# 2-Body Interaction, Bifurcation, Chaos, Entanglement, and the Mind's Perception

*by*

***Jeffrey S. Keen***

***BSc Hons ARCS MInstP CPhys***

www.jeffreykeen.co.uk

## Abstract

Using the well documented technique of noetics, this paper details the findings for 2-body interactions. As any two bodies separate, several independent observations have confirmed the creation of subtle energy beams, vortices, Cornu spirals, null points, resonance effects, and bifurcation. Currently, the mind is far superior to machines in detecting this complex pattern which is affected dynamically during the separation process. This is a fundamental phenomenon involving universal ratios. For example, to enable 2 circular bodies to interact, their maximum separation distance is their radius raised to the power of the Golden Ratio (1.6108). Similarly, a bifurcation ratio is obtained that equals half the Feigenbaum constant of 4.669. Interesting comparisons are made between identical abstract and solid geometries of the two source objects. Also demonstrated is entanglement between two macro sized bodies. The conclusions provide evidence for consciousness and the mind's perception being linked to chaos theory, the laws of physics and the structure of universal space-time.

## Key Words

Mind; bifurcations; spirals; entanglement; chaos; golden ratio; subtle energies; structure of the universe

## Introduction

There are numerous examples in the bibliography at the end of this paper as to the link between consciousness and the structure of the universe, with noetics being a powerful technique to research this connection. Although dowsing is usually associated with physical objects, Keen [2010 a, c] demonstrated the methodology and benefits for dowsing pure abstract geometry when investigating possible interactions between the mind and the structure of the universe. Eliminating the variable of mass is one great advantage, and enables fundamental comparisons to be made between solid and abstract sources possessing identical geometry. This paper analyses the simple case of two abstract circles such as drawn on paper, and then generalises the findings to any two physical bodies.

## Findings

Keen [2002] discovered mind perceived two-body interactions, which were subsequently independently confirmed by several members of the Dowsing Research Group. The updated research findings over the last 11 years are presented in this paper. An interaction between any two objects occurs if they are in close proximity. The observed pattern is shown in Figure 1. Its size is a function of the dimensions of the source objects and their separation distance. The perceived pattern comprises a complex arrangement of straight lines, dipole "lines of force", subtle energy beams, vortices, Cornu Spirals, and curlicues, which have complex dynamics and null points as described below.

### *Straight Lines*

2-circle interaction produces six straight dowsable subtle energy lines in 3 groups of symmetrical pairs, as follows:

1. Two lines, or more accurately 2 subtle energy beams, **a** & **b** are on the axis through the centres of the 2 circles, as shown in Figure 1. In general, for any separation, the lengths of lines **a** & **b** are equal. They have a perceived outward flow. Their length is variable and is a function of the separation distance between the 2-circles. As an example, Figure 2 is a graph of the length of this beam plotted against the separation distance between two 3.85 mm diameter circles. This curve is sinusoidal with perturbations. No beam is produced if

the two bodies are touching and if their separation distance is greater than 6 cm. The maximum beam length is when the separation distance is 3 cm. The theoretical aspects of Figure 2 will be elaborated later.

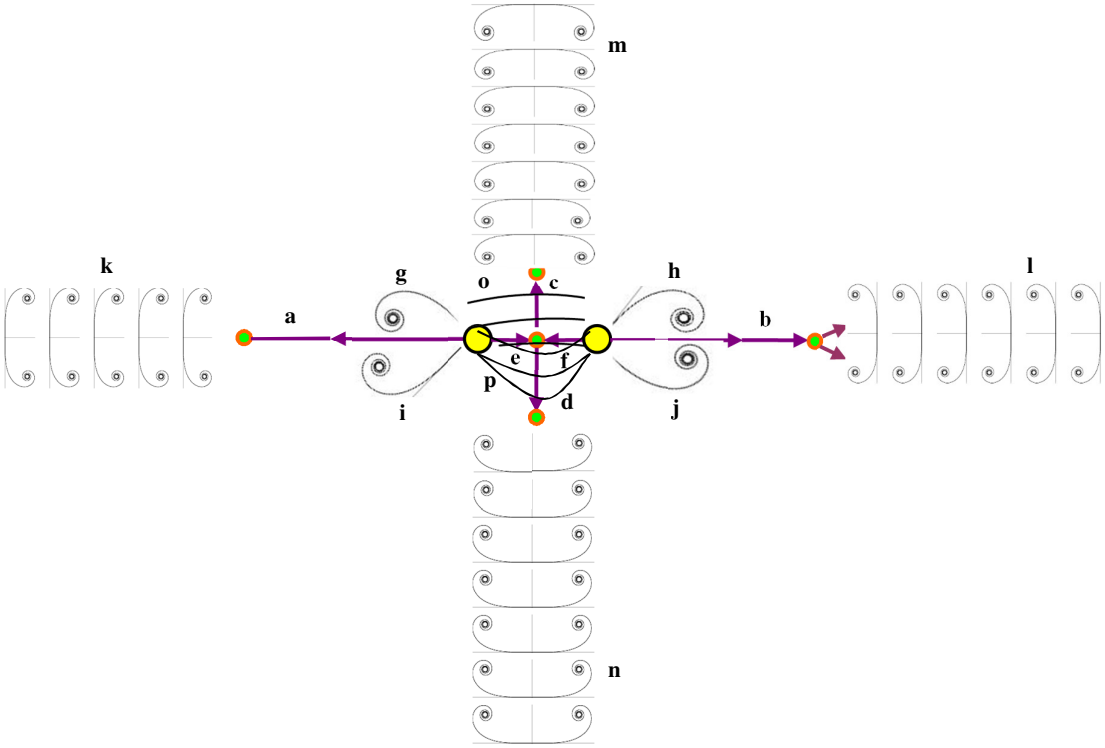


**Figure 1**. The Dowsable Pattern Produced by 2-Body Interaction

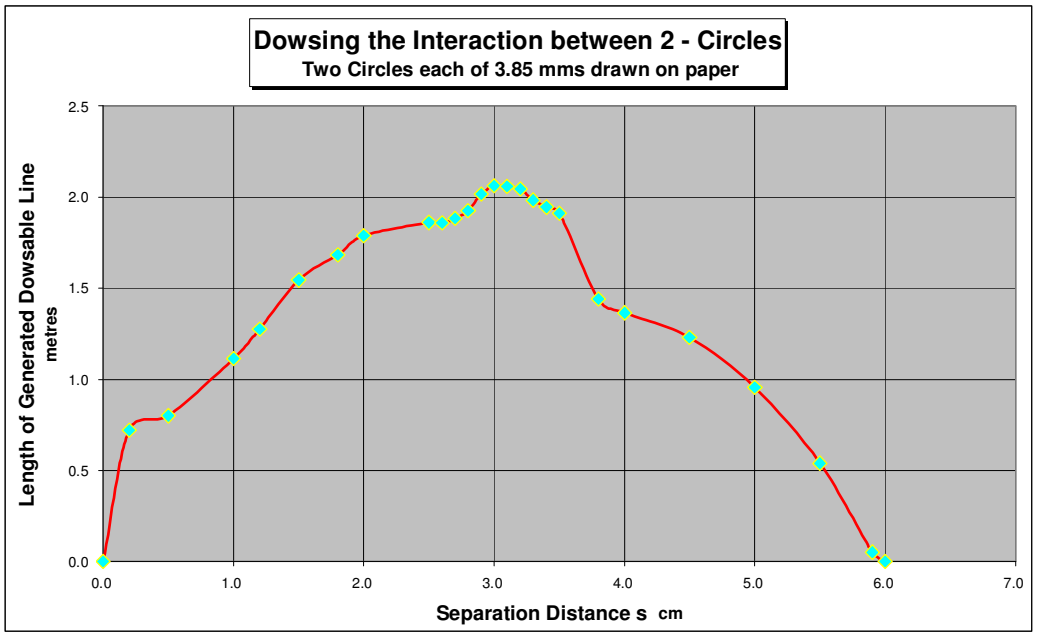


**Figure 2.** The Changing Subtle Energy Beam Length when Separating 2 Circles

2. The two lines **c** & **d** are at right angles to the lines **a** & b, and are equidistant between the centres of the 2 circles if the circles are of equal size. If not, the point where **a** & **b** crosses **c** & **d** is closer to the larger circle. Lines **c** & **d** also have a perceived outward

flow, but unlike lines **a** & **b** are almost fixed in length as the circles separate. In general, the lengths of lines **c** & **d** are equal.

3. The two lines **e** & **f** have an inward flow toward the geometrical centre point between the 2 circles.

### *Curved Lines*

Also depicted in Figure 1, are 3 types of curved lines:- "lines of force", curlicues, and Cornu spirals.

*1. "Lines of Force"*

Between the 2 circles, 6 curved lines, marked **o** & **p**, emanate inwards from the 2 circles. These look similar to a conventional bipolar magnetic lines of force pattern. They consist of 2 pairs each comprising 3 curved lines either side of the central axis.

*2. Cornu Spirals*

Outside the ends of lines a & b and c & d are 4 coaxis sets of Cornu spirals marked as k & l and m & n. The number of spirals in each set is discussed later. Appendix 1 gives measurements and ratios for these Cornu spirals, and curlicues.

3. *Curlicues*

Four sets of curlicues marked as **g**, **h**, **i** & **j** emanate outwards from the 2 circles. Each set comprises 3 curved lines, making 12 in total. These possess a flow away from the 2 circles, on either side of the straight central axis. As illustrated, the lengths of these curlicues are less than the straight lines **ab** and **cd**. *(However, due to lack of space, Figure 1 only shows 4 of the 12 lines emanating from the 2 circles).*

These curlicues and Cornu Spirals are well known in optics and occur when studying interference patterns and diffraction. Lines **ab** and **cd** seem to act as mirrors so the observed patterns are symmetrical about these lines.

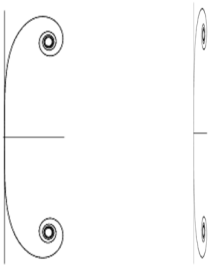

**Figure 3**. Cornu Spirals

### *Conical Helices*

There are 17 spirals, or more accurately, conical helices in the Figure 1 pattern, made up as follows in 3 categories:

*1. Terminating Beams*

When looking downwards, 4 clockwise spirals, indicated in Figure 1 with a green and red circle, terminate the straight lines.

*2. Curlicues*

There are 12 spirals which terminate the curlicues. Those 6 positioned above the central axis of the 2 circles are also clockwise, but the 6 below the central axis are anticlockwise.

*3. Central Spiral*

Between the 2 circles, where lines **e f** and **c d** meet, a clockwise spiral is formed (looking down). If the 2 circles have equal sized auras this spiral, also marked with a green and red circle, is midway, but if they are unequal it is closer to the largest circle. When the source paper is horizontal, this spiral has a perpendicular vertical vortex.

## *Null Points*

Whilst separating any 2 objects, a series of null points are created. As the null points are being approached the curved lines become flatter, as illustrated in Figure 3. Eventually, at these null points all 16 terminating spirals, the central spiral, the Cornu spirals, the 12 curlicues, as well as all the 6 lines of force disappear. All that remains are the straight lines **ab** and **ef** through the central axis and the perpendicular lines **cd** which are not affected, nor are the directions of perceived flow. The pattern at these null points is depicted in Figure 4.

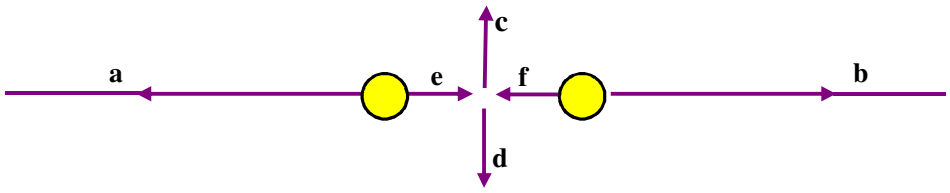


**Figure 4**. Dowsed Pattern for 2-Circles at Null Points

## *Physical or Abstract*

Usually, the observed dipole pattern is the same for abstract source geometry, such as drawn on paper, as it is for any identical solid source geometry. The observed patterns and dynamic effects are identical. However, as the two objects are separated, there are three significant quantitative differences between abstract and physical source geometry. These relate to null points, Cornu spirals, and auras.

1. *Null Points*
   Paper drawn circles produce 6 null points whilst solid discs only produce 4 null points.

2. *Cornu Spirals*
   Abstract objects generate 4 sets of Cornu spirals each set comprising **9** separate Cornu spirals (i.e. 36 in total). Solid objects produce 4 sets of Cornu spirals each comprising **7** separate Cornu spirals (i.e. 28 in total).

3. *Auras*
   Abstract circles produce 9 aura rings extending outwards from the core aura, but solid discs (both 3-dimensional and 2-dimensional) only produce 7 rings

This is only a summary, but more details are in Appendix 3. It seems counterintuitive that abstract circles have 9 Cornu spirals, but solid circles (be they 2-dimensional paper cut-outs, or 3-dimensional discs) only have 7 Cornu spirals. Instinct suggests that a solid disc should contain more information than an abstract circle drawn on paper, and, for example, a 3-dimensional metal disc has even more information than a 2-dimensional paper cut-out. However, having more information does not seem to produce more rings! These findings are consistent with several other findings involving comparisons between abstract objects and physical objects [Keen 2011 b, c].

## *Bifurcation*

All 16 termination spirals bifurcate, but not the centre spiral. The spirals, or more accurately the conical helices, bifurcate into a symmetrical pair of "parabola like" shaped lines which end in another helix which also bifurcates. The classical representation of bifurcations is shown in Figure 5, and the process continues with ever decreasing parabola lengths. About 6 bifurcations is the practical end of this "infinite" harmonic series. As usual in quantitative

dowsing, individual observers obtain different bifurcation lengths, but the same ratios [Keen 2009 d]. The bifurcation factor seems about 2.3, which equals half of the Feigenbaum's constant of 4.669 that is usually associated with bifurcation in standard chaos theory.

The angle between adjacent bifurcations is about 30° which possibly decreases as the bifurcation evolves. All the above measurements were made on the ground – none involving height. The bifurcations process starts at the entry points of the spirals comprising the conical helices. As discussed later, there is an interesting and rare form of subtle energy perceived at the points of bifurcations.

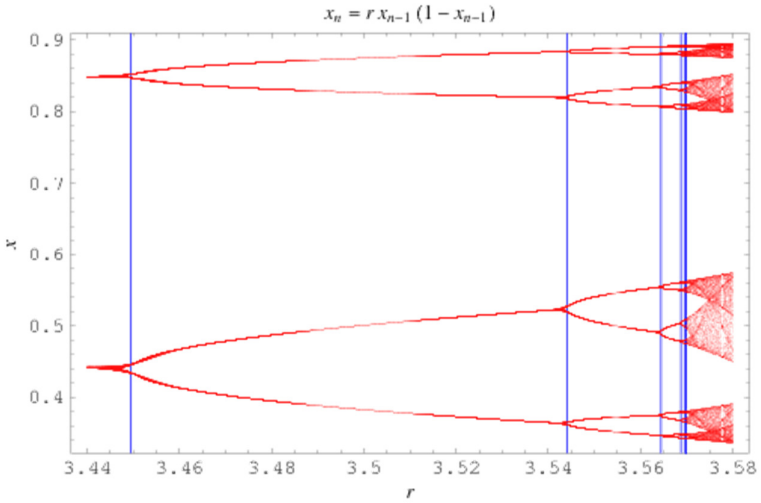


**Figure 5**. An Illustration of Bifurcation in Standard Chaos Theory

## Entanglement and auras

The author published, on his website in 2008, a paper entitled Entanglement of Large Sized Objects. Several physical methods were adopted to demonstrate that entanglement was indeed achieved by communicating information between two objects. These included the use of auras, magnetism, and pressure. Can similar techniques be used to demonstrate if the 2-body findings can partially be explained by entanglement? However, it is important to avoid 2-body entanglement caused by other causes such as a psi-line connection [Keen 2012 b], two objects separated from the same source such as a crystal broken in two, or placing two dissimilar objects on energy lines and their nodes.

**Figure 6.** Pictorial Representation of the Auras for two Interacting Objects

Figure 6 illustrates the effect on the auras of the two interacting circular objects which are depicted in yellow. It is important to realise that the same findings are observed if the two objects are either solid, such as two coins, or abstract such as two circles drawn on paper. For ease of explanation only the left hand coloured bands in Figure 6 illustrate the effects, but these effects equally apply to the right hand object. When the two bodies are sufficiently separated so they do not interact, the size of their aura is illustrated by the green band. The other coloured bands are not created. When the two objects are brought sufficiently close so

they interact, their auras double in size, as illustrated by the combined green and blue band. That entanglement is taking place can be demonstrated by putting pressure on the right hand object. The aura of the left hand object immediately increases its size to that of the combined green, blue, and red band; the exact size being a function of the pressure applied.

Appendix 4 gives the protocol and quantitative results of the above experiments, which have an accuracy of between 6% and 8%. Table 1 gives a brief summary of how the auras expand for two £1 coins. As is apparent, compared to their isolated state, auras double in size when near their optimum interaction separation distance. When an arbitrary weight of 2.9 g was placed on one object, the aura of the other object immediately increased its size by about 1.5 times.

**Table 1**. Summary of Aura Expansion during Interaction and Entanglement

| Increase in Isolated Aura Size when Interacting | Increase in Aura Size when Interacting with 2.9 gms Pressure on Partner |
|---|---|
| **1.97** | **1.52** |

Further evidence that two body interaction is a special case of, and different to, multi-body interaction is summarised in Table 2 [Keen 2010 a]. As is apparent, every property observed for 2-body interaction is different or absent in multi-body interaction. In particular, bifurcations only occur in two-body interaction. It should be pointed out that the above examples of 2-body entanglement only apply over relatively short distance, whilst the two objects are interacting. This is obviously different from the generalised case of entanglement which applies irrespective of the separation distance between the two objects.

**Table 2**. Comparison between 2-body and multi-body interactions

| Observation | 2-objects | 3-objects |
|---|---|---|
| Auras must overlap | √ | x |
| Short range interaction | √ | x |
| Beam length dependent on the separation | √ | x |
| Vortex produced | √ | x |
| Bifurcations | √ | x |
| Type-4 lines | √ | x |
| Lengths measured are not invariant to direction | √ | x |
| Mager colour when aligned | Mauve | White |
| Frequency of perceived beam vibrations | mHz | kHz |

### *Mager Colours*

Using a Mager disk, (a hand held circular disc comprising different coloured segments found useful by dowsers over many years) the 2 straight lines **a** & **b** are usually **mauve/violet**, but sometimes, for unknown reasons, the lines change to **white** (but only if they also change to Type 1 subtle energy)**.** The Cornu spirals, the 6 curved "lines of force" and the 12 curlicues and their terminating spirals are **green**. Unexpectedly, the curved bifurcating lines are **white,** but their terminating spirals are **green**, and where they bifurcate there seems to be a small **mauve** portal. It is not known what these colours mean in this context, but they could relate to frequencies of the subtle energies involved, or wavelength of standing waves.

### *Subtle Energy Types*

The author has categorised 8 types of subtle energies [Keen 2005, 2009 a]. The straight lines in Figure 4 can be categorised as **Type 4** subtle energy which is usually associated with multi-body interactions, psi-lines, or one of the 3 different "earth energy" lines between banks and ditches. However, sometimes, as mentioned above, these straight lines are **Type 1** subtle energy which is very common in "earth energies". Examples of Type 1 are the auras of most objects, or most dowsable ley lines, or the 14 lines either side of banks and ditches. Interestingly, the lines after bifurcation can be classified as **Type 1** lines.

The curved lines, Cornu spirals, terminating spirals, and single spirals can all be categorised as **Type 3** subtle energy. Type 3 is also very common in "earth energies" and is always involved in spirals. For example, it is found as one of the lines comprising a series of spirals between banks and ditches. Type 3 has different properties to Types 1 and 4.

**Type 5** is a rare form of subtle energy which is detected at the small portal at points of bifurcation by spirals. Intriguingly, there is a 5-dimension dowsing response at the 2 points in each vortex where it bifurcates. This is the same response as dowsing a half sine wave, [Keen 2011 a], or the spirals at the end of radials in a peace grid [Keen 2009 c]. It is not known how to interpret this 5-dimensional response.

## Analysis and Theory

The above findings for 2-body experiments suggest that there are 2 different phenomena; one for the creation and control of straight lines and another for the curved lines.

### *1. Straight Lines*

As explained in appendix 5, the variable length subtle energy beam, which is a straight line passing through the axis of 2-bodies, can be explained by pure resonance of 2 sine waves, each with a half wavelength, **λ**, which equals the maximum separation distance between two interacting bodies.

$$\lambda = 2 \,.\, S_{max} \qquad \text{(i)}$$

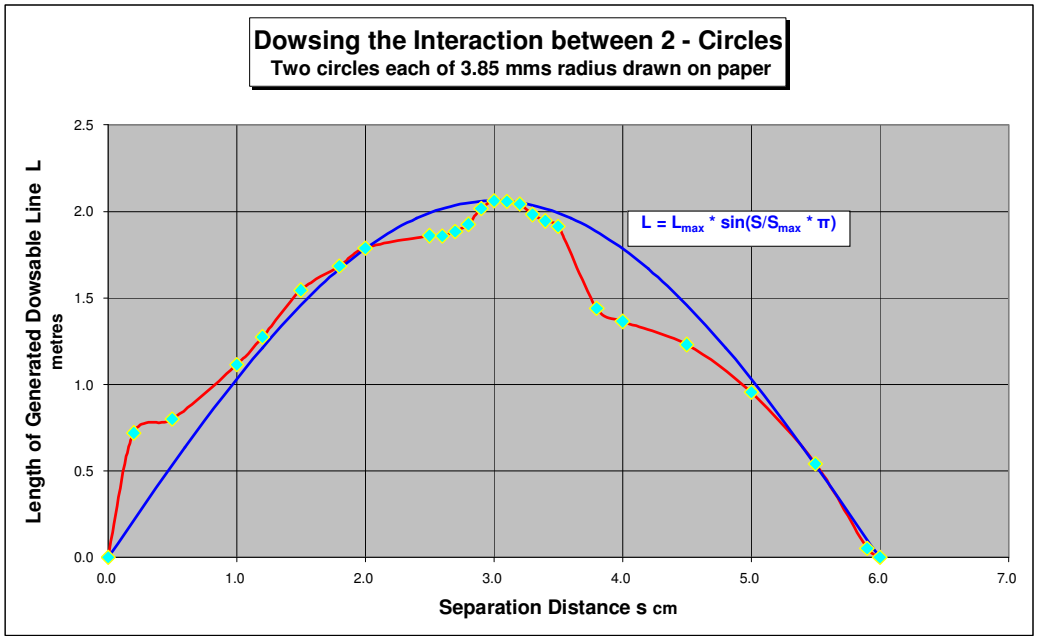


**Figure 7**. A Theoretical Equation Superimposed on Actual Experimental Results

If **L** = the length in metres of the generated subtle energy beam, and
**S** = the separation distance between the two circles.
The heuristic formula based on this theory is:

$$\mathbf{L = L_{max} * \sin( S / S_{max} * \pi )} \qquad \text{(ii)}$$

Substituting from the graph in Figure 2,

$$\mathbf{L_{max} = 2} \text{ and } \mathbf{S_{max} = 6}$$

$$\mathbf{L = 2 * \sin( S / 6.00 * \pi )} \qquad \text{(iii)}$$

This theory is supported by Figure 7 where the theoretical equation (iii) is superimposed on the actual experimental results depicted in Figure 2. Equation (iii) is a very good fit to the observations, even allowing for the perturbations.

What is causing the perturbations between the theoretical equations and the kinks in the Figure 7 curve of actual data? In the real world, and from other research work [Keen 2009 e, f], the perturbations are caused by the Earth's gravity, spin and magnetic field; factors that were not considered in the above theoretical resonance equations.

As an example of these perturbation factors, orientation of the 2 circles to true or magnetic north does not seem to make a significant difference, but a strong artificial E-W magnetic field produces the same results as detailed above, but with increased separation distances by about 10%. i.e. magnetism is one cause of the perturbations.

A further clue is that the apparent perturbations seem to occur at the same separation distances as the null points, and these distances form a series with a similar geometric constant as the null points. The implication is that null points are also caused, or affected by the above local Earth forces.

Equations (ii) and (iii) are not absolute as they rely on experimental parameters. Can we eliminate these parameters and perturbations, and have a relationship that only relies on the radius of the two circles? The radius of a circular object's aura is a function of the object's radius [Keen 2011 a], and determines the maximum separation distance and maximum line length.

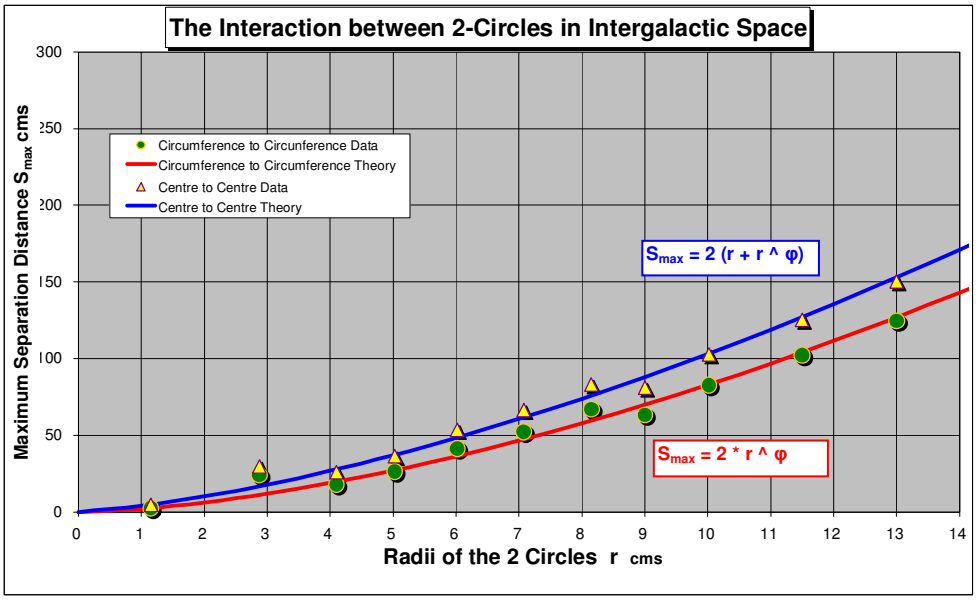


**Figure 8**. "Proof" of the Formula for Maximum Separation

Figure 8 illustrates the results of repeating the identical 2-circle experiment with the mind's intent in intergalactic space, thereby eliminating all local forces that were causing perturbations. It is a graph of the relationship between the maximum separation distance $\mathbf{S_{max}}$ between 2 interacting circles, and their radii, **r**. This demonstrates a very good fit between the green circular data points, and the heuristic power law equation (iv) plotted in red.

$$\mathbf{S_{max} = 2 \,.\, r^{\varphi}} \qquad \text{(iv)}$$

The measurements for equation (iv) were taken from circumference to circumference. If measurements are taken from centre to centre, the separation formula becomes

$$\mathbf{S_{max} = 2(r + r^{\varphi})} \qquad \text{(v)}$$

Equation (v) is also plotted in Figure 8 as the blue curve. This theoretical curve is superimposed on the observed yellow triangular data points. It is apparent that there is a good fit.

Equations (iv) and (v) only involve the universal constant Phi (φ) as an exponent, and do not involve any arbitrary constants. These equations are therefore both absolute and universal. It is surprising that only the dimension of length appears in all these equations (i) – (v); the radii of the source circles and their separation. No other forces, factors, or dimensions are implied. Does this suggest that only the geometric structure of space-time is involved in producing the basic findings in this paper for straight lines?

## *2. Curved Lines*

The above explanation of a resonance effect that creates or controls the straight lines does not apply to the vortices, curlicues, and Cornu spirals. The latter must be produced by a different effect because a similar resonance model based on 2 shorter sine waves with a half wavelength equal to 1/6 or 1/4 of the maximum separation distance would produce 4 or 6 negative areas, but these would equal the positive areas. This is illustrated in Figure 9.

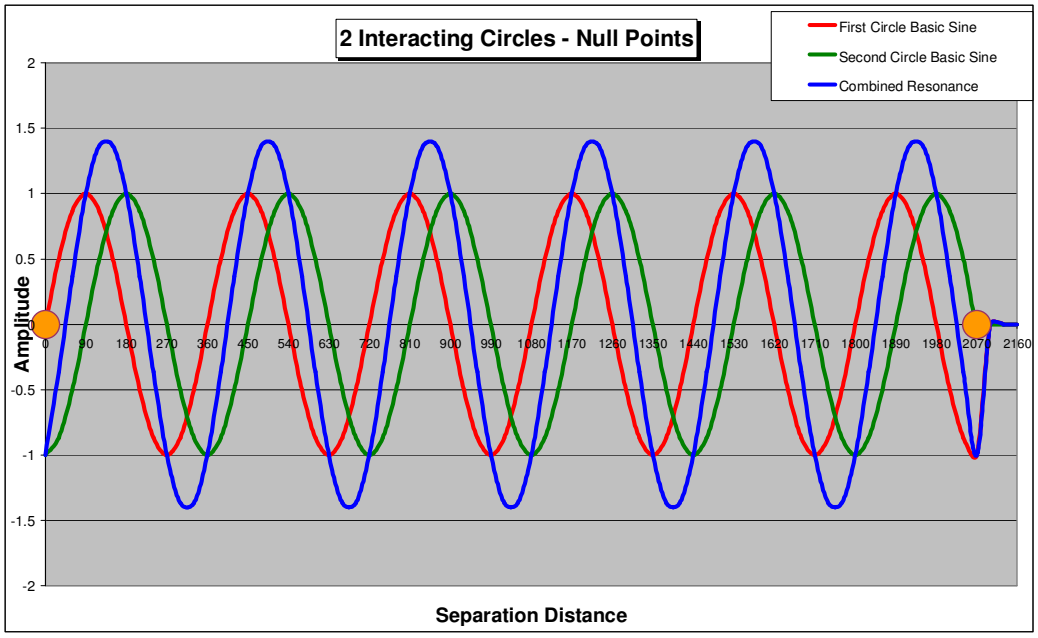


**Figure 9**. Illustrating that the above Model does not Apply to the Null Points

The findings show that this model is incorrect, for two reasons. There are no multiple resonance peaks, only one resonance peak is observed. As also observed, the null points are

sharp troughs that only extend over a few mms of separation, and comparable to the fine tuning of radio stations. The model in Figure 9 does not produce either of these effects.

It would therefore seem that the derived equations suggest that the linear parts of the dowsable pattern are determined by the geometric structure of space-time, whilst all the curved lines, which disappear at the null points, are produced by, as yet unknown, Earth-based forces such as spin, magnetism, and gravity.

## Conclusions and Summary

Without any equipment, the mind can readily detect 2-body interactions. An interaction between any two objects occurs if they are in close proximity. Provided their auras overlap, the interaction of any 2-bodies (such as 2 pure abstract geometry circles drawn on paper, or 2 physical objects) instantly generates a complex pattern. As *any* two bodies separate, independent observations have confirmed the creation of a consistent, repeatable pattern comprising subtle energy beams, vortices, Cornu spirals, null points, resonance effects, entanglement and bifurcations.

This complex pattern is affected dynamically during the separation process. Esoteric differences have been quantified and interesting comparisons made between identical abstract and solid geometries. The observed pattern created by 2 separating *abstract* bodies includes 6 null points and a total of 36 Cornu spirals, whilst 2 *physical solid* bodies of the same size only produce 4 null points and 28 Cornu spirals.

The subtle energy "laser beams" have a short variable length which is a function of the separation distance between the 2 objects and the size of their radii. These beams terminate in spirals.

This interaction can be explained if the maximum separation distance between two objects equals ½ the wavelength of the waves involved in the communication of information between them. If this condition is satisfied, a strong resonance effect is produced, with the maximum effect at half the maximum separation distance. The maximum separation distance between 2 objects of radius r is $S_{max} = 2.r^{\varphi}$.

The presence of phi ($\varphi$) in the above interaction equations suggests that these waves are part of the structure of space-time. As the communicating wavelengths are proportional to the size of the 2 interacting objects (raised to the power of a universal constant), the implication is that any 2 objects, be they abstract geometry or solid bodies, not only "know" where the other is but also are aware of their partner's radius/size. In other words, the "conscious" part of space-time i.e. the geometry of physical or abstract objects, determines the wavelength of these communicating waves. In addition, an element of "consciousness" is present to enable the 2 objects to interact if their auras are sufficiently close.

As also found elsewhere, the structure of the universe has the ability to treat abstract sources similarly to physical objects but physicality produces less information than abstract thought. This is a counter intuitive property of the cosmos that requires an explanation.

At least 16 different sets of bifurcations were discovered. These emanated from the terminating spirals associated with the straight lines and curlicues. Obtaining a bifurcation ratio of half of Feigenbaum's constant indicates a strong connection to standard chaos theory, and that the mind is tuned into the universal laws of physics. By increasing the pressure on one object, entanglement was demonstrated when observing the significant increase in the aura size of the other interacting object instantly. Four different types of subtle energy are involved in the 2-body pattern generated, with three different perceived colours, but the nature of these phenomena is currently unknown.

The consequences of these discoveries are far reaching. The findings support that chaos theory, bifurcations, and entanglement are not only built into the physical world, the laws of physics, and the structure of the universe, but are also equally built into the mind's perception and consciousness.

## Postulations

The findings detailed above strongly support the following postulations about the structure of space-time and the communication of information between any two bodies;

- The subtle energy beam is only observed when the observer's intent is looking at the 2 source objects. This demonstrates that consciousness is partly involved in abstract 2-body interaction. This is comparable to observations affecting experiments in quantum physics.
- Intent and the act of observation of the source geometry seem to determine the number of layers in an aura, or the number of Cornu Spirals in an interaction pattern.
- Does abstract thought require more information than physical objects?
- Could the null points be caused by the outer auras of each of the 2 interacting circles cancelling out the associated information?
- The geometric structure of the universe at the Planck level incorporates the reasons for the difference between abstract and solid objects.
- Geometry is an integral part of the structure of space-time.
- Any 2 objects, be they abstract geometry or solid bodies, not only "know" where the other is but also its radius/size so the 2 objects can interact if their auras are sufficiently close.
- Are torsion waves, via nodes and standing waves, the means of communication across space-time?
- This could explain the old conundrum of action at a distance.
- Our flat Euclidian universe extended down to the Planck level could be involved in alignments. These are new concepts, but are required for entanglement. It also implies that the structure of the universe can give the impression of a built in intelligence.
- This model could also explain entanglement via a similar "entanglement" subtle energy that enables 2-bodies to interact.
- Vortices are integral to the structure of the universe.
- The presence of bifurcation suggests that chaos and flow theory are involved.
- The components of the zero point field, the Higgs field, or their equivalence at the Planck level are postulated to behave in a chaotic manner.

Combining all the above with other general findings on dowsing geometry suggests that the total pattern produced by 2 objects (as illustrated in Figure 1) is a combination involving:

1. The geometric structure of space-time.
2. Consciousness and observation.
3. An interaction or entanglement subtle energy.
4. Chaos and bifurcation
5. Nodes and standing waves.
6. Resonance.
7. Local Gravity.
8. The earth's local vorticity.
9. The earth's local magnetic field.

At the null points the latter 3 factors seem to cancel out the effects of the first 5 factors.

## Discussion Points

As always, discoveries in research generate more questions than answers. How do these findings help to further our understanding of the mind, consciousness, and the laws of physics? What further questions require answering?

1. What is the mathematical transformation that enables 2 circles (whose simple equations are in the form $x^2 + y^2 = r^2$) when in close proximity, to produce a complex mathematically described pattern such as in Figure 1?
2. What causes geometrical patterns such as a circle to have an aura? Is this a manifestation of consciousness? What is the theoretical link between a geometrical shape and the size of its aura?
3. Why are abstract auras similar to those observed for solids?
4. It would seem that the observer needs to look at the source geometry to be able to perceive the intricate patterns. Does consciousness create the dowsable pattern, or is it there all the time, but intent is required to perceive it? However, if intent is present, but the dowser is not looking at the source objects the dowsable pattern is not always detected.
5. In the universe there must be almost an infinite number of two bodies. "Hoping" to find an interacting partner, each body must be radiating standing waves with wavelengths that are a function of their radius/size.
6. How else do all 2 bodies "know" where each other is, their radii and when within interaction range?
7. What is it about abstract geometry that produces standing waves and becoming a node in the process?
8. Why do 2 abstract circles produce 9 Cornu spirals whilst solids produce 7?
9. What is the mechanism that produces 6 null points for abstract geometry, but 4 for solids?
10. What do the null points tell us about the creation and destruction of Cornu spirals?
11. Why do the null points destroy all spirals, Cornu spirals, and curlicues?
12. Why do null points only extend over a few mms of separation of the two objects?
13. An extension to the resonances and nodes theory is required to explain the findings of null points.
14. There is only 1 optimum separation distance between 2 objects that produces a resonance peak. If this is 30cms as in the example in Figure 2, the half-wavelength that causes the resonance is also 30 cms. These are relatively large wavelengths and imply a macro cause, not a mechanism at the quantum level.
15. At bifurcation, we need to measure vertical vortex angles to see if the angles of the associated conical helices decrease in the series such as sine 1/3, 1/5, 1/7…….?
16. What causes, bifurcations, why do they always commence within a spiral, and what is the exact mechanism that links them with chaos theory?
17. What are the observed 3 colours and 4 energy types?
18. What is the connection between the null points and the perturbations in Figure 7?

This article is only a summary. Further details can be obtained on the author's website http://www.jeffreykeen.co.uk/

# Appendix 1

***Measurements and ratios for the Cornu spirals, and curlicues***

As is apparent from Table 3, (which, in this example, applies to 2 olive sized crystals in an east-west orientation) these Cornu spirals start at about 1.2 times the length of lines **ab** and **cd**, and extend to about 2.5 times the length of lines **ab** and **cd**. They therefore extend about 1.3 times the length of lines **ab** and **cd**.

**Table 3**. Outer Cornu Spirals Produced by 2 Physical Bodies

| Separation distance | | |
|---|---|---|
| Centre to centre | 3.00 | cms |
| Circumference to Circumference | 6.00 | mms |

| | metres | a x | |
|---|---|---|---|
| Length of line **a** | 3.80 | | Type 4 terminated with Type 3 spiral |
| Half Width of Curlicues | 2.70 | 0.71 | |
| Start of Curlicues from centre | 4.47 | 1.18 | 7x Type 3 arithmetically spaced |
| End of Curlicues from centre | 9.20 | 2.42 | |
| Length of Curlicues | 4.73 | 1.24 | |

| | metres | c x | |
|---|---|---|---|
| Length of line **c** | 2.00 | | Type 4 terminated with Type 3 spiral |
| Half Width of Curlicues | 2.00 | 1.00 | |
| Start of Curlicues from centre | 2.43 | 1.22 | 7x Type 3 arithmetically spaced |
| End of Curlicues from centre | 5.34 | 2.67 | |
| Length of Curlicues | 2.91 | 1.46 | |

# Appendix 2

***Measurement Definitions***

For quantitative work it is beneficial to define the separation distances between the 2-objects and the dowsable pattern. There are practical benefits for measuring the separation distance between the 2 objects from circumference to circumference. When the objects touch there is no interaction and no lines or curves are generated, so conceptually, the graph of the length of lines **a** & **b** passes through the origin. A more symmetrical curve can also be plotted. For irregular objects, surface to surface is not only easier to measure, but reflects the importance of the interaction between irregular geometry, and that points produce larger auras than flat surfaces. Similarly, measuring radii of auras from the circumference of their source is more accurate than locating the centre of the source. However, for the curved lines, measuring from the centres of the circles can be more practical

.

These conventions are incorporated in the text, and the following definitions are used.

| | |
|---|---|
| Diameter of circle | **D** |
| Radius of circle | **R** |
| Distance of core aura from circumference | $\mathbf{r_a}$ |
| Distance of core aura from centre of circle | $\mathbf{r_a+R}$ |
| Distance of outer aura from circumference | $\mathbf{r_o}$ |
| Distance of outer aura from centre of circle | $\mathbf{r_o+R}$ |
| Separation Distance | **S** |
| Optimum Separation Distance | $\mathbf{S_o}$ |
| Maximum Separation Distance | $\mathbf{S_{max}}$ |

| | |
|---|---|
| Length of lines **a** or **b** | **L** |
| Maximum Length of lines **a** or **b** | $\mathbf{L_{max}}$ |

# Appendix 3

***Measurements for the Null Points***
There are quantitative differences between abstract and physical source geometry as the two objects are separated.

*Abstract Objects such as Circles drawn on Paper*
As is apparent from Table 4, **6 null points** are produced which are spaced in a near geometric series, but with a superimposed slightly reducing geometric constant. As an illustration, for circles with a 2.3 mm diameter, the average geometric constant is 1.46, but with a 12% deviation.

Also for paper circles the 4 sets of Cornu spirals marked as **k** & **l** and **m** & **n** in Figure 1, each comprise **9** separate Cornu spirals (i.e. 36 in total), which are spaced nearly equally in an arithmetic series.

**Table 4.** Measurements for Null Points Produced by 2 x "Abstract" Circles Drawn on Paper

| **Basic Data** | | **cms** |
|---|---|---|
| Diameter of circle drawn round £1 coin | **D** | 2.3 |
| Radius of circle drawn round £1 coin | **R** | 1.15 |
| Distance of core aura from circumference | $\mathbf{r_a}$ | 1.50 |
| Distance of core aura from centre of circle | $\mathbf{r_a+R}$ | 2.65 |
| Distance of outer aura from circumference | $\mathbf{r_o}$ | 6.5 |
| Distance of outer aura from centre of circle | $\mathbf{r_o+R}$ | 7.65 |

| **Maximum Separation Distance between 2 objects** | | **cms** |
|---|---|---|
| Circumference to Circumference between 2 objects | $\mathbf{S_{max}}$ | 19.5 |
| Centre to centre between 2 objects | $\mathbf{S_{max}+D}$ | 21.80 |

| **Centre of Circle to the 4 Null Points** | | **cms** | **Geometric Series? $d_2/d_1$** |
|---|---|---|---|
| First Null Point | $\mathbf{d_1}$ | 3.0 | |
| Second Null Point | $\mathbf{d_2}$ | 5.1 | 1.68 |
| Third Null Point | $\mathbf{d_3}$ | 8.4 | 1.66 |
| Fourth Null Point | $\mathbf{d_4}$ | 12.2 | 1.45 |
| Fifth Null Point | $\mathbf{d_5}$ | 15.6 | 1.28 |
| Sixth Null Point | $\mathbf{d_6}$ | 18.8 | 1.21 |
| **Average Geometric Constant** | | | **1.46** |
| Deviation | | | **0.17** |
| % Deviation | | | 11.91% |

*Solid discs or physical objects*
As shown in Table 5, whilst separating 2 solid discs *or cut-out physical paper circles* having the same diameters as the above circles in Table 4, **4 null points** are produced, the distances between which are nearly in a geometric series. The average geometric constant is 1.89, but with a 6.5% deviation.

However, for solid objects the 4 sets of Cornu spirals marked as **k** & **l** and **m** & **n** in Figure 1, each comprise **7** separate Cornu spirals (i.e. 28 in total), which are spaced nearly equally in an arithmetic series.

As discussed for the 1-circle experiments, abstract circles produce 9 aura rings extending outwards from the core aura, but solid discs (both 3-dimensional and 2-dimensional) only produce 7 rings [Keen 2011 a]. Could the null points be caused by the interacting outer auras of each of the 2-circles with associated information being cancelled out?

Similarly, it seems counter-intuitive that abstract circles have 9 Cornu spirals, but solid circles (be they 2-dimensional paper cut-outs, or 3-dimensional discs) only have 7 Cornu spirals. The theory of dowsing involves information. Instinct suggests that a solid disc contains more information than an abstract circle drawn on paper, and, for example, a 3-dimensional metal disc has even more information than a 2-dimensional paper cut-out. However, having more information does not produce more rings!

**Table 5.** Measurements for Null Points Produced by 2 x £1 coins

| **Basic Data** | | **cms** |
|---|---|---|
| Diameter of £1 coin | **D** | 2.3 |
| Radius of £1 coin | **R** | 1.15 |
| Distance of core aura from circumference | $\mathbf{r_a}$ | 1.556 |
| Distance of core aura from centre | $\mathbf{r_a+R}$ | 2.706 |
| Distance of outer aura from circumference | $\mathbf{r_o}$ | 4.5 |
| Distance of outer aura from centre of circle | $\mathbf{r_o+R}$ | 5.65 |

| **Maximum Separation Distance between 2 objects** | | **cms** |
|---|---|---|
| Circumference to Circumference between 2 objects | $\mathbf{S_{max}}$ | 19.7 |
| Centre to centre between 2 objects | $\mathbf{S_{max}+D}$ | 22.00 |

| **Centre of Circle to the 4 Null Points** | | **cms** | **Geometric Series? $d_2/d_1$** |
|---|---|---|---|
| First Null Point | $\mathbf{d_1}$ | 18.90 | |
| Second Null Point | $\mathbf{d_2}$ | 10.40 | 1.82 |
| Third Null Point | $\mathbf{d_3}$ | 5.00 | 2.08 |
| Fourth Null Point | $\mathbf{d_4}$ | 2.80 | 1.79 |
| **Average Geometric Constant** | | | **1.89** |
| Deviation | | | **0.12** |
| % Deviation | | | 6.53% |

# Appendix 4

***The Protocol and Quantitative Results for Entanglement Experiments***

Table 6 illustrates the quantitative findings for the study of entanglement in a two body interaction. The same results are obtained if 2 £1 coins are used, or if equal size circles are drawn on paper around a £1 coin (which is then removed). Measurements were taken from the circumference of the circles as they are more accurate than locating centres of the objects.

**Table 6.** Parameters and Data findings for a specific 2-body entanglement

| **Basic Data** | | **mms** |
|---|---|---|
| Diameter of £1 coin | **D** | 23 |
| Radius of £1 coin | **R** | 11.5 |
| Distance of core aura from circumference | $\mathbf{r_a}$ | 8.3 |
| Distance of core aura from centre of circle | $\mathbf{r_a+R}$ | 19.8 |

| **Separation Distance between the centres of the 2 circles** | **S** | **62** |
|---|---|---|

| | Core Aura of One Isolated Coin | Core Aura when 2 Coins are Interacting | Core Aura when 2.9 gms Placed on one Interacting Coin |
|---|---|---|---|
| | mms | mms | mms |
| | 9.0 | 11.5 | 25.0 |
| | 8.0 | 17.5 | 26.0 |
| | 7.0 | 17.5 | 27.0 |
| | 8.0 | 17.0 | 27.0 |
| | 8.0 | 18.0 | 24.0 |
| | 9.0 | 17.5 | 23.0 |
| | 9.0 | 17.0 | 22.5 |
| | 9.0 | 16.0 | 27.5 |
| | 8.0 | 16.0 | 23.0 |
| **Average** | **8.3** | **16.4** | **25.0** |
| Deviation | 0.59 | 1.30 | 1.67 |
| % Deviation | 7.11% | 7.88% | 6.67% |

# Appendix 5

***Illustrating Resonance by 2 sine waves***

Formula (i) $\boldsymbol{\lambda = 2 \,.\, S_{max}}$ is illustrated in Figure 10. The separation distance between 2 objects is represented as degrees on the x-axis. The beam line length is represented as amplitude on the y-axis. The maximum separation distance is measured as 360°. It is postulated that each circle emits a wave with a wavelength $\boldsymbol{\lambda = 2 \,.\, S_{max}}$. The green wave is emitted by the right hand object, whilst the red wave is from the left hand object. The blue curve is the combined resonance wave. In this example, the 2 circles are 150° apart. At a separation of 180° the maximum beam length is obtained and coincides with maximum resonance.

The implication of this model is that both circles act as nodes and the structure of space time, together with consciousness, enables the 2 circles to "know" where the other is together with details of its radius. These concepts are compatible with other findings in mind science experiments: e.g. [Keen 2012 a]. Provided the 2 circles are closer than the maximum separation distance they each emit a subtle energy standing wave whose wavelength equals their maximum separation distance.

***Resonance Peak in Figure 7***

As the 2 circles are separated, a resonance effect changes the length of the central axis lines **ab**. This is shown graphically in Figure 7 where the maximum length, $\mathbf{L_{max}}$ of each line **a** & **b** was 2.068 metres, when the 2 circles (of radii 3.85 mms) were at an optimum critical separation distance, $\mathbf{S_o}$, of 3 cms apart. The lines **a** & **b** disappeared when the separation of the 2 circles, $\mathbf{S_{max}}$ , was equal to or greater than 6 cms. This is an example of a 2:1 ratio, which is frequently found in mind science research.

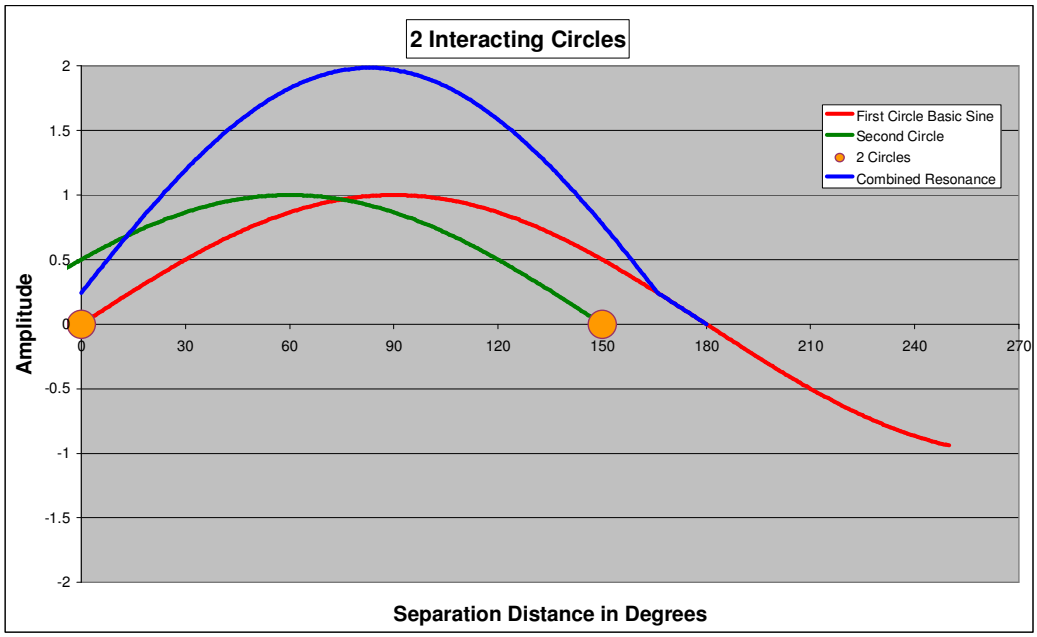


**Figure 10**. An Illustration of Simple Resonance

## References to the Author's Published Research


Keen J.S. [December 2002] *Two Body Interaction Part 1*, Vol. 39 No 278 Dowsing Today

Keen J.S. [March 2003] *Two Body Interaction Part 2*, Vol.40 No 279 Dowsing Today

Keen J.S. [2005] *Consciousness, Intent, and the Structure of the Universe*, Trafford, 1-4120-4512-6, http://www.trafford.com/robots/04-2320.html

Keen J.S. [Spring 2009 a] *From Banks and Ditches to Dowsing 2-dimensional Geometry*, Network Review No 99

Keen J.S. [November 2009 c] *Hindu and Buddhist Temples - Creating Peace and Tranquillity*, Vol. 42 No. 305, Dowsing Today - The Journal of the British Society of Dowsers

Keen J.S. [28 November 2009 d] *The Causes of Variations When Making Dowsable Measurements; Part 1 - Introduction and Personal Factors*, e-paper online at http://vixra.org/abs/0911.0062 http://vixra.org/abs/0912.0049

Keen J.S. [7 January 2010 a] *The Causes of Variations When Making Dowsable Measurements; Part 4- The Effects of Geometric Alignments and Subtle Energies,* e-paper online at http://vixra.org/abs/1001.0004

Keen J.S. [October 2010 c] *Is Dowsing a Useful Tool for Serious Scientific Research?* Vol. 66 No 8, World Futures: Taylor & Francis - The Journal of General Evolution

Keen J.S. [28 February 2011 a] *The Auras of Abstract Geometry, their Interaction with Space-time, and their Effects on the Mind's Perception*; e-paper online at http://vixra.org/abs/1102.0055

Keen J.S. [2011 b] The Mind, Intergalactic Space, and Phi (φ). NeuroQuantology; 9 (4): 649-659.

Keen J.S. [21 July 2011 c] Dowsing Geometry and the Structure of the Universe- v2 - A Database of Patterns Analogous to X-ray Crystallography; e-paper online at http://vixra.org/abs/0909.0008

Keen J.S. [2012 a] The Mind, the Macro Properties of Psi-lines, and the Structure of the Universe. NeuroQuantology; 10(3): 403-415.

Keen J.S. [2012 b] *Psi-Lines, Chaos, Spirals, Magnetism, and Entanglement*. NeuroQuantology 10(3): 416-427.

## Further Reading


Bird, Christopher : *The Divining Hand,* Shiffer Publishing, 1993.
Bekenstein, Jacob : *Information in the Holographic Universe,* Scientific American, 2003
Bohm, David : *The Undivided Universe,* Routledge, 2005, 041512185X
Bohm, David : *Wholeness and the Implicate Order,* Routledge,1980
Curran, Jude : *The Wave,* O-Books; 2005, 1-905047-33-9
Dyer, Dr Wayne : *The Power of Intention,* Hay House 2004
Edwards, Lawrence : *The Vortex of Life,* Floris, 1993, 0-86315-148-5
Greene, Brian : *The Fabric of the Cosmos,* Allen Lane, 2004
Hansard, Christopher : *The Tibetan Art of Positive Thinking,* Hodder, 2003
Hawking, Stephen : *The Universe in a Nutshell,* Bantam Press, 2001
Keen, Jeffrey : *The Causes of Variations When Making Dowsable Measurements; Part 1 - Introduction and Personal Factors*, 28 November 2009, e-paper online at http://vixra.org/abs/0911.0062
Keen, Jeffrey : *The Causes of Variations When Making Dowsable Measurements; Part- 4 The Effects of Geometric Alignments and Subtle Energies*, 7 January 2010, e-paper online at http://vixra.org/abs/1001.0004
Keen, Jeffrey : *A Model of Consciousness*, April 2009, Vol. 65 No 4 World Futures – The Journal of General Evolution, Taylor & Francis.
Laszlo, Ervin : *The Connectivity Hypothesis*, SUNY Press, 2003
Laszlo, Ervin : *Science and the Akashic Field*, Inner Traditions; 2004; 1-59477-042-5
Lyons, James : *Quantifying Effects In Consciousness*, University of Hull 1998
McTaggart, Lynne : *The Field,* Harper Collins, 2001
Merrick, Richard : *Interference (A Grand Scientific Musical Theory)*, 2009, 978-0-615-20599-1
Mitchell, Edgar : *Nature's Mind: the Quantum Hologram*, http:www.edmitchellapollo14.com
Muller, Hartmut: *Global Scaling,* http://globalscalingtheory.com/ .
Penrose, Roger : *Shadows of the Mind*, Oxford University Press, 1994
Penrose, Roger : *The Emperor's New Mind*, Oxford University Press, 1999
Pribram, Karl : *Consciousness Reassessed,* Mind and Matter, 2004
Radin, Dean : *Conscious Universe,* Harper, 1997, 0062515025
Radin, Dean : *Entangled Minds*, Paraview, 2006, 1-4165-1677-8.
Rosenblum, Bruce & Kuttner, Fred : *Quantum Enigma*, OUP/Duckworth, 2007, 978 07156 36541.
Sheldrake, Rupert : *Morphic Resonances*, Inner Traditions, 2000
Sheldrake, Rupert : *The Sense of being Stared At*, Arrow, 2004
Smolin, Lee : *The Trouble with Physics*, Allen Lane, 2006, 978-0-713-99799-6
Stewart, Malcolm : *Patterns of Eternity*, Floris Books, 2009
Talbot, Michael : *The Holographic Universe*, Harper, 1996, 0586091718
Tiller, William : *Subtle Energies, Intentionality and Consciousness*, Pavior 1997, 0964263742.
Tiller, William : *Conscious Acts of Creation*, Pavoir, 2001, 019293310531
Verlinde, Erik P: *On the Origin of Gravity and the Laws of Newton***,** 6 Jan 2010, http://arxiv.org/abs/1001.0785.
Wallace, Alan : *Hidden Dimensions (The Unification of Physics and Consciousness)*, Columbia University Press, 2007.