

Exploration into plant and animal sounds and cross species communication and uses of music

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The original intention for this exploration into music and nature was to find out how each represents itself in the other and the other in itself. I started with a lot of questions about the human use and manifestation of music, as Pythagorus saw it (with harmonics, scales, overtones and undertones - represented in the Lambdoma) and about whether or not plants and animals create music. I was also interested in inter-species communication. I had a list of books that I wanted to read excerpts from, that pertained to this area of study; Music and Miracles (Don Campbell), Sounds of Healing (Mitchell Gaynor), Sonic Alchemy (Joshua Leeds), Silent Thunder (Katy Payne), Healing Imagery and Music (Carol Bush) and The Harmonic Experience (W.A. Mathieu). I was interested in whether or not (and how) music could be a source of healing, and also in how we are 'in common' with the rest of existence, not separate from it.

Once I started, I realized there was much to listen to, so I focused on a selection of tapes made 'in the field'; "Earth Tones" Michael Theroux and Gerry Vassilatos, 'Plant Tones', Michael Theroux, 'Harmonic Chemistry' Michael Riversong, 'The Diversity of Animal Sounds' Cornell Library of Natural Sounds, and also a CD, recorded by David Dunn, entitled 'why whales and children sing'. On all of these I listened to the types of sounds - and, sometimes, songs - that plants and animals make (including frogs, birds, bats and whales) as well as different areas of Californian soil and plants. I was surprised by some of the sounds. I thought they were going to be pretty but they were sometimes a little weird ('Plant Tones') in particular) and made me think of eerie, malevolent ET-types. I was surprised because I had imagined that the plants would be less 'contaminated' by themselves than humans seem to be and would therefore be that much nearer to the source of their existence and, since they do not complicate their lives as we do, would sound more 'celestial'. However, it was not like that at all: it felt creep listening to them and somewhat disharmonious. It did raise the question for me: 'is this their natural sound or is this sound they make the result of human interference with their 'genetics' and their landscape?'...I.e. have we so altered their environment with the use of pesticides and mass logging, that their disharmonious sounds were a reflection of that - or was the sounds I was expecting simply limited by my human definition of what is harmonious?

On the subject of sound, I found myself exploring the dynamics of listening by reading the book 'When Listening Comes Alive'. This book was written by Paul Madaule (1994) and explores the art of listening versus the art of hearing. He sees hearing as the mechanical capacity, that capacity which our body provides through the development of the ear (outer, middle and inner) and listening as the choice of whether to hear or not, and of what to hear, exactly. He points out that the ear, like our eyes, zoom in, by choice, on what they wish to pay

attention to and what they wish to eliminate in order to be able to function or to have a pleasurable experience. The other element of listening that Madaule points out is that based on Alfred Tomatis, his mentor, a French scientist (psychologist and physician) who specialized in the study and healing of hearing and listening during the 60's - who discovered that our hearing/listening development is chronological.

By working with people who had learning difficulties, he established a study of a bell-curve for listening that could determine (through the use of headphones and sound stimulus and response from patients) at what age someone stopped listening and for how long. He could do this because he discovered that our ability to hear increases exponentially as we age. For instance, when in the womb, our hearing range may go from 0hz to 750hz from the first few months of conception. And from the age of 1 year to 1.5 years, the hearing may increase in range from 13,000 to 15,000hz. If a particular patient's hearing dropped suddenly along the curve during the assessment test, it was therefore possible to find out at what stage in a person's life they stopped listening to certain frequency bands. This then becomes an opportunity to explore life events psychologically and emotionally to find out why that person might have chosen to stop listening at that time in their life. In Tomatis' practice, he would then use an invention of his, the 'electronic ear', to stimulate the missing frequencies back into existence whilst also providing counseling for the patient in order that they may take advantage of a full hearing/listening capacity with all the emotional repercussions that may occur with their re-introduction.

Since the ear is the first organ to fully develop in the fetus, it is obviously crucial to our learning development and our ability to be athletic or even to walk straight. If we cannot hear, our ability to speak and to communicate is heavily impaired. Alongside the use of our ears, another, crucial, way we have of listening, even when in the fetus, is through bone conduction. When we rest alongside our mother's spine, we receive information through the physical sensation of hearing as vibration, not just as aural sound patterns (although we would be able to hear that too). There is a connection here between our hearing and that of dolphins, my next area of research. This can explain how people who are either deaf or hard of hearing e.g. Beethoven and Evelyn Glynnie (a well-known Scottish classical percussionist/composer) are still able to participate in the performance of group music.

During this quarter, I found myself drawn to watching a series of videos on dolphins and whales in order to find out more about their nature, their lives and their use of communication. They are titled as follows; Great Sea Mammals (Vol. 1); A Sound of Dolphins - Jacques Cousteau; In the company of Whales - Dr. Roger Payne; Dolphins - National Wildlife Federation; Dolphins - The Ultimate Guide; Secrets of the Deep - Whales of the Pacific Northwest; Whales - An Unforgettable Journey. It became apparent during the viewing of these documentaries that dolphins have a 'melon' on the top of their head that sends out the echolocation sonar ahead of itself to determine what is out there. This is needed because it is so dark in the water. The way it received this information back for diagnosis is through it's

lower jaw. The dolphin's lower jaw is marked by a series of exactly evenly spaced sharp teeth that are designed, by nature, to match the frequency wavelength of the incoming information - they are spaced to receive the widest sine wave and, of course, anything less than that.

All these films covered different aspects of the life of those underwater mammals and their apparent lack of aggression towards humans in spite of our aggression towards them over the years. Just now, we are forming a more appreciative relationship with them where we can ask questions such as 'how can a dolphin leap into the air in direct defiance of gravity and the laws of physics?' 'what is their relationship to other realms?' and 'what do they have to communicate to us at this time in our planetary evolution?' I have never met a dolphin and yet I have this distinct sense that they are teachers in some way, teachers of love and patience, tolerance and play. There is one center, called the Dolphin Research Center, that uses the personable qualities of dolphins and their generosity to work with children with Autism or Cerebral Palsy or any other kind of mental or physical disability - the children get an increase in their development. Are the dolphins communicating something or is it simply their presence making a difference? When I think of Alfred Tomatis' work and how he improves the quality of people's lives by improving their capacity to hear, also especially with Autism and Cerebral Palsy - I begin to get curious. What is the similarity here? Why is there a similarity here? Is it the extended capacity to hear and to reach out and to be reached that increases the quality of people's lives and their ability to develop more happily and healthily? The extension of the ability to be touched and, therefore, to touch?

When listening to Whale songs and dolphin clicks and whistles we hear beauty because it is not only melodic but it is warm. There is a sense of community being advertised by their communication. Since these are mammals perhaps we have an aural aesthetic in common with them that makes their sounds beautiful. I say this with the plant tones in mind, which did not bear any resemblance to something that we could call beautiful. However, I must point out that this is only one recording so it is not necessary, at this point, to say that all plant sounds are unpleasant or disharmonious.

I have not, as yet, mentioned the findings of the Earth Tones tape. They were exciting. There was a lot of what sounded like wind and interference but above and beyond that was the sound of dancing harmonics, moving from left to right, like a shimmering, distant, rainbow. It was quite beautiful. These recordings were made by Gerry Vassilatos and Michael Theroux, through Borderland Sciences in California. They were detailed in their presentation and gave information such as location and details on the equipment they were using and how they were using it. When listened to on large speakers, the sounds literally traveled across the floor and up through my feet, leaving me with the distinct feeling that I had had a sonic jet shower from the bottom up. It was sensational. And to hear the frequency range from deep, low, hertz to the high overtones, was phenomenal - such range and such beauty.

When listening to some of the examples of various animal sounds on the 'Diversity of Animal Sounds' CD compiled by Macaulay's Library of Natural Sounds, I was stunned by the musicality of some of the birds sounds. The brown-backed Solitaire, in El Salvador, manages to do a descending and ascending chromatic scale at the same time! Then there is the Common Potoo in Venezuela that alternates between five and six notes of the descending b flat minor pentatonic scale. This makes me think of Pythagorus's findings of the musical notes and their relationships to each other and how music theory was never invented by us (as some would have us believe) but simply defined by us, within our various cultures, as a way for us to communicate and understand music amongst ourselves.

However, we don't have a monopoly on it! Birds don't go to music school like we do and yet they are using the scales that we use. Therefore this music is somehow inherent; a reflection of the greater universe at work (at play). This music was already here, we just learnt to hear it, as it pertains to us and the harmonics of music are ever present in all walks of reality as the harmonic overtone/undertone series -a mathematical blueprint for Ibis Universe's existence.

As David Dunn's CD and book 'Why do Whales and Children Sing', he has some wonderful recordings of different scenes in nature. His intent is to broaden our 'Tomatis Zoom' so that we can increase the amount we can hear, sense and be aware of in our environment. Living in a world full of mechanical and electrical noises we have learnt to block off a lot of our hearing and have perhaps lost the ability (or forgotten to remember) to listen more broadly when it is sonically 'safe'. There was one section that had that creepy ET feel to it that was, surprisingly, made by frogs and insects in a Louisianan swamp. He also quotes from Tomatis' work (pg.25);

'Dr. Alfred Tomatis has explored and simulated many sounds that the fetus hears in the prenatal sound world. He contends that the embryo begins to develop ears (meaning the complete hearing apparatus) within a few days of impregnation and completes their growth by the 135th day. In the dark ambience of the womb, floating in amniotic fluid, the fetus hears the sounds of the mother's physiology, her speech and other sounds of the outer world filtered through her body. Many of these sounds have an almost archetypal quality to them that is reminiscent of the sounds of the natural environment or music: The mothers breathing cycle is like ocean surf and her heart beat like distant drums. Her speech sounds like the scratchy texture of an insect chorus and her digestion like the boiling surface of a small stream. These are the basic rhythms that set the pattern for our being in the world. No wonder that many sounds of the forest trigger such rich associations.'

This makes sense to me as I think about the times when I go to nature in order to feel restored. I go because I enjoy the trees whistling in the wind; I enjoy the wind on my face and the sounds of the tall grasses as I walk. Then, when I look out at the ocean or the bay, I feel deeply connected to all that is, that is also living just below the level of our vision. We are connected by years upon years of evolution. Is the enjoyment of the wind on my face some

kind of bone conduction from one element to another, myself - a mixture of elements - or is it its relative, psychic conduction, talking to me, reassuring me, hugging me?

When talking about whales, Dunn points out their frequency range being 'from the giant Blue Whale, who makes sounds as low as twelve cycles per second, to small river dolphins in China and the Amazon, who can make sounds exceeding 200,000 cycles per second' (p.35). Elephants, like whales, communicate infra-sonically at frequencies we term sub-sonic - below human hearing - which is generally termed at hearing 20-20,000hz. When he talks about bats in New Mexico, he cites their echolocation as being as accurate as any visual image, which is exactly how dolphins and whales also locate whatever they are looking for, be it food, predators, or each other. I feel that that is only the beginning of echolocation's capabilities and reason for being. Perhaps it is a gateway into inter-species communication, inter-world's communication. As humans, how difficult would it be for us to bring alive our ability to echolocate, or to simply become aware of the fact that we are already echolocating? Exactly how many senses do we have available to us? In how many dimensions? If we used them, would we find ourselves capable of enjoying the dolphins language or even the trees talking? Is our capacity to communicate limited only by our expectations, our perceptions? We are hearing and listening in terms of the way we choose to use our ability to hear. So what are the senses beyond those based in the physical that we might also enjoy on a daily basis? What is our capacity to communicate? And, why?

Communication is so essential to our lives - without it we can literally die of solitude. We are communal creatures; we belong in a communal universe. We are not alone, we are not separate, we have everything in common with everything from the smallest particle to the even smaller string and the subtle energy bodies that we can astral project with and our geometric shapes and ratios that stem from the music of the spheres.

Ginny Katz puts it beautifully in her book 'Beyond the Light' where she is having the beginning of the Universe's creation shown to her;

'This wave was the breath of God to create new world, Sat Nam explained. The undulating motion was the result of its outflow. Thus, the Word of Clod, or Spirit, flows from the pure, positive, undifferentiated completeness of the God Worlds into the differentiated realms of duality, which we call the lower worlds. During this transition, Spirit also clothes itself in duality. It is divided into two forms which man can apprehend: Sound and Light. This tangible, measurable, manifested Sound and Light sustains and creates the material worlds, with their duality of positive and negative, light and darkness, male and female.

The Sound, the essence of the Word of God, is imbued with a purpose. The Light is dually manifested with the Sound in order to help fulfill that purpose. Encoded within the Sound are complete instructions for the creation of the lower worlds - the testing ground of Soul. The

Light allows the testing ground to be perceived and understood. This, the Light is Soul's link to the Sound.' (p.11)

She also goes on to explain how Light was originally only seven simple colors and Sound had only four basic qualities 'character, substance, rhythm, and magnetism' (p.11).

Thus sound is four dimensional in this example.

I really enjoyed the idea of Sound and Light being God-manifested because I have always had a deep love of visual art and music, whether I am just appreciating it or actually co-creating with it. When I read this excerpt I realize that I am deepening and awakening my connection with All That Is, when I create artistically or musically, or even when I contemplate the nature of our existence from the point of view of physics or metaphysics - that is why it means so much to me. Art and Music are both abstract and spontaneous and yet exist within a framework of natural laws. It is nice to have understanding and revelation around the things that we do and love naturally, to see how they belong in the bigger picture.

When it comes to questions about our origins and our existence, Rum puts it beautifully too. He talks about the pain of our separation from source. While Keller asks the important question around hearing, as to how to explain the depth of soul response to sound versus the simple uric capacity of our beautiful but mechanistic ears in this excerpt from Jocelyn Godwin's book "Music, Mysticism and Magic";

'For what proportion, I ask, can there be between the stimulation of the hearing, a corporeal thing, and that incredible pleasure which harmonic consonances cause us to perceive deep in our innermost selves? If the pleasure arises from the stimulation, does not the organ which sustains the stimulation play the primary role in this pleasure?' (p.151)

Rum contemplates the difficulties inherent with our existence in that we are from beauty in union with a Paradise and yet we have to suffer the forgetfulness that is inherent in the taking of human form and how music is the blessing that brings back our memories of Paradise (also from Jocelyn Godwin's book 'Music, Mysticism and Magic');

'Hence philosophers have said that we received these harmonies from the revolution of the (celestial) sphere, (and that) this (melody) which people sing with Pandore and throat is the sound of the revolutions of the spheres (But) true believers say that the influences of Paradise made very unpleasant sound to be beautiful. We all have been parts of Adam, we have heard those melodies in Paradise. Although the water and earth (of our bodies) have caused a doubt to tall upon us, something of those (melodies) comes (back) to our memory; But since it is mingled with the earth of sorrow, how should this treble and bass give (us) the same delight? When water is mingled with urine and stalings, its temperament is made bitter and acid by the commixture. There is a small quantity of water in this (a man's) body: suppose

it is wine, (yet) it will extinguish a fire, if the water had been defiled, (still) this natural property of it remains, for by its nature it allays the fire of grief. Therefore sama (music) is the food of lovers (of God), since therein is the phantasm of composure (tranquility of mind). From hearing sounds and pipings the mental phantasies gather a (great) strength; nay, they become forms (in the imagination). The fire of love is made keen (inflamed) by melodies, just as the fire of ardour of the man who dropped walnuts (into the water)' (p.90)

He is explaining in his own way why music is so important to us, because it dissolves the boundary between where we came from and who we are. It brings us home, to ourselves in a truly godly, harmony of the spheres, kind of way!

There is a lot more to these subjects that I am explicating there, but one must simply begin somewhere and then choose at different times where the interest truly lies in order to go deeper again. My interest now is in aesthetics i.e. interactions with these wonderful mammals, the dolphins, and also with the whales. But dolphins first!

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