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IS SOUND BEHIND THE CROP CIRCLES?

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Abstract

To date, some 10,000 crop circles have been catalogued, in twenty nine countries worldwide, and their anomalous features continue to defy human replication: plants bent an inch above soil; their cellular structure altered; stems lightly burned around the base; alterations to the crystalline structure of the affected soil; the evaporation of ground water, alteration of the local electromagnetic field, and dowsable, long-lasting energy patterns, not to mention hundreds of measured effects on the human biological field. Sounds have been identified at the sites of some of the circles during their formation, suggesting that sound is one of the likely causal or organizing factors in their creation. This article presents evidence and theories in support of this hypothesis.

Key Words: Crop Circles; sound as formative force

Introduction

During the twilight days of 1998, small articles tucked away in the nether regions of the British press quietly announced 'Unknown Force Was Behind Corn Circles, Claims Hoaxer'. This dramatic U-turn by the surviving member of the infamous Doug & Dave duo — the English sexagenarians who since 1991 have misled the world with tales of their crop flattening prowess with planks of wood — illustrates that the hand of man materialized in crop circle lore long after the real phenomenon manifested.

Although hoaxers claim to have orchestrated the phenomenon in 1978, unpublished evidence at the time showed approximately 200 sporadic reports of crop circles around the world throughout the 1900s, with dozens of eyewitnesses reporting crop circles forming in a matter of seconds as far back as 1890; several highly descriptive accounts were even documented in 1678 by Robert Plot, then curator of the Ashmolean Library in Oxford, England. If hoaxers are responsible for crop circles, then they appear to have mastered the art of time travel, in which case it is they who ought to be under scientific scrutiny.

To date, some 10,000 crop circles have been catalogued, in twenty nine countries worldwide, and their anomalous features continue to defy human replication: plants bent an inch above soil; their cellular structure altered; stems lightly burned around the base; alterations to the crystalline structure of the affected soil; the evaporation of ground water, alteration of the local electro-magnetic field, and dowsable, long-lasting energy patterns, not to mention hundreds of measured effects on the human biological field (Silva, 2002).

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So much, then, for two guys and a piece of wood. But thanks to a virtual embargo on the coverage of research throughout the media, a popular myth has developed that all crop circles have been nothing more than a prank with a plank. By definition, a hoax is a forgery, and a forger requires an original from which to copy.

So what is this 'unknown force' that creates genuine crop circles? One answer may lie with sound.

Sound as a formative force in crop circle formations

Traditionally, sound is considered a prime Universal force in the creation of matter. This concept is echoed in all faiths and traditions: "In the beginning was the Word, and the Word was with God," as in the Bible, the Q'ran, and the Rig Veda. In a similar way, Hopi and Navajo religious traditions assert that, in ancient times, shamans could utter words onto sand and create patterns, a concept not dissimilar to the Hindu mandalas – those geometric paintings held to be expressions of vibrations from the unseen Universe. Consequently, the Eastern faiths — Islam in particular — chose this sacred geometry to express the image of God. In the twelfth century, these geometric principles were encoded in the design of Gothic cathedrals, and the applications of sacred geometric proportions are now known to enhance the sonic effects in buildings.

Geometry, sound, resonance and vibration are fundamental to our world, which many consider to be solely a physical state of existence. When the primeval Hindu sound, the OM (from which is derived our modern term 'hum') is sung into a tonoscope – a device for converting the human voice into visible form – it is possible to see geometric shapes that some religious traditions associate with 'sacredness.' Under the microscope, even atoms are seen as harmonic resonators, and their structures are composed of geometric rhythms whose proportions are similar to the mathematical intervals governing the notes of the music scale. For example, the gap between the notes C and G – a musical fifth – can be represented geometrically as a pentagram, which was used symbolically in ancient Greece and Babylonia.

Physical reality, it seems, is governed by geometric arrays related to sound frequencies. As the expression of number in space, geometry is inextricably linked to sound, since the laws of geometry govern the mathematical intervals that make up the notes in the western music scale, also known as diatonic ratios.

One of the mathematical minds studying crop circles was the late Prof. Gerald Hawkins. In February 1992 he published an interesting challenge to the half million subscribers of Science

Figure 1. This equilateral version of Hawkins' fifth crop circle theorem was found in the crop glyph's embedded geometry. The theorem had neither been published nor revealed to the public



Litchfield, UK 1995. Credit: Freddy Silva

News. Prof. Hawkins had studied the work of Euclid, a Greek mathematician of the 3rd Century BC, whose treatises form much of the basis of our mathematical knowledge today. He used the principles of Euclid to prove that four geometric theorems can be derived from the relationships of design elements in crop circles. More significantly, he discovered a previously unknown fifth theorem from which he could derive the other four, an item that Euclid had not noted.

Despite an open challenge to Science News' high IQ readership, no one was able to create this fifth theorem. Needless to say, it came as a slight shock when it materialized as a 160,000 sq. ft. crop circle at Litchfield, England, in 1995 (see Fig. 2). Incredibly, the theorem did not appear overtly, and just like the challenge laid by Hawkins, the Circlemakers require it to be decoded from within their own design.

By their nature, the crop circle theorems produce diatonic ratios (the whole number intervals that determine the 'space' between each musical note), so a link now exists between crop circles and musical notes, which are the by-product of sound frequencies. By 1995 crop circles bearing unmistakable physical associations with sound began to appear. One contained a curious ratchet feature from which is extracted a musical diagram dating to the ancient Egyptian Mystery schools, the Lambdoma. Also known as the Pythagorean Table, it defines the exact relationships between musical harmonics and mathematical ratios (see Fig. 2).

Figure 2. Crop glyph containing unusual ratchet subdivided into the eight parts of the octave. From this is extracted the Pythagorean Lambdoma (right), a diagram containing all the harmonics of the musical scale.



Figure 3. Cymatic crop circle. Plants are bent six inches from the top.

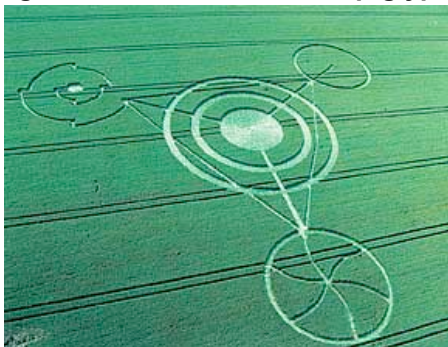


Goodworth Clatford, UK 1994.
Credit: Freddy Silva

But it was a convincing crop circle etched in barley at Goodworth Clatford, England, in 1996 — which had its plants bent six inches from the top — that gave the proverbial nod to sound, for here was a representation of a cymatic pattern. Cymatics is the study of sound waves and their interaction with physical substances. One of its modern pupils was Swiss scientist Hans Jenny (1974) who, throughout the 1950's and 60's, painstakingly captured on film the effects of sound as it interacted with powders and liquids on membranes that vibrate to specific frequencies and amplitudes. Such experiments have been furthered by the sound engineer John Reid, as

well as Alexander Lauterwasser, and today sound can be seen creating harmonic shapes as it travels through liquids. Jenny observed how sound vibration created geometric shapes: a low frequency produced a simple circle encompassed by rings, whereas a higher frequency increased the number of concentric rings around a central circle. As the frequencies rose, so, too, did the complexity of shapes, to the point where tetrahedrons, mandalas and other sacred geometric forms could be discerned.

Figure 3a. 'Tetrahedron' crop glyph.



Barbury Castle, UK 1991
Photo credit: Richard Wintle /CALYX

Just as the Egyptians had once described geometry as 'frozen music', so Jenny now enabled humanity to see it. Jenny also provided a physical connection to the creation of crop circles I'd been looking for, since many of the vibrational patterns captured in his photos mimic crop circle designs: from the simple circle surrounded by concentric rings, typical of early 1980s crop circle designs, to the tetrahedron and the complex star fractals of the 1990's (see photo). Visually, then, the connection is undeniable. But what other evidence links sound and crop circles at a physical level?

Figure 3b. Sound frequency captured in liquid, resembling the Barbury crop glyph.



Cymatic image taken from: Cymatics:
A Study of Wave Phenomena & Vibration,
(Combined Vols. I & II) by Dr. Hans Jenny.
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Many accounts exist of a trilling sound heard by the eighty reported witnesses to crop circles forming (Silva, 2002). This unusual noise, which sounds like a cross between a cicada and a waterfall, was eventually captured on magnetic tape in 1989 during a night watch of a field at Cheesefoot Head, England, by a group of researchers. It was duly sent to NASA's Jet Propulsion Laboratory in Pasadena, where it was brought to the attention of Robert Weiss, the man who had previously analyzed the famous Watergate Tapes. He concluded that the noise was not related to any type of bird or insect, and due to its looping, rhythmic nature appeared to be of intelligent, mechanical origin. Further, it contained a frequency of 5.0 to 5.2 kHz.

Later that summer, the trilling sound was captured again, this time by a BBC cameraman whilst recording an interview inside a crop circle. A few seconds after it's appearance, it rendered his \$55,000 camera inoperable. According to the technicians who later rebuilt the equipment, the sound frequency had interfered with the circuitry to such a degree that the camera would not work.

Interestingly, latter-day Australian Aborigines relate to this trilling sound. During their ceremonies to contact their 'sky spirits,' a specially-shaped piece of wood called 'bora' is attached to the end of a long string and whirled, creating a noise practically identical to the crop circle sound. It was later discovered that not only have crop circles appeared in Australia, they also manifest

throughout Aboriginal myths, just as geometries found in crop circles appear in ancient Aboriginal rock paintings.

But back to that 5 kHz connection. This has taken me on a journey of extraordinary connections, particularly relating to the way in which sound interacts with plants and soil. Back in the 1950's, American agricultural researcher George Smith found that exposing corn to sound frequencies produced a higher heat content in soil, as well as a slight burnt appearance in the plants (Silva, 2002); Tompkins and Bird, 1973). Such effects are consistent with the soil of crop circles, where the affected area appears noticeably drier – in some cases baked – than the rest of the field, despite overnight rain. The same phenomenon is observed as a 'slight burning' at the base of crop circle stalks.

Oddly enough, Smith speculated at the time that particular sound frequencies also increased molecular activity in plants. Three decades later, such activity was indeed discovered in plant samples taken from crop circles: tests performed since 1989 by Michigan-based physicist Dr. W. Levenson consistently show how the energy creating crop circles affects seed embryo and plant growth, elongates the plants' nodes, even alters the pattern of their crystalline structure (Silva, 2002). (See Figs. 4a, 4b.)



Crystalline structure of wheat
Figure 4a. normal (top)
Figure 4b. crop circle (bottom)



Credits: Ken and Rosemary Spelman/
 Signalasys

The sudden and abnormal growth in plants affected by the energy of crop circles was attributed by Levenson to microwaves. However, microwaves have the ability to render biological systems sterile, and an overdose will even kill organisms. Crop circles plants, on the other hand, are certainly alive and well, so there must be another answer.

Already conversant with discoveries by Russian scientists that certain sound frequencies noticeably affected the growth of plants and seeds, Mary Measures and Pearl Weinberger experimented with sound at the University of Ottawa throughout the 1960's. They succeeded in accelerating growth in wheat, but the sound also produced a resonant effect in the plants' cells, thereby affecting their metabolism. And the frequency applied was identical to the crop circle trilling noise – 5 kHz (Silva, 2002).

Perhaps the greatest connection linking sound to the manifestation of crop circles lies in their greatest anomaly: the permanent bending of the plants' stems. In 1968 laboratory experiments at Temple Buell College, Colorado, measured the effects of music on plants by subjecting them to different tones. Exposure to heavy metal music made the plants tilt away from the source of the music or die, whereas classical music led the plants to lean toward the speakers. But in the case of Hindu devotional music — the type played by the sitar player Ravi Shankar — the stems bent in excess of 60° to the vertical, perhaps the closest any human has ever come to recreating that right angle bend common to plants in genuine crop circles.

Interestingly, applications of Indian devotional song to plants during the 1930's at Annamalai University, India, also showed a number of similar biophysical changes to those which occur in plants collected from crop circles and analyzed by Dr. Levenson (Silva, 2002)..

In the light of these observations, sound as one possible energy source capable of creating crop circles appears very feasible. But what type of sound coaxes plants to bend and lie down, in intricate and complex patterns, with a fine degree of precision?

Ultrasound is an interesting candidate in this regard, perhaps capable of interacting in crop circles with the plants to produce these effects. It can be aimed like a laser beam, and specific frequencies can be focused to cause certain kinds of molecules to vibrate while others nearby are left unmoved. The higher the frequency of ultrasound, the greater its ability to be directed. This requires frequencies in the high MHz range, such as those detected for over the past decade inside crop circles. The readings generally hover in the vicinity of 260-320 MHz. However, the frequencies inside the circles appear to increase each year, in parallel with the increase in their geometric complexity. This mirrors Jenny's experiments, which show that a relationship exists between the complexity of cymatic geometries in proportion to the applied sound frequencies. In other words, the higher the frequency, the greater the geometric intricacy.

Such extremely high frequencies are known to affect states of awareness and consciousness in humans, and visitors to crop formations often report these experiences. Such effects are traditionally associated with sacred spaces – stone circles in particular – and it is interesting to note that ultrasound has been detected at stone circles and standing stones in England (Silva, 2002)

When tuned in the MHz range, ultrasound works sympathetically on biological systems and is capable of inducing molecular growth, so its healing properties are today used in the treatment of muscular ailments. Again, this mirrors the folklore of sacred spaces, and as far as crop circles are concerned, hundreds of people have also reported healings: one long-time sufferer of Parkinson's stopped shaking; a man with a 99% malignant retinal eye tumor had the tumor shrivel away after contact with crop circles. This case is clinically documented in New Hampshire, and the patient's doctor remains at odds to explain this (Silva, 2002).

Figure 5. Blown node, showing hole created by superheated water leaving the stem.



Credit: Freddy Silva

Below 20 Hz sound becomes infrasound to humans, and such low frequencies influence biological processes in that they can tear molecules apart. And here lies the direct connection to crop circles: Experiments throughout the 1980's at Princeton's P.E.A.R. laboratory demonstrate that, when combined with high-pressure, the acoustic power of infrasound boils water inside a cavity in one nanosecond (Silva, 2002). As water heats, it expands, and in the case of crop circles plants and their water-filled stems, a close look reveals tiny holes in their nodes (the plant's 'knuckles'), suggesting that superheated water may have blown outwards.

This was proved by aiming infrasound at a water-filled container at the Princeton Engineering Laboratory (P.E.A.R.), and then replicated in a lab in Michigan. The base of the stems are made pliable like molten glass by the heat, leaving the now top-heavy plants to collapse and re-harden into their new horizontal position. As for the designs into which the plants are shaped, these are caused by the interaction of audible and ultrasonic frequencies upon the receiving material, just as demonstrated in cymatic experiments, the Earth itself possibly acting as the membrane.

Figure 6. Stem from crop circle showing charring effect caused by short, intense burst of heat, as generated by infrasound.



Credit: Freddy Silva

Since this action (called 'vapor cavitation') creates local temperature increases of hundreds of thousands of degrees for a fraction of a second, it is now not difficult to see how millions of gallons of groundwater could disappear within and around the perimeter of a crop circle, or how the plants could attain their slightly burnt appearance. Combine this with Levengood's discovery

of microscopic blow-holes in the plants' cell wall pits, shows the rapid boiling of water inside the plant, and everything starts to fall into place.

Infrasound is also capable of atomizing water molecules, creating a fine mist, and farmers in England and Canada have witnessed columns of mist rising from within newly-arrived crop circles.

Finally, the lower the operating frequency of infrasound, the greater the effect, and 18 Hz is the lowest safety threshold below which the pressure formed by infrasound is known to produce disruption to chromosomes. Every summer, crop circle plants of every variety are sent to Dr. Levengood for testing, and some samples inevitably show unmistakable disruption to their chromosomes. Yet give him samples from man-made designs and he finds something remarkable — perfectly normal plants!

Theories to explain the sounds

So, who is in control of this 'technology' that is manifesting these euphonious crop circles? In England, one highly respected psychic individual inadvertently channeled information about the origin of crop circles during a trance session. Her name is Isabelle Kingston.

Psychic ability is, undoubtedly, the hardest practice for which to advocate because of the social barriers placed in front of the quest for its understanding, the biggest of all being ridicule. Yet since the earlier part of the 20th Century, parapsychologists in the West, and in the 1950s in the Soviet Union (Ostrander and Schroeder, 1973) have systematically established the sixth sense as a valid means of communication, beyond any reasonable doubt. In the Western research literature, the odds against the results having been produced by chance are in the range of one in a million to one in several billion, depending on the aspects of psychic abilities studied. This also includes evidence for psychokinesis, 'mind over matter,' in which measurable physical effects of mental intent are demonstrated (Radin, 1997; 2006).

What gives eastern scientists the edge is their deep-rooted understanding that nature is composed of both the seen and the unseen, and that many of its phenomena - like ultrasound, infrasound and the greater portion of the light spectrum - lie beyond our five limited senses of perception. For instance, In Bulgaria, psychic abilities have proved so useful that they have been applied throughout education and medicine. In the West, despite lack of public acknowledgement, the employment of psychics is becoming more commonplace than one might think. Psychics are today employed in successfully locating geological faults, in crime solving, even in predicting earthquakes; the military has admitted working with psychics, both in remote viewing, and remote influencing of policymakers, so something in these realms obviously work.

The information channeled by Isabelle Kingston in 1982 came from The Watchers, a Universal group consciousness who appear throughout history, serving as helpful guides to humanity during its times of tumultuous change. As the Shining Ones or Els, they feature throughout ancient Egypt texts; they also facilitated the building of Europe's tallest mound, Silbury Hill 'Sil-bury' literally means 'the hill of the shining beings.' The problem with the information received by Isabelle was that, at the time, few knew what a 'crop circle' was, so when The Watchers said they would provide signs of their purpose in the fields within seven days, at Silbury Hill, no one in Isabelle's group knew what to expect. Seven days later a group of five crop circles arranged like a Celtic cross manifested at the base of the 5,000-year old sacred site.

In succeeding years, Isabelle would be provided with further instructions ahead of time as to the circles' location and physical attributes. Their appearance was often closely followed by military helicopters, who seem to be able to pick up their electro-magnetic fingerprint on radar. We have

proof of this from field observation by myself and other researchers; contacts within the military who wish to remain confidential; and farmers who see the helicopters hovering above their fields at 4.30 am, minutes after the circles have appeared.

The main purpose behind the glyphs, we are told The Watchers, is to feed information into the planet's subtle energy grid, thus providing human beings with the tools that will help them wake up to their responsibilities as co-creators, and achieve their greater potential.

To some, the message may seem somewhat simplistic, even utopian, yet there is no doubt that are living in times of great upheaval, and whatever choices we are making as a collective will affect generations to come. What is already certain from decades of personal and collected observation is that the tens of thousands of people who have come into contact with crop circles have taken with them a more positive world-view, and this change in perception is quietly seeping into the everyday world.

The Watchers spoke of technology yet to be deciphered from the glyphs (spinning disk and anti-gravity devices based on the designs are being developed David Myers and David Percy as I write); and of how the patterns are connected to all ancient sacred sites via subtle energies. It has since been discovered that all genuine crop circles indeed lie at the crossroads of invisible electro-magnetic pathways which criss-cross the entire globe, linking all sacred sites (Silva, 2002)..

The Watchers also spoke of the designs being essentially created through thought processes sent from other levels of awareness. These vibrations transform into sound and light as their frequencies are slowed down by our atmosphere and the laws of the physical world. Indications of these processes would eventually be discovered in the plants and the soil by people with whom communications would be established on a subtle level of exchange.

The musical scale, constructed on the harmonics of sacred geometry, and now found within the framework of crop circles, represents the mathematical structure of the soul of the world because it embodies the essence of the Universe. So it's no coincidence that a large percentage of crop circles can be identified with, and by, ancient cultures, who to this day honor their histories through song and music, their healing rituals performed with sound. This relationship is applied in Buddhist mandalas, whose elaborate geometries are used to alter states of consciousness. Perhaps it is not by coincidence that crop circle designs mirror these intricate patterns, just as they bear an uncanny familiarity to Jenny's materializations of sound.

If sound vibrations are creating crop circles, is it not possible that they can arouse the individual at a spiritual level, in the same manner that music does? It is interesting to note that sound vibrations are associated with the creation of crop circles, and also can arouse the individual at a spiritual level. Many spiritual aspects of human experiences are celebrated and carried from generation to generation through music. It may be that for this reason the shape of the inner human ear (the cochlea) is a spiral constructed according to the harmonic laws of tone (Tomatis, 1991), just as the same spiral is the primary form from which thousands of crop circles have sprung.

Music is a carrier for social change. For instance, the effects of Handel's music is believed to have reversed the state of moral degradation in Victorian England, just as the anarchic overtones of Punk united disillusioned youth into fighting an establishment that held no tolerance for those who stepped outside its rules. The effects in peoples' awareness after contact with crop circles is similarly documented: in 1990, tens of thousands of people from all around the world descended upon a tiny village in southern England after the appearance of the first major pictogram, Alton Barnes. Hundreds reported an 'awakening' or "being transformed," as if coming into contact with a modern-day Lourdes. Perhaps the effect was due to the ultrasonic

frequencies, which are known to ally with the brain's frequencies and induce psychological effects; of maybe it was the suggestive power of the tridents in the crop glyph? This symbol of Neptune and Shiva, figures traditionally associated with transformation, is also represented in Aramaic, Judaic, Arabic and Phoenician alphabets as the letters *ayin* and *shin*, letters that traditionally reference God. Thus, like a master hypnotist's hand, images of crop circles today continue to enlighten the awareness of those who come into contact with them.



Figure 7. The 606-ft pictogram at Alton Barnes that galvanized tens of thousands of people from around the world, many of whom experienced a 'transformation'. This is possibly due to the trident designs, the symbol of Shiva and Neptune who are traditionally associated with spiritual transformation. The trident is also referenced in the Aramaic, Judaic and Arabic alphabets as the letters *ayin* and *sin*, references to 'God'. Interestingly, the phrase *el ayin* form the origin of our word 'alien'.

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In summary

If sound is one of the formative principles behind crop circles, it is not surprising that they are leaving psychological impressions on those whose antenna are extended and receptive to their tune. Clearly, there must be an organizing intelligence that guides the sound, and other factors, such as electromagnetic components contributing to crop circle formations, but these are beyond the scope of the discussion in this article.

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Freddy Silva has researched crop circles, sacred spaces and consciousness from a multi-disciplinary point of view since 1990, and is today one of the world's leading experts, as well as a bestselling author and international lecturer. His comprehensive book *Secrets In The Fields: The Science And Mysticism of Crop Circles*, as well as his documentary *Stairways To Heaven: The Practical Magic Of Sacred Space* are available from the author's web site at www.cropcirclesecrets.org
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