

Bees Healing Bees

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Theory: Bee hives exposed to the amplified recording of selected hive frequencies will become stronger, more productive and resilient to disease, pests and environmental interferences.

Selected hive : Hawaiian Big Island bees
Amplification device: Environmental Harmonizer™

As I sat through the beekeeping class on disease, parasites and colony collapse syndrome, I began to wonder, why I would want to be a beekeeper. Following the class, I continued investigating diseases and treatments. I found the rather universal concluding advice perplexing, “Keeping your bees healthy is the best treatment against all afflictions.” Great idea, but apparently all “new” bees come with a certain level of disease and afflictions to be welcomed into a less-than-supportive environment. Keeping bees must be an instinctive, not an intellectual pursuit.



From left to right: Joy Luck, Valerie Solheim and Gold Run. 3.31.09

I have been a therapist most of my professional life and have used frequency healing modalities with humans and animals for over five years. It occurred to me that I could apply the same frequency science to bees as I do to other living beings. Frequency healing concerns the correcting of electromagnetic imbalances and blocks in tissues, organs and organ systems. All cells produce electromagnetic energy (EME). Individual cells, when organized into a system, create and radiate an EMF. There is a range within which the EMF of a given system or organism is considered balanced or healthy. Bee colonies maintained within a healthy frequency range could present a natural resiliency to pests, disease and possibly even microwave (electromagnetic) interference.

My intuition told me that the health of honey bees could be maintained by playing back to a weakened hive the sound vibration from a healthy hive: bees healing bees. This could also be used as “preventive medicine”, playing the recording to maintain the health of the hive. Furthermore, it occurred to me that this procedure had to be simple and cost effective or I probably would not do it, nor would anyone else. I began reviewing the scientific literature on bee frequencies. Basically, I found that entomologists who study bee frequencies or language, study them to identify distinct sounds that can be linked to specific behaviour or affliction.

In 1964 Eddie Woods¹ (1901-1976) developed the apidictor, a listening device with filters that could detect the changes in sound produced by a colony before and during swarming. It was an article on Woods' apidictor that struck me early on as important.

Forty-four years later, Frank Liton² suggests there might exist a sound health correlation in bees. He writes,

In my particular use case, I would like to record the sound of honey bees in their hive... [This] information, if analyzed in real time, could provide a quick indication of problems within the honey bee colony.

... I have reason to believe, from both the research literature and discussions with other beekeepers, that the sounds the bees make are correlated with their health.

We agree. However, my goal is not to prove that “the sounds the bees make are correlated with their health” because *that* beekeepers know. Nor am I “listening” for threatening conditions. My theory states that recording the frequencies of a healthy hive can positively affect other hives: let bees heal bees. I posed the following question: If I record healthy Hive A and then play the sound recording to Hive B would it (1) be understood by Hive B and (2) positively influence the vibrational frequency of Hive B bringing it up to and maintaining it within the healthy range? If the answer to both questions is yes, then hives influenced by the bee recording would experience less afflictions, thus suffer less die off, and produce more honey, naturally.

This theory of like healing like is ancient. It is supported by hundreds of years of practice and research in the area of sarcodal homeopathy. Sarcodal homeopathy is when the frequency of healthy tissue transmitted in water (liquid crystalline medium) is administered to support injured, diseased or weakened tissue. In the case of the bees, the frequency is transmitted through the hive box (the medium) which acting as a resonator resonates the bees to a higher or sustained frequency level.

Research Tools and Location

1. What kind of equipment do I need to record the bees?

I spent quite a bit of time researching equipment and testing it before I went to Hawaii. Wood's apidictor study of bee frequencies was quite helpful³, albeit dated. I settled on a highly sensitive electret condenser shotgun microphone attached to a professional digital stereo recorder⁴.

2. Where do I place the microphone?

Initially, I placed the microphone with a funnel attached underneath the hive against the bottom screen. The recordings were too weak. On the Big Island, the beekeepers gladly opened up their hives for me, took out a frame, placed the microphone directly inside and then closed the hive. I listened to the recording at a distance through headphones. I made separate recordings of the brood hive and the super for 30-45 minutes. Fortunately, the

¹ dave-cushman.net/elect/apidictor

² Frank Liton (Nortel LearnIT 2008)

³ Rex Boys, Listen to the Bees (c) Beedata www.beedata.com 1999

⁴ James C. Nieh; Behav Ecol Sociobiol (1998) 43: 133 ± 145 Ó Springer-Verlag 1998)

bees collectively decided that they need not waste their time propolizing the benign intruder.

3. What is the frequency range of a healthy hive?

In the literature reviewed, I found a variety of answers. Wernner⁵ writes,

... [T]he characteristic hum of a beehive, is produced by the "ventilating" worker bees: bees that stand anchored on the comb or some other structure in the hive and create currents of air by beating their wings. This sound, varying in intensity, has a basic frequency of 250 cycles per second and often has strong overtones. It is usually much louder than the buzz of a flying bee, undoubtedly because the sound emitted by the ventilating bee is enhanced by the resonant vibration of the structure on which it is standing.

In an abstract on "monitoring of swarming sounds in bee hives" ⁶ another frequency range is recorded:

Swarming is indicated by an increase in the power spectral density at about 110 Hz[; approaching to swarm the sound augmented in amplitude and frequency to 300 Hz [300-110=190Hz], occasionally a rapid change occurred from 150 Hz to 500 Hz

This suggests that 190HZ was the natural frequency level of the hive prior to swarming. Based on the above reference, a probable frequency range appears to be between 150-190Hz. Wenner 's⁷ sound recordings for the hive come in at 250Hz. Given the variances possible, a sound range between approximately 150-250Hz seems reasonable. I brought my brood hive recording to Professor Chang⁸ at the University of Colorado School of Music for an explanation of the sound. Professor Chang determined that the sound was an "E3 about 165 Hz with a variance that goes down a perfect fourth and up around a half step".

Science aside, a beekeeper knows the sound of a healthy hive.

4. Where do I find healthy bees?

For reasons of isolation and abundance and variety of flowering plants, Hawaiian bees are considered to be healthier than most. On the Big Island, the Royal Hawaiian Honeys honey is certified "organic" because its bees and honey are pest and toxin free. Some Hawaiian bees do have bee diseases and as of the end of 2008, mites. At this point, diseases and mites are neither extensive nor are they treated chemically, if at all. The beekeepers I met with (3/09) told me that their hives were clean and healthy. The keepers I worked with sell their honey at the farmer's market for a living.

Bee Communication

5. Would a recording from Hive A affect Hive B?

⁵ Wenner (1962) BeeSource.com

⁶ S. Ferrari, M. Silva, M. Guarino' and D. Berckmans:portal.acm.org/citation.cfm?id=1410475.1410714

⁷ Wenner (1962)

⁸ Chan, Philip, Professor of Music Theory, conversation 4/8/09

Wenner⁹ recorded a jarred hive from the point of jarring to its return to normal.

When the hive is jarred, the collective reaction of hundreds of guarding bees is heard as a sharp, loud buzz. This is followed shortly by a "piping" of workers throughout the hive, which consists of faint beeps at half-second intervals, the sound being a complex one with a fundamental frequency of 500 cycles per second. The piping goes on for several minutes. Apparently it serves to soothe the hive; it has been found that a recording of such piping, played to the hive, will quickly quiet the disturbed bees.

Simpson and Greenwood¹⁰ created an artificial sound of the queen bee piping, a sound used to prepare the hive for an imminent departure. Then they played the recording to other hives.

When the vibrations were applied to four hives containing very small colonies with unmated queens less than one week old, all four colonies swarmed, leaving no bees in their hives. Sixteen slightly larger colonies, also containing queens a few days old, were divided into two groups of eight. One group received vibrations and five of the colonies in it swarmed, each leaving a proportion of its bees in its hive. The other eight colonies did not receive vibrations and none of them swarmed.

6. Would the recorded collective sound of Hive A effect Hive B? Yes.

First I'll review the concepts of "natural" and "resonant" frequency. Let's turn to physics to explain frequency behavior.

*... [Two tuning] forks are connected by the surrounding air particles. As the air particles surrounding the first fork (and its connected sound box) begin vibrating, the pressure waves which it creates begin to impinge at a periodic and regular rate of 256 Hz upon the second tuning fork (and its connected sound box). The energy carried by this sound wave through the air is tuned to the frequency of the second tuning fork. Since the incoming sound waves share the same natural frequency as the second tuning fork, the tuning fork easily begins vibrating at its **natural frequency**. This is an example of **resonance** - when one object vibrating at the same natural frequency of a second object forces that second object into vibrational motion.¹¹*

In my theory, the hive acts as the sound box and the bees as the tuning forks.

7. Is the sound produced by wing-vibration a language?

In Wenner's article, "Sound Communication in Honey Bees", he answers three important questions regarding language:

i. Is wing-vibration language?

A close analysis of these sounds and the circumstances of their emission now provides the strongest evidence that bees use sound to convey specific messages.

ii. How is the sound produced?

It appears, therefore, that wing vibration is responsible at least for amplification, and probably for production, of the bee's sounds.

⁹ Wenner , .beesource.com/pov/wenner/sci1964.htm

¹⁰ Simpson and Greenwood, Rothamsted Experimental Station, Harpenden, Herts, England, 7/74

¹¹ glenbrook.k12.il.us/GBSSCI/PHYS/CLASS/sound/u1114b

iii. How do bees "hear"?

[O]bservations indicate that the bees receive sound through their legs from the vibrating structure on which they stand. Quite possibly they have receiving organs for sound on their legs below the knee.

There is also evidence that they receive sound through their antennae.

Slim Spurling's Harmonizer

8. What do I do with the recordings?

I discussed my project with two colleagues, David and Erina Cowan, both of whom are frequency therapists. David is also a professional musician. They quickly agreed to help me. David has the professional equipment and software to edit recordings. The Cowans recommended I acquaint myself with Slim Spurling's harmonizing tools before leaving for Hawaii.

This I did. Slim Spurling¹², who passed away in 2007, dedicated 40 years of his life to the study of geobiological stress. This included studies in "microbiology, forestry, and herbal nutrition along with diverse experience through the studies of metaphysics, the Far East and American Native Shamanism (along with a) rich background in applied problem solving utilizing biologic knowledge, chemistry/ physics, quantum physics, bio-feedback training, psychotronic research, and extensive study in learning-how-to-learn" and meditation.

"Slim's heart-felt desire was to help heal our planet and everyone and everything living in and on our planet." Slim's wife Katharina and staff hold this desire as the focus of their continued service to life. As such, they immediately and enthusiastically embraced my bee healing bee theory. Not only did they express great interest and concern for the bees but, on their own, they had provided tools to beekeepers to help relieve the distressed hives.

After our conversation, they held my credit card number in exchange for several Light-Life™ tools. Of these tools, the Environmental Harmonizer™ became an important factor in assuring high quality bee



frequencies for the recordings. For my purposes, Spurling's research showed that the Harmonizer™ can be used for environmental and health issues, agriculture, pest control and the list goes on. The Harmonizer™ dramatically reduces or eliminates electromagnetic intrusion and generates a general state of calm and clarity. "...[I]t appears to be in accord with the primal, natural field of the planet and to provide a constructive wave pattern".¹³



Patrick's hive with Harmonizer

¹² Slim Spurling (slimsuniverse.com) The Light-Life Tools, 2007

¹³ The Light-Life Tools, 2007

The Harmonizer™ creates scalar wave patterns (see Appendix A) that are transmitted by its rings when used as an antenna for sound waves.¹⁴ The use of the Harmonizer™ “antenna” in conjunction with the recording of the bees, made perfect sense.

See a video of Slim demonstrating his tools on UTube
http://www.youtube.com/watch?v=MUIlwOrQ6_s&feature=related.

Bees and the Electromagnetic Field

9. How many recordings would I have to make?

The frequency of bees changes throughout the day, the season, during hibernation, flows, requeening, etc, etc. As Linton¹⁵ observed,

...I would like to record the sound of honey bees in their hive. The sound they make varies over the course of a day and over the course of a season. It is affected by many factors, such as the presence or absence of a healthy queen, diseases, food supply, temperature, etc. Thus, the information, if analyzed in real time, could provide a quick indication of problems within the honey bee colony. For starters, I would like to record 30 seconds of audio every hour, indefinitely. I expect that once I have determined the bees' patterns of sound, that much less data would be adequate, possibly 10 or 15 seconds of audio every 4 hours might be enough.

This would be overkill, as Linton later deduced. There exists a fundamental or natural frequency range for a healthy hive regardless of the time of year. What changes is the range of related tones around the natural frequency. But, within the healthy range (150-250Hz), are there subgroups, brood box, super, and hibernation that need to be accounted for? Not for my purposes. I want to capture the holistic sound produced from the sound of the hive. Furthermore, only the frequencies recorded from the totality of the hive will produce a coherent frequency capable of enhancing and sustaining the frequency of other hives.

- A. *Honey bee wings beat at a constant rate of 230 beats per second or 13,800 beats/minute.*¹⁶
- B. *In flight, an adult bee flaps its wings 250 times a second but when fanning, it grips the comb and this brings the frequency down to 190 Hz.*¹⁷
- C. *A drone beats his wings at a rate of 190 Hz.*¹⁸
- D. *"[N]urse" bees care for the brood around-the-clock even when experiencing a light:dark illumination regime.*¹⁹

The recording made from the super was loud with spiky overtones. The recording made from the brood box produced a continuous band of sound with sympathetic overtones. The brood box recording gave the most consistent and satisfying frequency output. The box's melodious hum indicated to me that this recording would provide a more coherent EMF than the buzzing from the super. This gave rise to the next question.

¹⁴ Patents: faqs.org/patents/app/20090040122

¹⁵ Frank Linton (2008)

¹⁶ Christian-M, Honey Bee 40D0027080

¹⁷ beesource.com, Wood's apidector study

¹⁸ Boys, 1999

¹⁹ Shemesh, Cohen and Bloch' *The FASEB Journal*. 2007;21:2304-2311

10. What is the difference between the effects of the queen bee's secretion of pheromones on the hive and the hive's EMF?

One of the most important functions of the queen is to enforce the social order of the hive. She does this by her very presence! "Queen Substance" is a pheromone that the queen secretes to let the member bees know that all is well in the hive. Pheromones are chemical substances secreted by the body that like members of the same species recognize and respond to. Bees in a colony "share" the queen's pheromones among themselves, and thus recognize fellow members, as well as identify intruders.²⁰

While the queen's pheromones produce a regulatory effect on the hive the EMF of a colony maintains its strength and health. Cells produce EME. Cells organized into a system (body) radiate an EMF from within their body out into the space surrounding their body. Professor Hunt²¹ while at UCLA and now director of BioEnergy Fields Foundation has done extensive research on EMFs and later bioscalar waves. Hunt writes,

Scientifically fields are all inside and outside of the body.... It comes from inside the atoms of the body, it manifests outward and transacts with the atoms of the world.

A healthy EMF protects the body from external interference, be it disease, parasites or incompatible EME charges. A strong EMF creates a level of coherency that is vital to maintaining health and capable of producing a healing effect on another body with which it shares a harmonic resonance. Hunt²² states,

*The way in which the field is organized determines how it affects the ... body. ...[T]he contaminated and weak electromagnetic energy of [the] environment [decreases the energy of the field internally]
If the field is coherent, all of the electrical system inside the field becomes coherent.
If the field is incoherent, everything goes awry.*



Gold Plaque form Rhodes and a Bee Coin from Sicily © www.thebeegoddess.com

There exists a relationship between the honey bee hive and EMF it produces that is greater than its parts. I believe that a strong coherent EMF produced by the hive creates a harmonic field that can have a highly organizing effect on surrounding bodies; the Zen of beekeepers. In all cultures where honey bees existed, there, too, existed a mystery cult with the hive at its center. "Bees were venerated in prehistory and revered in ancient

²⁰ ccpollen.com

²¹ Valerie V. Hunt, *bioenergyfields.org*, 2001 The Human Energy Field and Sound Therapy

²² Hunt, 2001

cultures far and wide, especially Egypt".²³ The power the bee hive has extended over mankind from cell to soul has been extraordinary.

11. What is the connection between the honeybee and the EMF? Let's start from the bottom up. First, the Earth has a natural frequency of 7-9Hz.²⁴ The hive is a natural resonator and is activated by the Earth's frequencies.²⁵ A resonator is a hollow chamber whose dimensions allow the resonant oscillation of electromagnetic or acoustic waves.

Second, in addition to the EME produced on the cellular level, the bee's abdomen produces an EMF. The elasticity of the bee's abdomen, growing with nectar and water and shrinking when unloaded in the hive, is attributed to collagen molecules which help tissues withstand stretching.²⁶ Another attribute of the molecule is its ability to generate an EMF when oscillated.²⁷ Kruszelnicki²⁸ suggests that the behavior of bees oscillating their wings against their abdomen plays a role in communication and navigation. This is highly likely, because the mushroom gland, located in the abdomen, contains paramagnetic particles that function like a compass.²⁹

Throughout her stay inside the nest, the recruiting forager produced sounds. During sound production, her folded wings vibrated dorsoventrally over her abdomen and she attracted the attention of follower bees who positioned their antennae closely around her body.³⁰

Bees demonstrate an extraordinary sensitivity to vibrational frequencies. (The human ear responds to sound pressure.) "Bees notice tones as vibration attractions over the underground, over their claw members,... [through] a sensory organ in the rail of their legs" and through their antennae. They can pick up frequencies from 100 to 800 cycles per second.³¹

Bees and their hives both depend on and produce EM vibrational waves. I suggest that the EMF of the hive acting as a magnetic force plays an important part in their successful flight patterns. Again, Goldberg³² writes,

It is commonly held that bees orient themselves to light and upon returning to the hive go through a complex dance to relay this information to other bees. However bees also use the electromagnetic fields of the earth as a force for orientation. The bees have a gland that is called the mushroom gland, located in the abdomen, which functions much like a compass. The difference is that it relays constant data back to the brain as to where the bee is, much like the function of a flight recorder. This ability to navigate tells the bee where they are in time and space.

²³ Andrew Gough, http://www.andrewgough.co.uk/bee2_1.html

²⁴ ELF Labs, teslartech.com

²⁵ Gerald Goldberg, M.D, glgmd32@hotmail.com

²⁶ *Molecular Cell Biology*: ncbi.nlm.nih.gov/books/bv.fcgi?rid=mcb.section.6542

²⁷ Dr. Zaid Kasim Ghazzawi: [quran-miracle2.com/PowerPoint/English/PollutionEng%20\(Lecture%2016\).pps](http://quran-miracle2.com/PowerPoint/English/PollutionEng%20(Lecture%2016).pps)

²⁸ K. Kruszelnicki, abc.net.au/science/k2/trek/4wd/Over57

²⁹ Goldberg

³⁰ James C. Nieh, springerlink.com/content/xx1vw5rpxq3g4ha6/

³¹ bee-info.com/biology-bee/acuesthesia.html

³² Goldberg

This forms the basis for laying down memory tracts and organizing information, the very basis for learning. The bee's orientation to the earth's electromagnetic signature is a reliable, simple and dependable means of orientation and navigation ...

The EMF signature of the hive with its capacity to resonate the Earth's frequencies coupled with the EMF of the bee's abdomen creates an electromagnetic attraction that orients the bees back to the hive. If the EMF of the hive has been interfered with or the bee's capacity to navigate has been weakened then the successful return flight would be questionable.

Bees Healing Bees

The speed and direction at which the electrons revolve around the nucleus in a cell is vital to the health of the cell and the organism. If either is disturbed (direction can be reversed) the organism is compromised. A compromised organism is subject to degeneration and opens itself to disease and parasites. A healthy colony of bees produces an EMF that is capable of protecting it from external threat and possibly assisting in the flight of the bee back to its colony.

Research has shown that the recording of a specific sound used to elicit a corresponding behavior from one hive, when played to another hive will elicit that same behavior. The laws of physics state that when one object vibrating at the same natural frequency of a second object forces that second object into vibrational motion. Therefore, playing a recording of a healthy hive to a second hive of bees will positively affect the second hive.

This could be sufficient but not optimal. With the introduction of the scalar waves produced by the Harmonizer™, the EMF of recorded Hive A is brought to its highest level. The Harmonizer™ is capable of reducing or eliminating electromagnetic intrusion of non-beneficial frequencies or pests and producing a general state of calm. In this state, bees weakened by pests, disease and the environment are strengthened and healthy bees are maintained.

Valerie Hunt, PhD³³, is a pioneer in the field of healing with sound frequencies and scalar waves. In the following Hunt describes the EMF and how the inner and outer EMF interact.

The energy field lies between the physical organism and the universe. It is the direct interface with every experience this body has. When we are in groups we have interaction: my field meets yours and in the interaction we are changed. Yet sometimes when you introduce two fields neither changes, or only one field changes. This is because the field is always selective. The way in which the field is organized determines how it affects the human body. With the contaminated and weak electromagnetic energy of your environment you also decrease the energy of the field internally. For proper action the field has to be constantly nourished. Sound and music nourish the field

As mentioned above, the Harmonizer™ acts as an antenna when placed on a source of sound. The field diameter of the Environmental Harmonizer™ extends to about 15 miles when it is activated by a recorded sound.

12. Where is the CD recording placed in relationship to the hive?

Wenner's³⁴ research suggests that bees do not sense sound waves through the air.

³³ Hunt, 2001

In the experiments in which artificial tooting was played to a caged queen it was found that the queen responded only when the sound was transmitted via a vibrator attached to the hive; when it was transmitted through the air, even with the vibrator suspended close to the bee, she did not respond at all.

I've given Wenner's work much thought. His objective was to elicit a specific behavior based on transmitting a specific sound from a queen. My communication is to the whole hive. In the shamanic tradition³⁵, the beekeeper speaks to the hives:

Bridge...asked me to start speaking my key realizations to the hives, to begin the lifelong habit of talking to them. Indeed, I was to learn that "telling the bees" is one of the key practices within the bee tradition. So is "asking the bees," as indicated by the old adage "Ask the wild bee what the druids knew..."(p. 36).

*He began to beat upon the metal drum with two sticks...in a **regular rhythm**. This technique,...is known as *tanging*: hitting a piece of metal in such a way that bees respond to the sound and may be easily subdued (p. 50-1).*

I highlighted "regular rhythm" because it is a key factor in bee communication and a quality of the CD bee recording.

My objective is to enhance or maintain the frequency level of the hive based on a sound recording of an entire hive from the brood box. I have two hives. Presently, twice a week, I place the Harmonizer™ atop one hive. I face a small stereo amplifier connected to a CD player toward the hives. I play the *Bees Healing Bees* CD for about 10 minutes, assuming both hives are healthy. I do it in the late afternoon or evening. I say, "presently" because I am observing the effects of the sound on the bees based on time, location and duration of sound. When not on top of a hive, the Harmonizer™ sits atop my CD player in the house.

Conclusion

Bees Healing Bees is an intuitive concept based on the science of frequency healing and bee communication. I strongly believe playing the CD will have a positive effect on the hives, the environment and people in the area. I am putting the theory into practice and will report on my progress and observations. You are welcome to join me in the field as an observer or by purchasing the CD and Harmonizer™ and contributing your own observations. This is one more exciting field of inquiry and adventure. Why not?

Postscript

I called Professor Emeritus Adrian Wenner (Department of Biological Sciences, University of California, Santa Barbara) to ask about his study on bee language and recordings. At the end of our conversation he said, "We know nothing about bees, nothing."³⁶ That was probably the greatest encouragement I got to stay the course. It's all an adventure.

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For updated observations e-mail Valerie at: Valerie.Solheim@gmail.com

³⁴ Wenner, *ibid*.

³⁵ Simon Buxton, *The Shamanic Way of the Bee*, 2004.

³⁶ Wenner, conversation 3.3009