed whilst the

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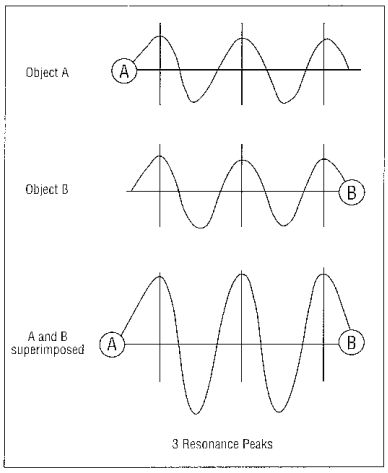

Fig 9

two crystals separate. The only way this could be achieved is if the wave-length (λ) of the dowsable fields was greater than the maximum separation distance S_{max} of the two bodies (i.e. $\lambda > S_{max}$ (iv)).

Figure 9 illustrates what would happen if this were not true. In this pictorial example objects A and B are at their maximum separation distance S_{max} i.e. there is no perceived interaction between objects A and B when they are separated by a distance greater distance than S_{max}. In the figure 9 example, three resonance peaks would be observed, which does not tie-up with observations.

Generalising this example, if the associated wavelengths were shorter, there would be more than one occasion, as the bodies separated, when the waves were in phase, and therefore there would be a sequence of observed resonance peaks. The author has never observed more than one peak. Mathematically, this is identical to $i = 1/\lambda$ in the above formula $S_0 = i.\lambda$ (i.e. $S_0 = \lambda/2$ (iii)).

As a working hypothesis, let us combine the above two assumptions, to produce

Law H

$S_0 = \lambda/2$ (iii)

$\lambda > S_{max}$ (iv)

Combining equations (iii) and (iv) gives

$S_{max} < 2\,S_0$ (v)

From Law E

The ratio of S_{max}/R_a lies between 1.8 and 2.6.

i.e. S_{max} has a value between $1.8\,R_a$ and $2.6\,R_a$.

Combining with Law C gives

$S_{max} = 1.8/1.6\,S_0$ up to $2.6/1.6\,S_0$

or $S_{max} = 1.125\,S_0$ up to $1.625\,S_0$ (vi)

Formula (v), which was derived theoretically, is entirely consistent with formula (vi) which is based on observations. In other words, experimental evidence suggests Law H may indeed be true.

WAVELENGTHS AND MASS

So what are the values of these wavelengths?

From Law H $S_0 = \lambda/2$ (iii)

Combining this with equations (ii)(a) and (ii)(b) gives

For large masses $\lambda = 2\,a\,.\,b\,.\log M$ (vii) (a)

For small masses $\lambda = 2\,d\,.\,b\,.\,M$ (vii) (b)

Table 1 gives for different masses **(M)**, the associated calculated wavelengths (λ) using equations (vii), together with experimentally measured values of aura Range **(r)** as reported in reference 3. It is apparent that the wavelengths have values from about 10 mm for a grain of sand, to about 1-2 metres for hand held sized objects, and up to about 15 metres for megaliths i.e. the larger the object the longer the wavelength. In other words, this experiment suggests that the wavelengths of the interacting fields between 2 objects, is a function of their mass. A mechanism needs to be sought to explain this counter intuitive relationship.

Also contained in Table 1 is the ratio of range **(r)** to wavelength (λ). It is reassuring to note that the detectable range of a dowsable object is always less than its associated wavelength. This strengthens the belief in the following Law I, and gives a further clue to the mechanism of dowsable energy and, in particular, why it seems to stop abruptly and not obey the inverse square law.

Great confidence now exists to further this concept to a tentative law I:-

Law I

Any two dowsable objects (be they grains of sand, crystals, stones, megaliths, plants, animals, in fact any natural objects) will interact if the distance between them is less than the wavelength of the dowsable energy or field perceived to be emanating from those objects.

WAVE VELOCITIES AND FREQUENCIES

Having determined the wavelengths of dowsable energies, it is now possible to calculate associated velocities and frequencies.

The standard relationship between wavelength (λ) and frequency (ν) is:-

$\lambda = \mathbf{c} / \nu$ (where **c** is the wave velocity) (viii)

Combining the above two equations (viii) and (vii) gives Law J:-

Law J

For large masses

$\mathbf{c}/\nu = 2\,a\,.\,b\,.\log M$ or $\nu = c/2\,a\,.\,b\,.\log M$ (ix)(a)

For small masses

$\mathbf{c}/\nu = 2\,d\,.\,b\,.\,M$ or $\nu = c/2\,d\,.\,b\,.\,M$ (ix)(b)

To help understand the ramifications of equations (ix), it is helpful to undertake some order of magnitude calculations. Table 2 gives the frequency of different masses assuming equation (ix) for different wave velocities measured in metres per second. As before, the three masses selected are a grain of sand, an olive sized quartz crystal, and a smaller size megalith, and **a, b,** and **d** are all known constants. The various velocities appearing in Table 2 have initially been suggested by different people in the BSD for the propagation of dowsable energy fields, and subsequently fine tuned by the author. The selection of velocities selected include:– pedestrian speeds, the uppermost limits of mechanical speeds, 30% of the velocity of light, the actual velocity of light, and a speed five orders of magnitude greater than the velocity of light.

As with using dowsing as a technique, as opposed to what phenomenon one is attempting to dowse for, it is important to appreciate, and separate, two different concepts – the velocity associated with a dowsable energy field, and the velocity of detecting the energy field via dowsing.

It must also be borne in mind that the experiments discussed in this paper relate to earth energy type dowsable energy fields. Different types of dowsable energy fields may have different speeds of propagation. Similarly, different types of dowsing may have different speeds of propagation. For example, the velocity of remote dowsing and accessing the Information Field could be much greater than physically detecting on-site dowsable earth energies. Table 2 suggests the following:

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WAVELENGTHS of DIFFERENT MASSES				
Mass M grams		Wavelength λ mm	Range r mm	Ratio r/λ
Grain of sand	0.1	10.4	10	0.97
Olive size crystal	16	1,657	500	0.30
Small megalith	6,000,000	15,152	5,600	0.37

Table 1

For pedestrian speeds, the associated frequencies are within the low audio and sub-audio range.

For velocities of 100,000 metres per second, the associated frequencies are similar to those in the electromagnetic radio frequency.

At 30% of the speed of light up to the speed of light, the frequencies are analogous to electromagnetic radio and microwave frequencies.

At five orders of magnitude greater than the speed of light, the frequencies are similar to those between infra-red, visible and ultra-violet light.

Which of these orders of magnitude relates to on-site observations and measurements? The velocity of 6 metres per second, and the 0.4Hz figure for megaliths ties up with experience. For example, at Avebury, smaller stones (such as stone 41) have been observed (e.g. by Wessex Dowsers on 4th June 2001 at 11 am) to pulse at a rate of between 60 – 24 times per minute, i.e. 1 – 0.4 times per second.

Jim Lyons, who suggested 10 ft per second, was the BSD member who was closest to the velocity of 6 metres per second.

Frequency (Hz) of different masses, assuming different wave velocities

Velocity	Mass grams			Comments on Frequency Ranges
m/sec	Grain of sand 0.1	Olive size crystal 16	Megalith 6,000,000	
6	579.42 Hz	3.62 Hz	0.40 Hz	Audio - sub-audio
1.00E+05	9.66E+06 Hz	6.04E+04 Hz	6.60E+03 Hz	Radio
1.00E+08	9.66E+09 Hz	6.04E+07 Hz	6.60E+06 Hz	Radio - microwave
3.00E+08	2.90E+10 Hz	1.81E+08 Hz	1.98E+07 Hz	Radio - microwave
3.00E+13	2.90E+15 Hz	1.81E+13 Hz	1.98E+12 Hz	ir - visible light - uv

Table 2

Interestingly, at the other extreme, when using, say, a Mager disc to measure colour, and hence the frequency, of dowsable energy fields one often obtains answers between infra-red through the visible light spectrum to ultra-violet frequencies. Does this suggest for some dowsable fields that the associated propagation speeds are several orders of magnitude greater than the speed of light? However, some schools of thought claim that the brain associates certain audio frequencies with specific colours. Although this is difficult to prove "scientifically", this may be an alternative explanation for perceiving and associating colour whilst dowsing.

Similarly, before reaching erroneous conclusions, researchers should bear in mind that:-

(i) brainwave activity ranges from about 22 Hz for beta waves, via 8-12 Hz for alpha waves, 4-7 Hz for theta waves, and down to 1-3 Hz for delta waves in deep sleep. That is, these are similar frequencies to those obtained above for olive sized crystals and smaller objects.

(ii) 7.8 Hz is the resonance frequency of the Earth's geomagnetic field.

(iii) 6 m/sec is a similar order of magnitude to the speed of nerve impulses, which can travel at a rate of anything up to 100 metres per second.

It is therefore necessary that dowsers do not interfere with their own experiments, and finish up just measuring their own nervous systems! This concept also has a similarity to the "Uncertainty Principle" which is a facet of quantum physics.

MASS AND FREQUENCY

If Law J, the mass-frequency relationship, were confirmed to be true, it would be beneficial to explore this further and speculate as to the nature of the phenomenon that causes mass. Interestingly, Law J is a relationship between **frequency** and **mass**. Conceptually this is similar to String Theory whereby **matter** comprises **vibrating** loops of strings. In a similar vein, whilst speculating, is there any connection between dowsable energy fields, the Information Field, universal quantised space-time, Zero Point Energy, and dark matter/energy? The latter subjects as well as String Theory are all at the cutting edge of "orthodox" physics.

DOWSING MODELS AND THE INFORMATION FIELD

Two alternative dowsing models are possible to explain the findings of this (and other) experiments.

(a) each object independently radiates a dowsable energy field or vector potential (which is charged up, for example, by the Sun), or

(b) there is an all-pervading ether of dowsable energy (the Information Field) with which dowsable objects interact, or "reflect". This concept is analogous to general relativity in which mass distorts the space-time continuum as a means of explaining gravitational attraction.

Intuitively, the first of these two models (model (a)) sits more comfortably with the findings of this 2-body experiment, because, taking a very simplistic view, the resonance peak occurs when the waves emanating from each crystal are in phase. This model of dowsable energy fields would seem more relevant to Earth Energies, or on-site physical dowsing where different dowsers/observers obtain similar results independently and with a high correlation. In addition, model (a) seems more intuitive when a dowser standing on a dowsable energy line, or in close proximity to a powerfully energetic crystal, feels in his body the presence of the phenomenon, or when standing at the centre of a powerful spiral feels his body being lifted or pushed down. Another reason for preferring model (a) is that psychometry (the reading of objects when, say, grasped in one's hand) is easier to visualise when the relevant information is held in the object's own aura, as opposed to a "remote", universal information field.

The second of these two models (b) would seem more relevant to information dowsing, or remote dowsing where

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what is being sought is, literally, all in the mind of the dowser/observer with no physical reality.

CONSERVATION OF ENERGY

However the conservation of energy experiment discussed earlier in conjunction with Law F would suggest that Model (b) is also relevant in interpreting this two-body experiment. It will be recalled that two bodies at their optimum separation distance can generate a dowsable aura up to about 36 times greater in volume that the original aura of each body when separated. As the measured field strength, as well as the energy density are perceived to remain the same whilst the two bodies separate, where does the additional 36 times the energy come from? It would seem there are at least six alternatives.

1. There is no conservation of energy. This seems most unlikely, as this would be breaking a fundamental law of physics, but see the 6th alternative below.
2. The energy could be generated when physically separating the 2-bodies. However, this is unlikely as the same results apply if the 2 bodies start as separated.
3. The extra energy and increased aura could emanate from the source crystals, so that at optimum separation S_0, the source crystals decay/discharge their energy quicker than when they are in physical contact. However simple experiments prove that this is not true, as the decay of two bodies at optimum separation is identical to the decay of two crystals touching each other. For example, in one set of experiments, two quartz crystals, of mass approximately 10grms, were separated at S_0, and continuously kept isolated in the dark so they discharge "naturally" without light (e-m radiation) or other objects re-charging them. They both discharged so no aura could be detected after 10 days 21 hours – the same time as if kept in the dark but touching each other.
4. There is no energy involved in an aura, only vector potential. This leads to the philosophical question of what is manifest and what is un-manifest with relation to dowsing theory and practice. This option could be relevant in explaining part of the theory of dowsing in terms of the old concept of action at a distance, and as a mechanism of transferring energy from one body to another. But looking at the problem in its entirety we have demonstrated there is resonance, frequency, and waves and this is usually associated with energy, especially as spirals are generated at the ends of the dowsable jet produced by two separated dowsable bodies. Additionally, it is unlikely that this option would enable auras to contain all the information obtainable by dowsing them.
5. If the dowsable effects of two-body interaction are created by the interaction of the two bodies with the Information Field, conventional energy may not be involved. The perceived dowsing results of the experiments would be based on the organisation of information, and geometric patterns generated, i.e. the brain is not physically detecting an aura in the perceived world, but sub-consciously detecting the geometric shape in the Information Field.
6. The additional energy may come from the Information Field. Interestingly this option could be analogous to Page 192 of Stephen Hawking's book "The Universe in a Nutshell", where, in the latest brane theory, the conservation of energy appears to be breached in the case of gravitational energy. However this apparent violation is due to our restricted view of the universe and the missing energy is going into an extra dimensional brane. If the theory of the Information Field turns out to converge with the latest ideas in physics (i.e. a multi-dimensional universe, string theory, M-theory, and branes), this alternative could be a valid explanation for interpreting the results of the two body experiment, i.e. energy is indeed conserved, but only in relation to the holistic universe.

Consequently, all of the above alternatives support Model (b) to explain the dowsing results of this experiment.

WAVE TYPES

The above theoretical explanations do not explain why a "laser beam" is produced by two interacting objects, or why the laser beam ends in a spiral. A possible reason is that the theoretical treatment so far assumes the simplest case of Longitudinal waves. It may be more fruitful to explore Torsional or Compression waves. These three types of waves form part of standard classical wave theory, appearing, for example, in earthquakes.

WAVES AND GRAVITY

Of the three alternative waves, Torsional waves would seem to be the nearest analogy to the tube-like dowsable beams and spirals observed in this 2-body experiment. However, it is highly unlikely that Torsional waves on their own can explain the complex fields detected by dowsing. A further clue is that all spirals produced as a result of 2-body interactions seem to be around a **vertical** axis. This implies that gravity is involved, as the downward spiral may be a result of Torsional waves interacting with gravity to produce a dowsable spiral. But more probably, the total solution also involves the dowsable source objects interacting with quantum vibrations within the Information Field, as well as electromagnetic radiation and gravity.

The author has attempted dowsing experiments in reduced gravitational fields by measuring R_a at different altitudes. Dowsing at 26,000 feet, a possible result is that R_a could be 5% less than at sea level, but a bumpy flight, coupled with a concerned flight crew, and inquisitive passengers make experimental error greater than 5%! In retrospect, this experiment was doomed to failure, as standard inverse square law calculations prove that the difference in gravitational force at 26,000 feet is less than 1% different from that at sea level – a difference probably too small to measure, or even have any noticeable effect on dowsing.

Interestingly, the audio and sub-audio frequencies in Table 2 are of the same order of magnitude as Gravitational waves currently being searched for by several ground-based and Space-based detectors. Gravitational waves from the largest objects in the Universe such as supernovae are being sought near 1,000 Hz, but perhaps more relevant here is that frequencies below 10 Hz are being sought for smaller astronomical bodies.

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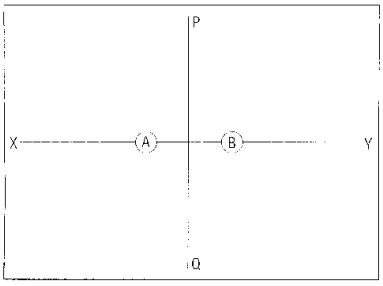

Fig 10

SUMMARY/ABSTRACT

This article demonstrates that any two natural objects, in sufficiently close proximity, interact with each other. Dowsing seems to be the only way we can detect this interaction. Figure 10 illustrates this phenomenon, where A and B are any two animal, vegetable or mineral objects.

A dowsable line, designated XY, which passes through the centre axis of A and B, is generated when A and B are not touching. Depending on the distance separating A and B, the length of the line XY can vary from zero to hundreds of feet. The greatest length of XY is when A and B are at an optimum critical separation distance, which depends on the nature of A and B, their mass, and the universal physical constant **phi** (ϕ).

A dowsable line PQ is also generated by A and B, but this is at right angles to the line XY, and passes through the geometric centre of the separated objects A and B. However, unlike line XY, line PQ does not vary in length as objects separate, but in principle, remains at a constant length. (For olive sized quartz crystals this length is about 3,710 mm or just over 12 feet).

Fascinatingly, unlike any other long-range forces in nature, (such as light, radio waves, gravity, etc.) lines XY and PQ do not become weaker and weaker extending to infinity. The dowsable strength of these two generated lines remains essentially constant. They both end abruptly, with each end disappearing into a spiral.

The experiments described in this article demonstrate that the maximum length of line XY is caused by a resonance effect, which in turn indicates the interaction of two vibrating fields with associated wavelengths. An important far-reaching deduction is that the size of these wavelengths (i.e. the distance between adjacent wave peaks) is related to the mass of the objects involved. For "every day" sized objects these wavelengths range from about a quarter inch to 20 feet. Moreover, any two natural objects will interact if their separation is less than their associated wavelength.

Vibrating waves have associated frequencies and velocities. There would seem to be a strong relationship between the mass of an object and the frequency with which it is naturally vibrating. This, in the macro world, is a similar concept to "string theory", which is one of the current theories in physics relating to the micro and quantum world of fundamental particles. A further deduction is that the speed of these dowsable waves may be approximately at a walking or running pace.

Other unexpected and far reaching conclusions suggest dowsing involves the interaction with the universal, all-pervading, Information Field. Moreover, an apparent bedrock of science, "the Conservation of Energy", appears to be breached, but the "missing" energy could come from the Information Field. This again may tie-in with current mainstream Physics.

Last, but not least, the simple experiments described in this article demonstrate that both gravity (e.g. from The Earth), and electro-magnetic radiation (e.g. ultra violet light from the Sun) are fundamentally involved in the mechanism we perceive via the phenomenon of dowsing.

CONCLUSION AND THE WAY FORWARD

The introduction to this article promoted the benefits of measurement, numbers, geometry, and mathematics. Subject to independent verification, surely the power of this standard scientific technique has been well demonstrated in this article with the discovery of 10 laws, and 9 original equations?

The conclusions seem to imply that dowsing may be a combination of:-

(i) unknown universal Earth energy fields (comprising energies, forces, frequencies, spins, etc), created by matter and currently only detectable by dowsing. Alternatively, mass and other perceived "realities" are caused by matter interacting with, say, the Information Field,

(ii) an apparent illusion created by the brain, which detects "holographic" images of geometric shapes that are not really there physically in our currently perceived world, but appear in the conscious mind in its widest sense, (not just the physical brain), via interacting with the rest of the universe.

This seems to be analogous to the wave-particle duality that has intrigued physics for nearly a century.

Both of the above interpretations of dowsing have fundamental significance. This changes the way we see the Universe, and should gradually produce a paradigm shift in the way we think, comparable to us no longer believing that, in spite of it being obvious, the Sun goes round the Earth. These are indeed exciting times!

The contents of this article have been achieved by simply moving apart 2 randomly selected stones from a beach, observing what happens, and followed by 3 years of analysis in attempting to interpret the findings. Applying the same scientific approach to the numerous other aspects of dowsing should similarly yield fruitful insights.

Any person, group or academic body interested in taking any of the above concepts further, wishing to undertake their own associated research work, or just requiring more information, should contact the author via the BSD office. The author would be willing to co-ordinate this work with others in a structured and more productive method of working.

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