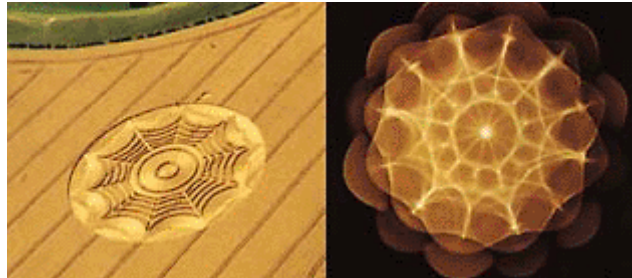


IS SOUND CREATING CROP CIRCLES?



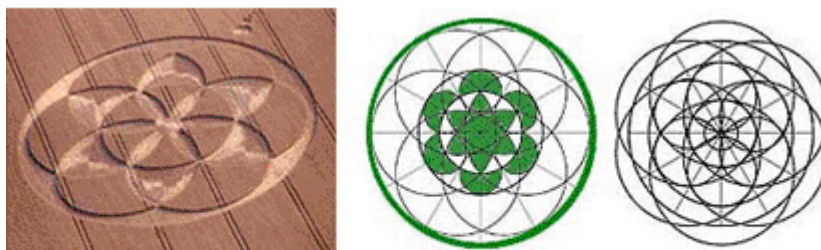
Extracts from [Secrets in the Fields](#) © Freddy Silva, 1997, 2002.

Images © Freddy Silva, Lucy Pringle, Colin Andrews. Cymatics images from *Cymatics: A Study of Wave Phenomena and Vibration* by [Hans Jenny](#). © 2001 Macromedia, and courtesy of Jeff Volk.

During the twilight days of December 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- 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.

Latterday hoaxers claim that they applied boot to wheat in 1978, yet crop circles have appeared throughout the world since the early 1900s, with dozens of eyewitnesses even reporting crop circles forming in a matter of seconds as far back as 1890; several descriptive accounts were even documented in 1678 by Robert Plot, then curator of the Ashmolean. If hoaxers are responsible, then, they appear to have mastered the art of time travel, in which case it is they who should be under scientific scrutiny.

To date some 10,000 crop circles have been catalogued worldwide, and their anomalous features continue to be irreplicable: plants bent an inch above soil and gently laid down in geometrically-precise patterns with no physical signs of damage, light burn marks at the base of stems, altered cellular structure and soil chemistry, discrepancies in background radiation, alteration of the local electromagnetic field, depletion of the local watershed, and dowsable, long-lasting energy patterns, not to mention measured effects on the human biological field. So much, then, for two guys and a piece of wood. But thanks to a virtual embargo on research coverage throughout the media, a popular myth has developed that all crop circles have been nothing more than a prank with a plank.



Crop glyphs at Froxfield (left) and Harwell (middle, in green). Such depictions of Hindu mandalas and sacred geometry are also wave patterns of sound which underlie the molecular structure of matter.

By definition, hoaxes are forgeries, and forgeries require originals from which to copy. So what is this 'unknown force' that creates genuine crop circles? One answer may lie with sound.

Echoed in all the world's faiths and traditions, Universal matter was created by sound: 'In the beginning was the Word, and the Word was with God', St. John reminds us. Hopi and Navajo traditions even assert that in ancient times shamans would utter words onto sand and create patterns, a concept not dissimilar to the Hindu mandalas which are said to be expressions of the vibration of God. Consequently, the Eastern faiths- Islam in particular- chose sacred geometry to express the image of God, a technique later used in those hymns to sacred geometry, Gothic cathedrals.



One of Hawkins' Euclidean theorems that fit crop circles with snug precision. His discoveries also prove that crop circles encode diatonic ratios.

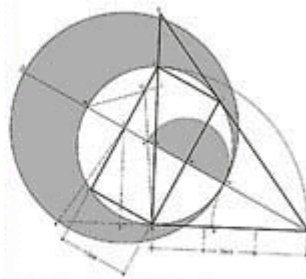
Modern science now shows that these geometric rhythms lie at the centre of atomic structures. When Andrew Gladzewski carried out research into atomic patterns, plants, crystals and harmonics in music he concluded that atoms are harmonic resonators, proving that physical reality is actually governed by geometric arrays based on sound frequencies. Even that primeval Hindu sound, the OM, from which is derived our modern term 'hum', when sung into a tonoscope produces the very geometric shapes attributed with 'sacredness'. Perhaps the most important of these shapes is the hexagon, upon which the Egyptian matrix named the Flower of Life is based. This series of outwardly-rotating divisions of the circle accommodate the branches of the building blocks of life, the amino acids. This Flower of Life has subsequently manifested as a crop circle.

As the expression of number in space, geometry is inextricably linked to music since the laws of the former govern the mathematical intervals that make up the notes in the western music scale- the diatonic ratios- hence why the ancient Egyptians referred to geometry as frozen music.

In the February 1992 edition of Science News, Prof. [Gerald Hawkins](#) used the principles of Euclidean geometry to prove that four theorems can be derived from the relationships of elements in crop circles. More significantly, he discovered a fifth theorem from which he could derive the other four. Despite an open challenge, over half a million subscribers have been unable to create such a theorem, which Euclid himself only hinted at twenty-three centuries earlier in his thirteen treatises on mathematics. So it came as a slight surprise when its equilateral version materialized as 160,000 sq. ft. of flattened barley at Litchfield, Hampshire.

Since Hawkins' Euclidean theorems also produce diatonic ratios, a link exists between crop circles and musical notes, themselves the by-product of the harmonic laws of sound frequency. Soon, crop circles bearing unmistakable associations with sound then began to appear. One contained a curious ratchet feature from which is constructed a musical diagram also dating to the Egyptians, the Lambdoma. Also known as the Pythagorean Table, it defines the exact relationships between musical harmonics and mathematical ratios.

In 1996 another crop circle demonstrated the combination of two important figures: the 3-4-5 triangle and the Golden Mean, producing the geometric diagram necessary to produce musical ratios. But it was a convincing formation at Goodwood Clatford- 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 etched in 5000 sq ft of barley.



Harvested crop circle in St. Neots depicts the 3:4:5 triangle and the Golden Mean, a formula that produces musical ratios.

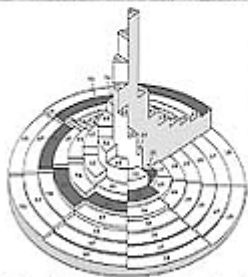
Cymatics is the study of vibrational wave patterns. One of its earliest pupils was Margaret Watts-Hughes who, in 1891, captured precise geometric patterns on film as she sang sustained notes into a device containing lycopodium powder. But it would be another seventy six years before Swiss scientist Hans Jenny published the first of his painstaking studies on the transmission of sound through physical mediums, this time in the shape of monitored electronic frequencies.

He 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 forms could be discerned. Like Margaret before him, Jenny enabled humanity to observe 'frozen music'.



Jenny also provided a physical connection to the creation of crop circles since many of the vibrational patterns found in his photos mimic their designs. Some are blatant imitations, such as the circle surrounded by concentric rings typical of early 80s patterns, the tetrahedron at Barbury Castle in 1991, the spider's web mandala at Avebury from 1994, even the highly structured star fractals of 1997. Other photos demonstrate the construction geometry encoded within the crop circles' skeleton.



© Robert Faulkrod

Stockbridge crop glyph (top) and Pythagoras' Lambda which contains all musical ratios.

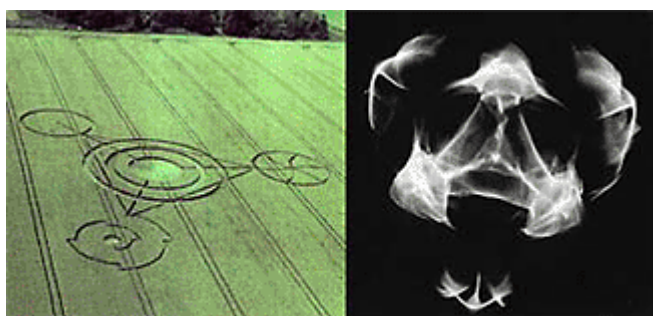
Visually, then, there is little room to deny the connection. But what evidence is there of sound in crop circles at a physical level?

Many accounts exist of a trilling sound heard by people prior to witnessing crop circles forming. The reports describe a sudden stillness in the air, the morning birdsong superseded by a trilling sound and the banging together of wheat heads despite an absence of wind. A whole section of crop then lays down in spiral fashion, the whole episode lasting less than fifteen seconds. Circles researcher Colin Andrews came across the trilling noise himself when, in mild frustration during his search to find a single answer to the phenomenon, he beseeched the heavens, "God, if only you could tell me how these things are created". The reply he received was eventually captured on magnetic tape. Subsequent analysis at Sussex University and NASA's Jet Propulsion Lab concluded the noise was mechanical in nature and beating at a frequency of 5.0-5.2 kHz.

Whilst recording an interview inside a crop circle the same sound was heard by a BBC cameraman shortly before it rendered a £30,000 TV camera obsolete. Interestingly, when the sound made another appearance during group research inside another formation it exhibited qualities of non-linear movement, and behaved in tandem with specific requests, sometimes on a psychic level. Since it also has the ability to transmit on radio frequencies and interfere with electronic equipment, birds and insects can be ruled out; and although skeptics are quick to accuse that the recorded sound is, in fact, the grasshopper warbler, stroboscopic analysis of both voice prints revealed vast differences between this bird and the bizarre noise. Besides, these birds frequent marshes, not vast, open fields of cereal crop.

Interestingly, the Aborigines relate to this trilling sound. During their ceremonies to contact- in their words- the sky spirits, a 'bora' consisting of a specially-shaped piece of wood is attached to the end of a long string and whirled, creating a noise practically identical to the crop circle hum. One has to wonder where the inspiration for this device came from, who these sky spirits were, and what on earth made the timeless Aborigines associate this noise with them. That was until it was discovered that not only have crop circles appeared in Australia, many throughout the 1960s, but their manifestation figures in Aboriginal lore, just as their geometries appear in rock paintings.

In 1998 sounds of a more melodic kind were heard and recorded inside a formation by three witnesses (or is it earwitnesses?); the design was founded on sevenfold geometry, a representation of the intervals in the diatonic music scale. Several months later I came across a diagram called the Web of Athena, in which all the points of the heptagon are connected. Despite the jumble of lines the diagram consists of just three line lengths, and by juxtaposing these onto a stringed instrument, the exact same notes were recreated.



Barbury crop glyph and its counterpart as a harmonic frequency in liquid.

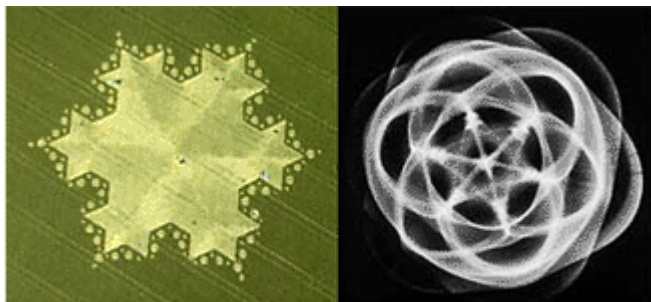
But perhaps the greatest connection linking sound to the manifestation of crop circles lies in their greatest anomaly: the permanent bending of the plants' stems. In Canada during the 1960s, laboratory experiments measured the effects of music on plants by subjecting them to different tones. Exposure to heavy metal music made the plants tilt in the opposite direction, whereas classical music lulled the plants toward the speakers. But in the case of Hindu devotional music- and the songs of Ravi Shankar, in particular- the stems bent in excess of 60° to the horizontal, perhaps the closest any human has ever come anywhere to achieving that right angle common to genuine crop circles.

Further experiments at Annamalai University applying Indian devotional song generated additional effects: the number of stomata in the experimental plants was 66% higher, the epidermal

walls were thicker, and the palisade cells were longer and broader than control specimens, sometimes by as much as 50%. Similar biophysical changes are known to occur in plants collected from crop circles. Tests performed since 1989 by American physicist Dr. W. Levegood consistently show how the energy creating crop circles is able to affect seed embryo and plant growth, elongate the plant's nodes, even alter the pattern of the chromosomes themselves.

Yet the effect extends beyond plants. 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. The effect is consistent with the slight 'baking' regularly observed in crop circles, where the affected area appears noticeably drier than the rest of the field despite overnight rain; the same applies to the 'slight burning' at the base of crop circle stalks. Oddly enough, Smith speculated at the time that sound energy also increased molecular activity in plants, three decades before it was found in crop circle samples by Levegood.

Since a sudden and abnormal burst of growth is also known to occur in crop circle plants it was postulated that microwave was the culprit behind the creation of crop circles. However, microwave has the ability to render biological systems sterile, and a certain dose will even kill organisms. Yet the crop circles plants are alive and well. After four years of experiments on regular wheat at the University of Ottawa, Mary Meares and Pearl Weinberger found accelerated growth in laboratory samples, and postulated that the sound frequency they applied had produced a resonant effect in the plants' cells, thereby affecting their metabolism. The frequency Measures and Weinberger applied was identical the crop circle trilling noise.



Hexagonal geometry as an expression of energy in a wheat and in a laboratory.

Sound as one energy source capable of creating crop circles now becomes very feasible. But what type of sound coaxes plants to bend and lie down, applying firm and gentle pressure and, given the intricacy and complexity of latterday patterns, with a fine degree of control?

Interestingly, ultrasound is capable of interacting with physical elements to such an incredible degree. It can be aimed, focused and reflected almost like a light 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 in crop circles by Paul Vigay. His empirical data shows how the level of background readings drop abruptly when he crosses the threshold of a formation. Close to the centre, readings hover in the vicinity of 260-320 MHz.

However, just as crop circles have made a quantum leap in mathematical complexity over the past two years, so readings have recently jumped to 540 MHz. Incredibly, this coincides with Jenny's experiments which show that a relationship exists between the rising complexity of cymatic geometries in proportion to the rise of dispensed frequency. In other words, the level of frequency, whether in a laboratory or a field, correlates with the increase in design intricacy.

Such extremely high frequencies are known to affect the state of awareness and consciousness in humans. Interestingly, people visiting crop formations often notice this, where even simple left brain functions such as counting are affected. When tuned in the MHz range ultrasound also prevents damage to sensitive tissues, so its healing properties are used in treating muscular ailments, and cases of people reporting healings when inside crop circles are becoming commonplace. One long-time sufferer of Parkinson's Disease reported being cured overnight.



Hackpen crop glyph based on Pythagoras' tetractys, a collection of points relating to the properties of sound and light.

Below 20 Hz sound becomes infrasonic, and such frequencies are directly involved with biological processes. It is well known that long exposure to infrasound can cause unpleasant conditions such as fatigue and nausea, and such symptoms are reported by visitors to crop circles. When combined with high-pressure, the acoustic power created by infrasound is in the order of kilowatts. In the case of plants, this pressure boils the water held inside the stems in a nanosecond. As water heats it expands, and a close look at crop circle plants reveals tiny holes in their nodes where this superheated water has escaped. With a hollow cavity near the base, and the stems made subtle like molten glass by the heat, the now top-heavy plants collapse into their new horizontal position.

Since this 'vapour cavitation' also creates local temperature increases of hundreds of thousands of degrees for a fraction of a second it is not now difficult to see why millions of gallons of groundwater disappear within the area of a crop circle, or why the plants have a cooked, malty odour. Combine this with Levengood's discovery of microscopic blow-holes in the plants' cell wall pits (indicating the rapid boiling of water inside the plant), and everything starts to fall into place.

This infrasonic/ultrasonic process also creates a hissing sound, and if you are fortunate enough to visit a crop circle within a few hours of its appearance you will find yourself surrounded by this. Since infrasound is also capable of atomizing water molecules and creating a fine mist, it should be mentioned that in 1996 a farmer out harvesting his field at Etchilhampton saw what he describes as 'a series of columns of mist rising like cannonshot from the field next door'. Mist looks very out-of-place in a wheat field, in mid-afternoon on a dry, summer's day. Yet shortly after the incident a series of thirteen circles connected by a three quarter-mile long avenue and a Sanskrit-type glyph appeared in the very same field.

Finally, vapour cavitation is accompanied by a sudden spark of light called sonoluminescence, caused by the production of electrical discharges as the water/vapour is ionized. And the lower the operating frequency, the greater the effect. In a laboratory, 18 Hz has been used as 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 blind to Dr. Levengood, and some inevitably show unmistakable disruption to their chromosomes. Yet give him samples deliberately produced by field forgers and he'll find something really unusual-perfectly normal plants.

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 honour their histories through song and music, their healing rituals performed with sound or rhythm. This relationship is further extended 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.



A cymatic pattern as a crop circle in barley with the plants bent six inches from the top. Clatford 1996

If sound vibrations are both encoded into and generated by crop circles, is it not possible that they, too, can arouse the individual at a spiritual level? After all, it's through music that whole human experiences are celebrated and carried from generation to generation. It is very probable that it is for this reason that the very shape of the human ear- more specifically the cochlea- is a spiral constructed according to the harmonic laws of tone, just as the same spiral forms the primary basis from which thousands of crop circles have sprung.

Music is a carrier for social change. The effects of Handel's music is believed to have reversed the state of morality in Victorian England, just as the anarchic overtones of Punk corralled disillusioned youth into fighting an establishment that held no tolerance for those who stepped outside the system. The effects in people's states of awareness through contact with crop circles is similarly documented. In 1990 a pictogram at Alton Barnes sported the trident of Shiva the Transformer. Ironically, it was through exposure to this crop circle that millions around the world were transformed, just as images of crop circles today continue to enlighten the awareness of those who come into contact with them.

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 is extended and receptive to their tune.

Text © Freddy Silva 1997. No reproduction without prior permission.