

# Songlines in the City? Hearing the spirit dimension

From the Proceedings of the 2nd Conference on Spirituality, Leadership and Management, 1999

- [Abstract](#)
- [Introduction](#)
- [Biological science, the control paradigm and second-order cybernetics](#)
- [The dimensions of perception](#)
- [Stories of wholeness and the unity of nature](#)
- [Australian Aboriginal knowledge](#)
- [Sound, hearing and voice](#)
- [The musical experience](#)
- [Implications for leadership and management](#)
- [References](#)

## Abstract

Problems of fragmentation and monoculture in human society may be addressed by principles arising from biological science, second-order cybernetics and the experience of singing and music. Research on human perception is changing our understanding of communication and knowledge. This has parallels with the musical knowledge structure of indigenous Australians. Complementing a science of separateness and control is the principle of coherent flow, which has implications for leadership and management. The science of wholeness reconnects with spiritual experience.

## Introduction

There is a rustle of anticipation as the speaker is being introduced. She invites her audience to share a few moments of silence. This may be followed by singing a tone together or even a chant or song. In another room a man and a woman sit, alternately speaking and listening, experiencing a flow of thought and emotion, sound and silence, the stuff of human co-existence. In doing this, the people in each room are connected almost as if a rope was tied between them.

My purpose is to explore the nature of this connection that occurs when we say we are communicating. To do this, I need to speak about the nature of our connection with the entire world in which we live. There are explanations about this and there are experiences. The reason of our abstract explanations complements the feeling of our concrete experience and, in my view, knowing about these matters consists of giving expression to both. I chose singing and toning in the example above because this paper deals with something that I think is most advanced in our aural sense, though it applies to the other senses as well.

This paper is a personal exploration of the way some of the current thinking in biological science and some traditional practice of Australian Aboriginal

people might help us to live together more successfully than we do at present. This implies that all is not well in the actions of our leaders, in the workplace and in our management practices. It also implies that what is missing has to do with a 'spirit dimension.'

So what exactly is the problem I wish to address? Like the Greek god, Janus, it has two faces: fragmentation and monoculture. Our society is fragmented and we feel isolated due to a history of increasing disconnection, but at the same time, there is a craving to eliminate diversity and produce uniformity (a false togetherness). Both these trends are unnatural; both are contrary to biological principles that ensure the continuity of life.

Science is our principal means of taking things apart and cultivating this desire to hone in on the supposedly best part, but I hope that an emerging science of wholeness, which has links with spirituality, may also help to reveal the folly in this.

### **Biological science, the control paradigm and second-order cybernetics**

To examine the nature of our connection with the world and with one another we might look first to the biology of our special senses and ask what it is to hear, smell, touch and see. Conventional biology offers explanations about sensory inputs in the form of bits of information which are processed in certain parts of the brain in a manner that eventually leads to a knowledge of the world stored in cognitive maps and models corresponding to reality. It is essentially described as a serial, linear process (albeit with added layers of complexity such as 'parallel distributed processing' in the brain) in which the component parts can be differentiated and, above all, we remain separate from this external reality. The emphasis is not on our being a part of the world in which we live, but on our being observers of it.

The nature of this explanation reveals some fundamental aspects of the way we explain anything, now that we have become so innocently embedded in our own languaging system. Many biologists believe it was by learning to communicate better with language that we managed to survive and prosper as a species. But, in doing so, we shifted from an awareness of unity with nature toward the attitude of an objective and impartial observer and we came to value rationality over intuition. As the power of our explanations grew we assumed a supremely arrogant position with regard to nature as a whole. Today, many people recognise that this intellectual hubris could also be our undoing.

Words are the way we separate things; it is our language that enables us to divide the unity of nature into component parts. The enormous attraction in doing this is that it makes possible mechanisms of control. Separation and control exist together. Only by knowing which bit does what can we exercise the supposed power that our inflated intellect mistakenly assumes was our birthright. We act as if rationality is what distinguishes us from other animals and the rest of the natural world and gives us an ability to control it. In the sense that a paradigm is a way of thinking, the control paradigm is pre-dominant today.

Probably far fewer women than men have abandoned themselves to rationality and the paradigm of control, but the immediate prospects for changing the dominant paradigm are still bleak. Most sections of our society are addicted to

this way of thinking because of the comforts and security it has brought us. Nevertheless, the spectre of uncertainty is spreading and the veil of illusion about ultimate control is being lifted.

There is one branch of science which, in the last few decades, has been seeing through its own limitations. Cybernetics began in the name of systemic control, but it embraced the circularity issue that was almost taboo and, in its second-order form (von Foerster 1992), has become a basis for the study of human behaviour, making coherence a viable alternative to control.

### **The dimensions of perception**

Returning to the question: what is it to perceive, by hearing or seeing, for example, there is now an opportunity to expand our scientific explanations far beyond conventional biology.

The crux of cybernetical biology is the notion that living systems are structure determined systems (Maturana and Varela 1988). This means that what happens to them is due to their own structure as they undergo a history of connections with the medium in which they live. A certain kind of systemic closure, called autopoiesis, maintains each individual, provided that it, he or she continues to slide in its medium along a path of interactions that conserve its identity. The ability to connect favourably at each moment is the biological mechanism that carries us along our particular path. This entails our perceptive and cognitive process. We have the capacity to know about ourselves through an awareness of our current connections.

We are so busy thinking (in language), as supposedly impartial observers of living, that we are often unaware of this connectedness that sustains our life. From time to time we are aware of our feelings, which seem to be internal, but involving external events. These feelings are a reflection that we make about our emotional state. Our biggest blind spot is not realising that our emotional state, which is shaped by our worldly interactions, also defines the scope and shape of our connections with that world. Maturana's explanations show that the flow of our awareness, that which we say we perceive, is biologically dependent on the flow of our emotions and vice versa. This is the circular nature of the process of living that biological science previously tried to explain as a linear cause and effect. Humans have developed the ability to use reason to hide our emotions and dismiss their importance, but it is evident in biology that the emotions at all times define our rational domain..

This means that the human business of understanding and agreement occurs principally at the emotional level (Fell and Russell 1994). Non-languaging animals probably communicate entirely at the emotional level; that is how we can communicate with other animals. But we often lose ourselves in mind games and condemn emotions as a source of confusion. Our ability to think plays a confidence trick that leads us to believe that it could also solve the very problems it created.

The explanatory idea of autopoiesis has given us a bigger picture of the process of human perception that reveals its essential circularity and closure such that the intertwining of language and emotions is continually updating our being by recreating our links with the world in which we live. To dissect perception into a linear process blinds us to its holistic nature.

## Stories of wholeness and the unity of nature

The idea of wholeness cannot be explained purely in scientific terms; it is best understood through our artistic or poetic sense. Our stories about it are both myth and metaphor. Thomas Berry entreated mathematical cosmologist, Brian Swimme, to write his wonderful creation story, *The Universe is a Green Dragon*, with the words: 'tell the story, but tell it with a feel for its music' (Swimme 1984). In his words we actually see the light from the primeval fireball, feel the universe unfolding and know ourselves as its bright young flame learning to trust in its alluring ways. We are reminded of our proper relationship with the whole - that the cosmos is living and we are a part of its life.

Elisabet Sahtouris (1995) also takes the view that the science which estranged us from nature can now help us to understand, but at the same time she joins Lovelock in expressing the powerful image from early Greek mythology of the goddess, Gaia, swathed in white veils, emerging from the swirling mist of eternity, to dance our living world into existence. She traces the evolution of living systems with scientific elegance and respect for the unity of nature, for the earth as a living organism and for our place in the universe.

No scientist has done more towards explaining wholeness than David Bohm (1983). His re-formulation of quantum theory postulated the existence of an implicate order, hitherto unrecognised in physics, as the source and carrier of the explicate order with which we are familiar. This means that every part is influenced by all other parts and has a distinct identity that is due to its individual history. It is a history of movement, or vibration, resulting from what Bohm called the holomovement - which is in keeping with another of the great poetic myths: that the world 'came into being and continues to come into being through sound' (Purce 1985).

So my story goes that everything is connected in unbroken wholeness; there is no separation. Knowing this oneness would be ultimate knowledge, without description. Even partly knowing it leads to unusual feats such as precognition and telepathy which are barely recognised today. An Aboriginal tracker's uncanny ability is probably more than just keen observation; it is the ability to collapse past and future into the present (grasp the unity) more effectively than most of us can.

For the purposes of our perception, there is a separation of time and space. These are curious concepts, not to be taken too literally. Philosophers and mathematicians still wrestle with them. But, with our limitations, space gives us objects apart from one another and time separates events and gives us a history. We are able to make distinctions beginning with the distinction between unlimited and limited - wholeness and parts. I can say there is an unlimited, but I cannot say anything meaningful about it except to say that which I describe, by making distinctions, is not it.

That aspect of our history which we call our biological evolution helps to explain how we operate as human beings today. An important evolutionary event was the advent of autopoietic organisation whereby the first cells formed a systemic unity - an identity distinguishable from their medium (though still belonging to it). At this point we recognise a form of wholeness now manifest within a part, which we suspect resembles in some way the generality of wholeness.

Individual cells cooperated to eventually form much larger autopoietic (multicellular) beings like ourselves. Sahtouris sees this part of our history as a model for how humans might learn to cooperate better today. This step introduced another level of the systemic relationship between the parts and the whole. The general idea is expressed in Bohm's term, holonomy, which is based on Koestler's concept of each whole thing in nature (or holon) being itself part of a larger whole.

The creators of autopoietic theory were by no means the first scientists to speak about wholeness. Henri Bortoft (1996) has revived interest in the scientific work of Goethe, who searched for an essential unity in the multiplicity of natural forms. Bortoft distinguished between counterfeit and authentic wholes. Science creates a fragmented world which it attempts to integrate into a coherent whole, but the authentic whole is not an integration of the parts and cannot be reduced to parts. The whole is there already and was always there, but we have difficulty recognising it unless we can enlarge our perception.

Bortoft joins others in recognising a holistic mode of consciousness that is fundamentally different from the analytical mode, though complementary to it. Process and relationship cannot be experienced in the analytical mode of consciousness - only the bits show up; the interconnectedness is a shadowy abstraction. Process and relationship are dynamic. There must be a sense of movement before they become manifest. To be aware is like getting on a wave, moving with the movement or achieving coherence, which means moving together.

So it is fundamentally important in my story that the unbroken wholeness is not still. Bohm, a physicist, saw the holomovement as interwoven vibratory energy; Sahtouris described it as Gaia's dance, a flowing movement; Swimme spoke of it as the primeval light we still see coming to us from the galaxies. Australian Aboriginal people tell it as The Dreaming and, traditionally, they told it mostly by singing.

Our history produced our process of perception. Sahtouris described the stage we have reached in evolution as the adolescent stage - brash and egotistical, but with an emerging realisation that we need to consult our elders. She pointed out that indigenous forms of knowledge about natural science are more sophisticated than many scientists realise and older races we regard as primitive may have had greater access to the knowledge of nature herself because (like Sahtouris) they regarded the very earth as our living ancestor.

### **Australian Aboriginal knowledge**

Knowledge in Aboriginal society was equated with 'knowing many songs' (Ellis 1985). In an oral, rather than a written, culture, their wisdom is encompassed in a combination of music and myth. Elkin (1938) was one of the first academics to notice that Aboriginal song and chant cycles were long and connected because they had a mythological-historical basis; they recorded the travels, experience and actions of ancestors. He understood that the 'routes' must be followed and everything of significance sung because 'the past is perpetually and causally related to the present.'

Catherine Ellis (1985) called Aboriginal music their 'education for living.' She considered that, 'for the tribal person, music is an essential part of life, a force

without which his known world crumbles. Learning music is a means of entering the highest reaches of his culture's intellectual and spiritual development.' Even if he or she does not progress through this entire awareness process, the fact that some of their own people do is a great source of security in a world that could be hostile and baffling.

Following Strehlow and others, Ellis considered song to be the most important vehicle of communication in traditional Aboriginal communities. 'Through song the unwritten history of the people and the laws of the community are taught and maintained, the entire physical and spiritual development of the individual is nurtured, the wellbeing of the group is protected, supplies of food and water are ensured through musical communication with spiritual powers, love of homeland is poured out for all to share, illnesses are cured and news is passed from one group to another' (Ellis 1985). Nevertheless, Aboriginal music could be dismissed by early European musicologists as primitive and rudimentary!

Under fully tribal circumstances music is inextricably woven into everyday life - no facet of life is not perpetuated in song and there are no important events that do not have songs associated with them. Men, women and children appear to be equally involved and it is not all serious business; they make songs about the things that amuse them. Elkin remarked on their enjoyment of singing and how much they laughed.

Traditional tribal communities are not prevalent today, but the underlying idea of a singing education and a musical knowledge structure may still be relevant. Song and myth are closely related, being shared semantic systems that provide a structure for living which assists the members of a culture to understand each other and cope with the unknown. Aboriginal song texts are highly metaphorical, containing several levels of meaning including a 'false front' (e.g 'crossing the creek') which is all that can be heard by those not yet privy to the culture (Ellis 1985).

Bruce Chatwin in *The Songlines* (1987) talked about recognition of the invisible tracks of previous experience by Australian Aboriginal people. He related the idea that the Australian landscape did not exist until the Ancestors had sung it on their travels and, even now, has to be named in song to be perceived. A songline is a mapped form of a song, each small sung presentation being located at an identifiable place. Each of the series of small songs also represents consecutive events in the myth. Pitjantjatjara performers speak about *mankara wanani* or 'following the way in song' (Ellis 1985). So the events and places of their history, the separation into time and space and their story of wholeness are contained in an experiential form of knowledge that can be learned, maintained and passed on by singing, rather than by book learning. This history is what determines a person's process of perception, or view of the world, his or her identity and behaviour. The intellectual ways of our non-Aboriginal culture, where what we study is kept separate from who we are and where we've been, may not be sophisticated enough to guide us properly. Are we so different from Australian Aborigines that we can rely on an ahistorical, objective, knowledge, when our human process of living is also essentially mythological and historical?

Cultural differences are to be respected, not conflated, yet there is much to be gained from learning about other cultures. By listening to another person's story with respect for the differences, one often sees the deeper similarities,

and learns something of relevance to one's own unique way of living. How are we to re-learn an awareness of the whole that we seem to have lost as our language and science evolved? One possible avenue is to recognise that our sense of movement and our sense of holonomy are manifest in the sounds we hear and make.

### **Sound, hearing and voice**

Both intuitively and scientifically, we know that sound requires movement. We sometimes become aware of movement through seeing or touching it as the wind rustles the leaves or our hair, but mostly it is invisible and untouchable.

Unlike other physical phenomena such as light, sound can be explained in simple, commonsense, terms, which helps to bring science closer to everyday experience. It is easy to appreciate that we actually generate sound and our bodies produce the most complex of all sounds. There are qualities of the human voice that, even today, cannot be represented accurately enough in physical terms to artificially reproduce them. Regrettably, we have tended to neglect and abuse our sense of hearing by exposure to industrial noise and loud music and I doubt that we have valued it as highly as our sight. It is possible we have entirely lost a particular ability to 'hear' that some indigenous people possessed.

To lose hearing is a profoundly isolating experience. There is medical evidence that hearing loss cannot be compensated by other senses to the same extent as occurs with loss of sight (Zuckermandl 1969). The feeling of separation or disconnection is probably best understood by the deaf. More mystical writers than I have said there are things that we can only hear - that can't be seen. Yehudi Menuin believed that 'the magic of listening brings us closer to the core of the universe. . . it is not sufficient to touch and to see - we need to hear, to listen, and thus to unite heart, mind and soul.' He feared we had become a deaf people (Berendt 1988).

Jill Purce (1985), an inspiring advocate for 'the healing voice,' also said that we have stopped singing. People used to sing as they worked, some cultures believing the voice did the work. As music became more elitist, more people chose just to listen and then the TV culture brought an even more passive style to our process of perception and awareness. It seems that groups of people still want to sing (e.g. at football matches), but there is little encouragement to express and hear the unique vocal qualities that each of us possesses. Singing remains a principal form of praising God, but fewer Western people practice it.

Ravi Shankar espoused a tradition that 'sound is God - Nada Brahma' and his music was aimed at 'revealing the essence of the universe it reflects' (Berendt 1988). Berendt believed that the dominance of seeing in our culture has de-spiritualised our existence. He thought that by listening we gain knowledge and find connections which are inaccessible to sight (like 'hearing the river' in Zen meditation) and he related that Krishnamurti and Bohm, in conversation, called the holomovement, 'total listening.' There is a story that when Hildegard of Bingen in the 10th century was told she could say the offices, but not sing them, this was regarded as the most severe of punishments (Purce 1985).

The explanation of sound is in terms of a simple wave motion in an elastic medium such as air or water where the medium is alternately compressed and rarefied, like the air beneath the wings of a bee, for example. It is a mechanical vibration. No stream of air travels from sound source to receiver, of course; it is a wave field which can be visualised like a weather map where points of equal barometric pressure are connected by a series of lines. Sounds normally consist of different wave patterns interacting and producing new vibrations. One vibrating body can create vibration in another body - a phenomenon known as resonance.

Purce related the work of Hans Jenny, a Swiss engineer and doctor with an interest in Steiner's philosophy, who demonstrated to her what happens in different forms of matter (liquids, powders) when they are exposed to sound vibration. Exquisite patterns that are found in nature were produced by different sounds. It was then she felt she understood why both Eastern and Western mystical traditions considered sound to be a great force.

Many other animals communicate by sound, of course, including Cetaceans that use sonar. Simply being exposed to sound vibrations does not automatically mean that we hear - it depends on our awareness. Research showed that no sound is registered by nerves leading in from the ear to the brain if the subject is completely naïve to that situation and also that nerves leading out from the brain to the ear (and eye) are instrumental in determining what can or cannot be sensed (Järvilehto 1999). It is not only children who sometimes do not hear what they are told.

Nor is it the supposed information input from the sound that is most important. It is the emotional ramifications of the link between the sound source and the hearing. Sound waves resonate within our body cavities, including our skull. To use the voice is to experience resonance; the only way to consciously resonate is through the voice. Purce employs the resonating effects of Mongolian overtone chanting in her healing workshops.

The wave fields we create interact with those to which we are exposed. If there is not adverse interference, a new wave field may be sustained, creating a coherent flow of your movement and mine. It is an emotional manifestation akin to the experience of music.

### **The musical experience**

Music has more to do with emotion than with rationality. The theme of the final movement of Beethoven's 9th Symphony looks simple in musical notation, yet when played or sung, has an effect for many in our culture that is described as 'deeply moving.' Whereas visual images are said to represent things in the real world, music seems to represent something immaterial that suggests movement. All other artistic forms do too, but it is not always so obvious.

A series of tones that forms a melody is more than just a collection of sounds when perceived by a listener who is not completely naïve to that form of music. A melody has a flow of meaning. From the beginning it appears to be heading somewhere, may emphasise something along the way, often builds to a climax and usually resolves itself in a satisfying manner such that the listener knows the end has been reached. This dynamic quality has to do with the relations between tones, rather than individual tones and can be described

in terms of musical scales and cadence. We perceive it as a force or motion in which we are involved - something that moves in us is connected to something else that moves.

The description of our world in visible and tangible terms allows us to characterise an outer world of objects, whereas the existence of music takes us beyond the tangible and visible. What we hear in music cannot be seen or touched, is neither separately evident in the external world nor completely a product of our imagination. It blurs the distinction between inner and outer and provides an experience of the connection between them. Its meaning lies not in what it points to and is separate from, but in the pointing itself. A parallel for this is the religious symbolism whereby the body and blood of Christ are said to be 'in the bread and the wine' and apprehended as such by the believer (Zuckermandl 1969).

Songs and singing are a combination of words and melody - that which separates and that which draws together. Zuckermandl regarded folk songs and chanting as the most fundamental forms of music because they blend word and tone to integrate our rational and emotional aspects. Purce claimed that using the voice and listening to the sound at the same time enables us to 'go beyond the dualism of language and separation from the world.'

Jaynes (1990) developed a provocative explanation that consciousness actually originated in 'the breakdown of the bicameral mind' which refers to a stage in the evolution of the human brain when the two hemispheres performed distinctly different functions. One side, usually the right hemisphere, produced voices, which directed the other side that controlled speech and conscious thoughts. These were interpreted as voices of the Gods and only as their influence waned did the human responsibility of decision making and reflection that we know as consciousness develop. He argued that the vestiges of this are evident today in the considerable number of people who do hear voices at certain times, in schizophrenia and in the 'quest for authorisation' which manifests itself in both religion and science today.

It is widely accepted that brain function is lateralised in that the so-called dominant hemisphere mainly controls speech and rational, linear, thought whereas the other hemisphere is more concerned with creativity, intuition, holistic perception and music. Many anthropologists think that song came before speech in our evolution and Jaynes reviewed evidence that very early poetry (and the voices of the bicameral mind) were invariably sung. There is good evidence that singing requires the opposite brain hemisphere to speaking and that listening to music is also highly lateralised. People with brain lesions that prevent speech can often sing. Jaynes argued that the experience of music is a vestigial operation of the bicameral mind therefore stemming from our historical belief in the sacred Muses.

Musical performance often occurs in groups, sometimes in an improvisatory manner. Improvisation in musical performance has been described as not so much a skill to be developed as 'the unlearning of habitual patterns of non-awareness and disconnectedness' (Borgo 1997). The skill of music improvisation is an apt metaphor for the awareness of holonomy in everyday living.

Menuhin (1998) talked about his experience of learning to play improvisation and how it represented an extraordinary freedom of the kind which also implies discipline. Only if you have a clear sense of the 'larger holon' can you

be liberated to express your individuality and creativity in extemporaneous playing. He thought it was a wonderful way of learning what freedom is for the individual within a larger system. If the larger system didn't exist the individual would not be able to keep playing. So genuine freedom is that sense of what is required to hold the larger system together which, paradoxically, also provides the room to move for the individual.

### **Implications for leadership and management**

Like most people in our culture, many leaders and managers crave to control. Achieving control is intended to exert a personal influence, reduce uncertainty, enable predictions to be made and, most of all, make one feel less like a tiny bit of flotsam on the ocean. But does it really work? The higher up in an organisation one is, the more limited one's options may be. You can close a factory or open a new one, but achieving subtle changes in the way work is carried out, for example, may be much more difficult.

I suggest that, when we are not frightened or insecure, what we are really seeking is coherence rather than control. To know that we are moving together in a concerted fashion or travelling together on a common path can provide greater reassurance than the thought of being in control. It is different, however, in that it requires a substantial trust in holonomy and coherent flow and a respect for the historical uniqueness of our fellow human beings.

I have tried to show that control of one part by another is a dubious concept in a biologically holonomic world of complex, interacting, vibrations. The very idea of one part influencing another without regard for the greater whole is probably peculiar to our human consciousness. Is it any wonder, then, that we feel disconnected? Trust and confidence are essential for making connections. Faith in the system enables us to interact freely. Without this we find ourselves becoming isolated, in a rut, all doing much the same thing.

We can't suddenly give up our desire to control, nor do we need to surrender the more worthwhile achievements of our ingenious science, but we can loosen our grip on the supposedly mechanistic control of nature.

In leadership and management, as in living, there is the potential to realise our connectedness. Sustained co-movement is a true connection; the idea of connection implies flowing together, not standing still. We are coherent with respect to one another when we are moving together. Thus, we do not merge, nor give or take anything from one another. Your identity and mine must be maintained if we are to know what travelling together is like. I cannot specify that a connection will take place, but I can be available and be aware that this may happen. To be coherent with respect to all of nature means going beyond our rational domain.

Relying on the rational seduces us into a false sense of security and order which, though it can be useful, is a trap. The separated world is not the reality that we intuitively know because our perception is holistic. The mythological-historical, autopoietic, nature of our biological process implies that there is a spirit dimension to our perception. The state of our society indicates that we are a bit 'rusty' about how this works in daily living.

Indigenous people seemed to be connected and their oral, singing, culture seemed to facilitate this. They had songlines to guide their intuitive decision making - the flow of their desires - in a genuinely sustainable manner. They

had a spirit dimension to their perception. Just because we mostly live, work and play amongst big city buildings and use electronic machines surely does not preclude us from also having an intuitive knowledge of where we are going, how we fit together, what carries us along in a world that we often say is out of control. It only seems out of control if we lose the ability to travel with it, to be guided by it and by one another. The spirit dimension of our living exists regardless of our concrete and steel structures, although they may seem to conceal it if we worship technology as our saving grace.

By ignoring the spirit dimension we strive for technological solutions to what are essentially emotional problems in the world today. Our future will depend, not on our technological ability, but on our ability to take responsibility for the flow of our emotions, through an awareness of our flowing connections. There is only room in this paper to outline the principles upon which the practical means can be developed.

Singing together is a metaphor for all the ways of expressing our biological autonomy with holonomic integrity. We need to be with one another and with the land itself to do this. Taking responsibility for our desires is represented by singing from the heart with an awareness of our own distinctive voice and the chorus of which it is a part. If we are all silent in our separateness, no one can hear what is happening. It is as if our fear and mistrust grew from not singing. One way or another, open hearts sing.

I am not privy to any particular Aboriginal songlines, but, in my experience of leadership and management, I try to cultivate this idea and listen for them, because I know the spirit dimension can be heard.

## References

- Berendt, J-E. (1988) *The Third Ear: on listening to the world*. Element Books, Shaftesbury, England.
- Borgo, D. (1997) *Musical improvisation as embodied reflection*. [http://www.ethnomusic.ucla.edu/ethnomusicology/Ethno\\_Students/David\\_Borgo/](http://www.ethnomusic.ucla.edu/ethnomusicology/Ethno_Students/David_Borgo/)
- Bohm, D. (1983) *Wholeness and the Implicate Order*. Ark Paperbacks, London, England.
- Bortoft, H. (1996) *The Wholeness of Nature: Goethe's way toward a science of conscious participation in nature*. Lindisfarne Press, New York, USA.
- Chatwin, B. (1987) *The Songlines*. Pan Books, London, England.
- Elkin, A.P. (1938/1974) *The Australian Aborigines*. Angus and Robertson, Sydney, Australia.
- Ellis, C.J. (1985) *Aboriginal Music: education for living*. University of Queensland Press, St. Lucia, Australia.
- Fell, L.R. and Russell, D.B. (1994) *Towards a biological explanation of human understanding*. *Cybernetics and Human Knowing* 2: (4) 3-15.
- Foerster, H. von (1992), *Ethics and second-order cybernetics*. *Cybernetics & Human Knowing* 1: (1) 9-19.
- Järvillehto T. (1999) *The theory of the organism-environment system: 3. Role of efferent influences on receptors in the formation of knowledge*. *Integrative Physiological and Behavioural Science* 34, 2.
- Jaynes, J. (1990) *The Origin of Consciousness in the Breakdown of the Bicameral Mind*. Penguin Books, Harmondsworth, England.

Maturana, H.R. and Varela, F.J. (1988) *The Tree of Knowledge: the biological roots of human understanding*. New Science Library, Shambhala Publications: Boston, USA.

Menuhin, Y. (1998) Radio interview with Margaret Throsby. Australian Broadcasting Commission, Ultimo, NSW, Australia.

Purce, J. (1985) *Sound in mind and body*. <http://www.jillpurce.com/>

Sahtouris, E. (1995) *Earthdance: Living Systems in Evolution*

<http://www.ratical.org/LifeWeb/Erthdnce.html>

Swimme, B. (1984) *The Universe is a Green Dragon*. Bear and Co., Santa Fe, NM, USA.

Zuckerandl, V. (1969) *Sound and Symbol: music and the external world*. (Trans. W.R. Trask). Princeton University Press, Princeton, USA.

*Lloyd Fell September 1999*