
17 Calibrating the Body

Embodied Research Strategies for Attuning to Subtle Information

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Our hope, says philosopher David Abram, is to reinvigorate the language of the body, learn to let our muscles, sinews, blood, and bones sing again in harmony with the wild chorus of the land, sea, and air—to feel again the pulse of natural kinship. We need to open the vital channels between our words—even our written words—our bodies, and the articulate flesh of the world. We need to feel and respond to the deep intelligence of the matter of the planet and cosmos from which we are born. We need to pay attention to the stirrings of mind in matter, to the symphony of universal meaning—to the deep narrative of matter itself.

(de Quincey, 2002: 104, ital. in original).

CONNECTING WITH THE OTHER-THAN-HUMAN

This chapter proposes ways to sensitise and educate the body to perceive intangible aspects of the natural world. It shows how we can recognise and interact with the deep intelligence and narratives of matter all around us. My journey of understanding the body as an antenna is informed by four strands of study: the general disciplines of consciousness studies and shamanic techniques, and two more specific approaches of *ECOintention* and *Movement Medicine*. Each of these (which are briefly introduced below) have ways of addressing and exploring the intricate connections between matter (particles), energy (waves) and consciousness (information): aspects that feature strongly in the relatively young field of quantum agriculture, or quantum-informed agriculture (Q(I)A), which builds on traditional models of agriculture, including, yet going beyond, matter and particles (soil management, chemical compounds, food production). Waves, in the form of sound and other electromagnetic techniques, for example, are being used for increasing crop production, or managing

disease in cattle. Q(IA) also recognises the information derived through, for example, farmers' intuition, animal communication and nature constellations (Kieft, 2019; Lovel, 2014).

ECOintention offers an approach to monitor and increase the health of trees, gardens and forests. This method was designed by biologist Hans Andeweg and X-ray lab technician Rijk Bols (Andeweg, 2009). Between 2003 and 2005, I learned about such energetic techniques to assess, balance and optimise natural systems.¹ The theoretical framework of this approach is that health consists of a combination of matter (the optimal amount of water, sunlight, balanced animal populations and so on), its energetic frequency (resonance or vitality) and the degree of congruency of a system or how well it is adapted to its circumstances and integrated with its surroundings. *ECOintention* combines working on levels of particles, energy and information. This is done through setting a clear intention,² using pre-defined measurement scales, understanding subtle changes within one's own body and finally communicating them with others. A large part of this method consists of learning to read and interpret one's body's physical responses to the focus of inquiry. The body is the instrument through which information is received. Although personal responses are subjective, i.e. unique to the person, the use of pre-defined measurement scales ensures a calibration of outcomes, so from subjective data the observations become *intersubjective*.

In May 2005, I attended *Soul in Nature*, a 3-week residential and immersive course at Schumacher College, Devon, UK, featuring three well-known teachers. Investigating the connection between mind and matter, one of the teachers, Christian de Quincey, posited consciousness as the missing link, present within every bit of matter beyond even the smallest atom. He argues that matter is tangibly located somewhere in space (particles) and that energy spreads out through space (waves), whereas consciousness, the third phenomenon, is 'the process of matter-energy informing itself' (de Quincey, 2002: 59). His work helped me to understand the connection with nature from a more theoretical angle, using the three main elements of Q(IA): particles, energy and information.

Teaching on the same course, Jonathan Horwitz introduced me to shamanic techniques to interact with other-than-human-beings³ in the natural world. I have continued to study with him ever since. In an animist view, everything is imbued with an energetic quality, life force or 'spirit essence'.⁴ This includes stones and minerals; plants, trees and animals; natural features such as mountains or oceans; and the four elements of earth, water, fire and air. Through techniques of rhythmic drumming to expand our consciousness, it becomes possible to contact and interact with those qualities. As in *ECOintention*, the underlying aim of shamanic practices is to increase balance within systems, individuals and communities, again, guided by a strong intention (Kieft, 2018, 2020).

Finally, *Movement Medicine*, a contemporary shamanic dance practice, features (mostly) improvised movement as a deeply embodied activity to (re)connect with the world around us. Inspired by spatial practices such as medicine wheels and mandalas as energetic representations of meditative focus, as well as family constellation theory (Cohen, 2006; Whittington, 2016), Movement Medicine facilitates dancing 'with', 'in relation to' and 'as' any type of being imaginable. This can include physical plants and animals, but also natural systems such as rainforests and oceans, as well

¹ *ECOintention* was originally called *ECOtherapy*. Developed in the early 1990s, this method has since been successfully adapted and applied to other systems such as schools, theatres and businesses. See https://www.ecointention.com/index_e.htm. Ubiquity University now offers an MSc degree in ECOIntention, <https://www.ubiquityuniversity.org/courses/m-sc-master-of-science-in-ecointention/> accessed: March 3rd 2021.

² Setting an intention is done by clarifying the focus of a particular inquiry. This can be compared to picking up the phone and dialling a specific number: who are you going to 'talk' to? Are you 'tuning in' to a tree, a plot of land, a food item? This clarity helps to zoom in on and interpret clues cleanly while not being distracted by interference of other information.

³ For a discussion of the term 'other-than-human-beings', see Harvey (2003, 2014). Other disciplines work with related concepts such as archetypes (in psychology), memes as independent and self-replicating units that transmit cultural ideas and behavioural patterns (in cultural studies), and morphic field resonance (in biology). They each address an energetic quality or imprint of concrete and/or intangible phenomena.

⁴ Spirit itself is a difficult concept to define. The original Latin connotation of spirit includes 'breath, life, wind, awe, mystery, and invisibility', and early philosophers such as Plato and Augustine referred to it (Morris, 2006: 15). Horwitz uses a description of spirits as "bundles of the energy of the universe, [that] appear to people in forms that they can recognise" (quote from interview in E. Kieft, 2020).

as archetypal and spirit essences. Such practices enable us to learn from and be inspired by ‘the other’, and also help give them ‘expression’ and ‘agency’ through our physicality (Darling Khan, S. and Darling Khan, Y. A., 2009; Kieft, 2013, 2014, 2017a).

My understanding of the potential of dance and shamanic practice as alternative ways of knowing is informed by these four strands, which are both intellectual and experiential. From a positivist research perspective, this intertwining of personal and professional understanding may raise some methodological questions. In the arts and humanities however, approaches such as ethnography (Madden, 2017; Pink, 2015), Practice as Research (Nelson, 2013; Spatz, 2015) and Embodied Inquiry (Snowber, 2016; Todres, 2007) recognise that any knowledge produced is always a result of entanglements not only within the research itself, but also between the researcher and her practice. Neither of these can be seen as independent, but rather, they are ‘ontologically and epistemologically bound’ (Naccarato, 2018: 436). Indeed, they emerge and become together, not unlike the aspects of our quantum universe: particles, waves and information. Addressing ways of knowing outside our western models of knowledge creation requires a reassessment of ontology and epistemology, as well as pedagogies for experiential learning and ways to ‘validate’ such intersubjective learning experiences.⁵

This chapter continues with four parts. The first argues that intangible information exists all around us and is accessible by and through the human body. I specifically introduce panpsychism as a cosmology that recognises degrees of consciousness within matter, mostly guided by the work of Christian de Quincey and Rupert Sheldrake. The second examines the possibilities of connecting with that information and consciousness as part of our innate human abilities. Here, I briefly discuss the work of Gregory Bateson, Tim Ingold and David Bohm on the relationship between body and environment. The third describes some ingredients and prerequisites for ontology and epistemology that are supported by (subjective) experience and immersion. Here, I draw on the writings of Les Todres and Christian de Quincey. The final section offers a practical approach for reawakening a multi-levelled literacy that includes body, heart, mind, consciousness, intuition, movement and nature.

INFORMATION EXISTS ALL AROUND US

Questions regarding the nature of reality and how we relate to it feature in most cultures, and there are striking parallels between science and indigenous knowledge. Anthropologist Jeremy Narby (1999 [1995]) describes the overlap between ancient (shamanic) cosmologies and recent discoveries in quantum physics. A wide variety of disciplines, including philosophy, psychology, biology, electromagnetics and quantum physics, address phenomena such as information, consciousness and spirit, and many theories seek to explain deeply intertwined connections within and across the universe. Some examples are Bohm’s implicate order, Laszlo’s Akashic fields, Jung and Pauli’s synchronicity and collective unconscious, Capra’s tao of physics, Sheldrake’s morphic fields, Wilber’s integral theory and Lovelock’s Gaia hypothesis (Ferrer, 2015; Hardy, 2015; Schäfer, 2008).⁶

For example, Rupert Sheldrake proposed a theory of morphic fields that hold information relevant to a specific species or phenomenon. These morphic fields ‘are not confined to the brain, or even to the body, but extend beyond it into the environment, linking the body to the surroundings in which it acts’ (Sheldrake, 1988: 198). Information is a pattern of coherence that exists in form. Trees, for example, hold information about their growth and survival needs, but also about seasonal and weather patterns. With the right access or means, and through various forms of intelligence,⁷

⁵ For further methodological reflections on intersubjectivity, see Kieft (2020).

⁶ In *The Field: A quest for this apparent secret force of the universe*, Lynne McTaggart attempts to unify several of these theories by means of popular science journalism (McTaggart, 2001).

⁷ Intelligence is the degree to which individuals (of all manners of species) make coherent sense of, and apply, the information that they have access to. In terms of human intelligence, Howard Gardner proposed a theory of seven different types of intelligence, including logico-mathematical, linguistic, musical, spatial, bodily kinaesthetic, intrapersonal and interpersonal intelligences (Gardner, 1983). Except for the first two, the other forms allude to a concrete interaction between body and surroundings.

information can be deciphered and contribute to knowledge. That deciphering can happen between species and other natural phenomena, for example when animals anticipate specific natural events before they actually happen. Just as learning to read helps us to decipher the meaning of letters on a page, we can learn to read subtle information in other forms.

Yet, how can we derive information from sources with which we cannot communicate in the traditional (verbal or written) sense? Panpsychism⁸ is an ontological theory that considers everything in the universe as having ‘an interior, subjective reality’ (de Quincey, 2002: 105). Just as animism recognises soul or life force within phenomena, panpsychism speaks of consciousness or mind (Larson, 2014). Such views were described by early western philosophers⁹ but can be traced much further back to pre-philosophical cosmologies. They also still feature in contemporary (animistic and pantheistic) cosmologies that incorporate shamanic techniques (de Quincey, 2002: 105: 110–26).

Referring back to de Quincey’s view of consciousness as the missing link between matter and energy, we can consider consciousness as the functional, mental state of access beyond our bodily boundaries (Van Gulick, 2018), and also as being inherent in other beings and phenomena. This implies that techniques of expanded consciousness can be a way to communicate with other-than-human-beings without necessarily sharing the same (or any) capacity for language.

BROADCASTING BETWEEN BODY AND ENVIRONMENT

Many cultures see body and environment as inseparable, interrelated and continuous. Case studies show that body and self, person and environment and past and present are interconnected (Grau, 2005). Coding and transmitting meaning is a crucial topic within anthropology. This happens both within and outside of the body, and these internal and external pathways are not separate. Indeed, ‘the mental world—the mind—the world of information processing—is not limited by the skin’ (Bateson, 1972: 460). Quantum physicist David Bohm also explored the interconnection of body and environment (Bohm, 1985). His concept of ‘soma significance’ describes how meaning arises both through physical responses (adrenalin flow, increased heart rate and blood pressure, pain and other nervous system responses) and through external sound waves, gestures, textual objects and technology. Indeed, this links up ‘the whole of society in one vast web of soma-significant and signa-somatic activity’ (Bohm, 1985: 78). Our material environment is then a ‘somatic result’ of the (ever-changing) meaning we attribute to objects. Meaning is not static, fixed or complete, but rather a structure that constantly extends and actualises, accommodating flexibly for the movement of ongoing, unfolding meaning (Bohm, 1985: 79–82).

This structure bears strong resemblance with anthropologist Tim Ingold’s ‘meshwork’, a field of relational involvement in the world in which relation does not ‘happen’ between two phenomena, but exists as a ‘trail of movement or growth... *along* which life is lived’ (Ingold, 2011: 69, ital. in original). While relations in a *network* imply two, previously ‘separate’, elements and an existence of some kind prior to integration into the network, in a meshwork ‘things *are* their relations’ (Ingold, 2011: 70, ital. in original), through multiple trails, pathways and interwoven lines. Ingold questions whether ‘what we have been accustomed to calling “the environment” might not be better envisaged as a domain of entanglement. It is within such a tangle of interlaced trails, continually ravelling here and unravelling there, that beings grow or ‘issue forth’ along the lines of their relationships’ (ibid: 71).

Important for this argument, Ingold incorporates animacy into his theory, not as ‘projected *onto* objects’ by human persons, nor as ‘the result of an infusion of spirit into substance, or of agency into materiality, but (...) ontologically prior to their differentiation’ (2011: 68, ital. in original).

⁸ From Greek: ‘*pan* means all, and *psyche* means soul or mind’ (Sheldrake, 2017: 84–85, ital. in original).

⁹ De Quincey refers to Pythagoras’ mathematical-material forms, Plato’s substance-Form and Aristotle’s hylomorphic matter-form, as attempts to understand underlying ‘unlimited’, ‘immortal’ or ‘spark’ essence that shapes a material manifestation of form (de Quincey, 2002: 112, capitalisation in original). Earlier philosophers include Thales, Anaximander and Anaximenes (ibid: 110–111).

In this view, animacy is a given, innate, quality existing ‘as one’ with its object or being. This leads to understanding a lifeworld as an ‘entire field of relations within which beings of all kinds, more or less person-like or thing-like, continually and reciprocally bring one another into existence’ (ibid: 68).

Both Bohm and Ingold underline relationality, fluidity, changeability and the primacy of movement as foundational to our understanding of that which surrounds us. Such understanding challenges the assumptions and procedures of science within the western tradition, which developed on the merits of separation, through distancing researchers and ‘objects’ and aiming for control, predictability and repeatability (Kieft, 2018, see also Ingold, 2011: 75). We will look at this more closely in the next section.

OPENING UP TO DIFFERENT WAYS OF KNOWING AND LEARNING

When we recognise that western ontology, which advocates the separation between body and environment, is no longer tenable, our epistemology or ways of knowing need to change accordingly. ‘Knowing’ is no longer a process that happens separately from the environment, but something that emerges from interconnection. Knowing and being become fused. Our being, or the ‘essence of the knower’, blends ‘with “that being known”’, a process of ‘radical knowing’ that also transforms the knower (de Quincey, 2002: 124).¹⁰ Since, like all matter, our whole body is pervaded by consciousness, de Quincey proposes ‘somatic feeling’ as an alternative epistemology, which can be practised by paying attention to the body ‘as it interacts with the world’ (de Quincey, 2002: 145).

Les Todres, a philosophically oriented psychologist and researcher, also underlines the role of feelings in the process of understanding. Drawing from the work of Dilthey and Heidegger on emotional atmosphere, Todres describes how our (apparently reflective and abstract) understanding is never neutral, but is always preceded by ‘how we are in relation to things in a prereflective and unthematized manner’ (Todres, 2007: 10). Hence, our emotional texture and mood form a background quality that always informs our knowing.

Feeling is determinedly not separate from the rest of our experience, including sensorial information, reason, consciousness and intuition. De Quincey describes intuition as ‘a gift of grace’, coming from ‘somewhere else’ through ‘a different shaft of knowing’ (de Quincey, 2002: 145). This means negotiating the channels that connect us to external, more mystical sources of knowing and not knowing, a state of paradox-consciousness that can be reached, among other things, through silence and meditation. Rudolf Steiner (1861–1925; a mystic, philosopher and scientist who also founded biodynamic farming) considered intuition as a result of the meeting between imagination (from within us) and inspiration (from the outer world and spiritual plane).

These are but a few authors who describe the role of feelings and intuition for accessing other shafts of, or paths to, wisdom. Although this sometimes happens spontaneously, during an experience of ‘flow’ (Czikszentmihalyi, 1975) or peak experience (Maslow, 1994), many spiritual and meditative practices offer structured approaches to increase the possibility of connecting to such shafts of wisdom. Whatever the tradition or background, each practice provides a method or procedure that involves careful preparation, a clearly formulated intention and full focus, a change of time–space perception and often a clear invitation for ‘otherness’ to come through.¹¹ Dance practices worldwide also offer a path to transcend the ordinary and communicate with other dimensions of reality (Hume, 2007: 68, 75).

¹⁰ ‘Radical knowing’ combines (at least) four different approaches to, or gifts of, knowledge. The philosopher’s gift is based in reason and clear thinking; the scientist’s gift in the senses, observation and method; the shaman’s gift in participatory feeling; and the mystic’s gift in direct experience. Simultaneously, they address the levels of mind, body, soul and spirit (de Quincey, 2005: 221–243).

¹¹ In this respect, de Quincey proposes the POR method (Procedure, Observation, Report), for a radical science that can process *any* type of inquiry, including more subjective insights gained through experiences of meditation or shamanic journeying (de Quincey, 2005: 138, ital. in original).

Whatever the nature of the practice (including transcendental and out-of-body experiences), the body is always the point of departure as well as return and integration after such experiences (Kieft, 2017b). Creating a literacy of body, heart and consciousness therefore seems essential to fine-tune our ‘antennae’ to other sources of information around us. Elsewhere (Kieft, 2018) I address the necessity of moving towards a multi-levelled literacy that includes, yet goes beyond, reason and cognition and addresses the following: (1) embodied approaches to increase perception; (2) abilities to skilfully navigate emotions and feelings; and (3) expanded mental capacities to include imagination and intuition and create space for the soul. These suggestions are not intended to undermine or replace, but rather to *complement* positivist methodologies towards a more inclusive and holistic approach to knowledge. To reach such multi-level literacy requires multi-level learning and pedagogy as well, which I address in the next section.

CALIBRATING THE BODY AS INSTRUMENT: TOWARDS MULTI-LEVELLED LITERACY

So far we have looked at the deep intertwinement and inseparability of mind and body, and the need to widen our epistemology. We saw that perception and insight can arise through different channels. In addition to mental and cognitive abilities (often referred to as ‘intellectual’, left-brain abilities), understanding is cultivated through sensorial body awareness, emotional feeling qualities, and intuitive, meditative and expanded states of consciousness. These different channels mutually affect each other.

This final section offers simple and practical ways to nurture and develop multi-levelled literacy, in order to increase awareness and perception and open ourselves up to alternative avenues of knowing. These practical invitations (in italics, below) emerge from my experience and practice as dancer and dance facilitator. Like a Russian doll, calibrating the body as instrument includes all these different levels: the body is home to the heart and the mind, as well as an anchor within a larger stream of consciousness. As previously discussed, many disciplines offer approaches to deepen these suggestions, including, but not limited to, *ECOintention*, shamanic practice, *Movement Medicine* and meditation.

DEEPER FAMILIARISATION WITH THE BODY

In order to value our body as instrument, we first need to address our relationship with it. This is not always easy. Our body-sense might be compromised through stress, lack of self-confidence, chronic pain, traumatic experience or (mental) illness. However, despite such challenges, our body remains a miracle of intricate connections, balance and perception.

Pause for a moment to consider this. Acknowledge your breathing and the capacity of your lungs to provide you with oxygen. Feel the pulse of your heart, pumping precious lifeblood through all your body. Imagine your organs and digestive system at this very moment being busy extracting nutrients from your food to provide you with energy. Look at your hands, and think of all the amazing tasks your hands can perform. Acknowledge the range of emotions that come with being human. Realise what a unique experience your life is, and what a unique being you are. Keep breathing.

The more familiar we are with the processes and states within the physicality of our body, the more we are able to discern what arises independently. By monitoring subtle states and shifts inside ourselves, we become more adept at noticing changes in the world around us. This will foster interaction with the ‘other-than-human’.

Pay attention to the processes and states of your body. Notice your breathing, and whether it is shallow, deep, high or low in the chest. Is your heart beating slowly, or fast? How are your energy levels right now? Are you awake, energetic, tired? Does this vary during the day, or after meals? How is your digestive system? Your body temperature? Are you more aware of your upper or lower

body? Is something physically uncomfortable distracting you? Do you perceive any tight or sore spots anywhere? Can you describe your current bodily experience with one 'quality adjective' (e.g. relaxed, cold, tingly, taut, soft, foggy and centred – be aware of not yet crossing from physical sensations to emotional qualities, stay with a descriptor rather than an interpretation of it).

It would not be surprising if, during the above exploration, the last invitation was difficult. Concrete physiological feedback of our bodily functions is strongly intertwined with our perception of that feedback. In neuroscience, this phenomenon is called 'interoception' (interior perception). Physical sensations play an important part in our moods, emotions, behaviour and sense of well-being – including gut feelings and heartache (Cameron and Hamilton, 2002; Wiens, 2005). Becoming even more familiar with these interconnections further enables us to discern shifts and fluctuations around us.

Zoom in on one quality from your previous inquiry, and observe any interpretations, judgments, feelings or emotions related to it. You might notice a sense of familiarity and recognition ('I always feel like this after lunch') or a new internal awareness ('wow, I haven't noticed that before'). Observe if it has to do with the state of your body (pleasant or unpleasant), or with what you are doing (engaging or boring). Is it a state you are comfortable with, or want to 'move away from'? Try, however, to accept and receive it as it is, without changing anything. There is no right or wrong. There also does not have to be a concrete outcome. Just try to follow the interrelationships between your physical sensations and your mental and emotional state. You might, for example, perceive coldness in your hands and feet, a slow digestive system and perhaps a lack of concentration or disinterest in what you are doing.¹²

TERRITORY OF THE HEART AND EMOTIONAL LITERACY

I use the term 'emotional literacy' for the ability to navigate feelings and emotions without 'drowning' in them, 'acting them out' or projecting them onto others. It requires skill to hold the wildness and tenderness of our heart without numbing, ignoring or unhelpfully amplifying its voice. Usually, this literacy matures with conscious attention to personal growth and/or spiritual practice. However, there are a few specific ingredients to consider that are largely ignored in western education. Four are briefly explored here.

First of all, emotional literacy includes not only the acceptance of uncertainty and not knowing, but also acknowledging such states and experiences as fertile and creative. Although it takes courage to enter the unknown, this is the place where we expand our knowledge (see also Ellis, 2009; Melrose, 2007). Pedagogically, we learn best when we are slightly, but not too far, out of our comfort zone; otherwise, we are either under- or overstimulated, and neither is conducive to growth and learning.

Secondly, emotional literacy includes recognition of, and fluidity around, ambiguity and paradoxes. We are often taught something is either this or that; it cannot be both. Learning from a quantum landscape, we know that the universe contains particles *and* waves. Can we similarly grow towards and/or inclusivity rather than either/or exclusivity in our emotional landscape?

Thirdly, emotional literacy enhances the ability to deal with apparent failure in case of so-called mistakes. We live in a culture that rewards success and celebrates fast achievers. However, not (yet) knowing something often means that we are learning. Can we accept that making mistakes is a natural part of being human, and treat them with humour and compassion and as part of our learning trajectory?

Finally, emotional literacy acknowledges our inherent vulnerability and ultimate mortality and aims to find our peace with that. How can we integrate inevitable change and death without becoming paralysed with fear? How can this contribute to a positive and conscious use of our life force?

¹² 'Focussing' is a psychotherapeutic process developed by Eugene Gendlin to explore the 'felt sense' of internal knowing, to increase awareness of (often preverbal) responses to life situations (Gendlin, 1978).

At an appropriate time, take a journal and reflect on the themes raised above. For example: How is the balance in your life between change and predictability? Are you comfortable with that, or would you like more of one or the other? How often are you out of your comfort zone? It is important to find out where comfort zone ends and unknown begins for you. Do you feel 'thrown' out of your comfort zone, or do you actively seek to go there by trying new activities?

How is your relationship to the unknown, to not knowing? Do you experience excitement and curiosity, a sense of moving towards it, perhaps a sense of empowerment? Or do you experience antipathy, resistance, fear, a sense of closing down, moving away from? Both are absolutely fine, and this is simply an inquiry into your flexibility to deal with not knowing. This is not intended in any way as a judgement of inflexibility but as a means to find out more about your levels of comfort regarding not knowing, in order to understand more of how you learn and navigate life.

If your feelings regarding the unknown are uncomfortable, reflect on what will help you find courage to go out of your comfort zone in order to learn something new. Set a realistic goal for yourself—for example, try something new once every day/week/month/year (a level that is just out of your comfort zone but not too far that it would be daunting). Ask support from a trusted person to help you accomplish this.

Similarly, reflect on your relationship with the other ingredients of emotional literacy: ambiguity and paradoxes, failure and making mistakes, vulnerability and mortality. Inquire, without judgement, on how it is now, and how you can create more fluidity around this in your own personal circumstances.

CULTIVATING RIGHT-BRAIN ABILITIES AND EXPANDING CONSCIOUSNESS

Artistic and spiritual techniques stimulate and strengthen our connection to our subliminal mind and our ability to perceive extrasensory information. These include visualisation, creative arts, stories, symbols, archetypes, meditation, yoga and dreamwork (see, e.g., Roney-Dougal, 1991: 25–28).¹³ Movement, as we discussed earlier (Bohm, 1985; Ingold, 2011), is primary to our relational understanding of what surrounds us. It also enhances our capacity to perceive and imagine, enables shifts in consciousness and is accessible to everyone, anywhere. We do not need to be trained professionally or otherwise in order to move. Indeed, we are all made of movement. Movement is an act of creating and becoming 'patterns of sensing and responding to other movements' that happen in, around and through us (Lamothe, 2014: 59). It cultivates our ability to perceive things differently, whether through thoughts, feelings or imagination. At the same time, it influences and perhaps even defines our being, including, again, our sensing, feeling and thinking capacities, but also our ways of meaning-making, our (inter)actions and growth. Perhaps especially because movement does not depend on words or images, it allows us to tune into 'the presence, power and reality of what may be' (Lamothe, 2014: 60), and is therefore such a strong route into the other ways of knowing that we discussed in the previous section. How can we further develop movement as a way of knowing?

For this exploration, take 20 minutes when you can work undisturbed in a space of at least 2×2m² to move freely. Start by searching for lines and angles both in your body and in the space you are in. Gently move your hands, knees, elbows and arms into different positions, into linear and angular shapes. Can you move through the space in lines and angles?

Now explore the shapes of circles and spirals. What circles, curves and spirals can you make with your hands, knees, elbows, arms and whole body? What circles and curves do you observe in the space? Can you move in circles and curves?

In your own timing, switch back and forth between the linear and the circular, between the angular and the spiral. How does it feel to move in these different ways? What associations come up for you while moving? Do you feel more comfortable with one set of movement patterns than with the other?

¹³ There are many online resources that offer practices, activities and techniques to cultivate right-brain abilities. Please feel free to visit my website www.clover-trail.com for inspiration.

*Still moving, distil your experience into three or more keywords for lines and three or more keywords for circles. Let your writing be part of your movement exploration. What have you learned? What has moving with these polarities and shapes taught you? How does it feel to translate your movement experience into written words?*¹⁴

We can explore any type of question in movement. Ingredients and tools of somatic practices can support our inquiry, for example through concepts such as sensory awareness, touch, textures, weight, speed, density, resistance, posture, how we relate to place, space and atmosphere, and pairs of tension/relaxation, unity/diversity and light/dark. This awakens our body awareness as well as tangible, physical connection with the space around us (which includes both material and immaterial aspects).¹⁵

NATURE IMMERSION

Nature offers a space where we can fully be ourselves, and therefore provides an ideal place to practise all the above, especially with regard to cultivating our right-brain abilities and (re)connecting with what surrounds us. Simply being in nature can give us a different sense of perspective. One option is immersion without an ‘agenda’, regarding such time as a creative, meditative space that can resource your body and your imagination. You can, for example, find a ‘power place’ and let the energy of that specific spot nourish and rebalance you so that you return refreshed to your daily life (see, e.g., Lüttichau, 2017: 81–87).

Another option is to prepare a specific question beforehand and regard your time outside as a ‘medicine walk’ or ‘mini vision quest’, asking nature to be your teacher. Open yourself to receive specific answers to your question that can come from, for example, the direction of the wind, the shape of a leaf, the behaviour of an animal, a repetitive number you might see in a cluster of flowers, trees, or times that a specific animal shows itself. Observe the interaction between your body-being and the land around you. Do you see fences or hedges? Are you in the dark or in the light? Do you feel connected or separate? Such observations might all contribute to an answer to your question.

If you know that you have a wonderfully critical left-brain mind, and rightfully take pride in that, try to let go of any specific expectations, and do not go into an immediate mental analysis about how to read, or whether to dismiss, a specific sensation or experience. Taking the first steps of calibrating your body is a process of slowly creating a greater familiarity and intimacy with your instrument, which will increase trust of the things you perceive. You can even take your mind ‘by the hand’ and say ‘please let me have this experience to learn and experience something without analysing or dismissing it right away, and we will look at it critically afterward’.

CLOSING

This chapter addresses ways to attune the body to subtle information around us, which can be applied in the ontological shift from a world view based in matter and particles, to understanding nature also as (electromagnetic) waves and information. As agriculture moves from a ‘traditional’ to a more quantum-informed perspective, different ways emerge to explore the relationship between various aspects within ourselves as human beings, and between human and other-than-human-beings that we work with and/or are entrusted in our care.

I propose that the body is a multi-layered phenomenon, consisting of physical matter (particles), infused with feelings (waves), intuition and consciousness (information). Similar qualities exist externally, and through techniques of clear focus and expanded consciousness, we can connect

¹⁴ This exploration is available as a free online video resource via the National Centre for Research Methods website: https://www.ncrm.ac.uk/resources/online/embodied_methodologies/

¹⁵ The Somatics Toolkit (Kieft et al., 2019) offers another free online resource with audio recordings to explore different ways of moving with questions, emotions and concrete aspects of any research cycle as well: <http://somaticstoolkit.cventry.ac.uk>.

to subtle sources of information outside of us. The body can be trained to receive such external information through a concrete intention to enhance literacy across all these different layers. In this chapter, I specifically introduce two methods: the use of movement and nature immersion that can help us to realise our embeddedness in, and inseparable connection with, what surrounds us. Such techniques ultimately enable us to have a more intuitive relationship with animals, farms, gardens and food.

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18 The Art of Food Rituals as a Practice in Sympoiethics

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INHABITING SYMPOIESIS

In a humble gesture of touching the soil with the fingers of his right hand, Buddha shows his allegiance to the Earth as his authority, reminding us that our human bodies are in a vital and everyday relationship with the body of the planet. His gesture is in resistance to Mara's temptations to draw him into the conditioned existence of separation, delusion and desire and an expression of his understanding that the Earth is his witness (Thomas, 2000). This sacred image of the Buddha with his own body in connection with the Earth grounds ethical conduct as part of whole-bodied consciousness. Our humanity flourishes as part of the animate and interconnected systems of the living Earth where we are in an on-going entanglement with each other and the matter of all existence (Abram, 2010; Barad, 2012; Gablik, 1992; Haraway, 2016; Ho, 2008; Laszlo, 1996; Weiwei, 2020). Addressing and engaging in social and environmental justice is an invitation for us to notice and practice our humanness as an embodied and physical experience in relationship with the other-than-human world (Roszak 1977). Traditional knowledge systems and ancient spiritual wisdoms recognise this embodied, participatory worldview and the unifying consciousness where, in kinship with Gaia, 'we participate in the intimacy of all things with each other' (Berry, 2006: 137). This is a poetic ecology that enables our fragmented selves 'to find our place in the grand whole again' (Weber, 2019: 3) (Figure 18.1).

For, while we as living creatures are bounded as independent, autopoietic organisms with the capacity to self-reproduce and cohere living processes (Maturana and Varela, 1980), we also co-exist within the interdependence of ecosystems with synergistic behaviour of 'linkages, feedback, cooperation' (Dempster, 2000: 4). Complementing the concept of autopoiesis, biologist Beth Dempster conceived the term 'sympoiesis' to describe the inherently interactive and cooperative behaviour of living systems – *sym* meaning with, or together, and *poiesis* to make, create or produce (*ibid*). In adopting a sympoietic sensibility, the separation between nature and culture dissolves and we as humans become active, sensing organisms within the dynamic flow of a non-hierarchical and interconnected cosmology.

Sympoiesis diffracts with current feminist, decolonial and environmental narratives of power by re-orienting us towards a worldview based on life-affirming encounters between our personhood, each other and the habitats of the animist world. Donna Haraway speaks of naturecultural



FIGURE 18.1 Buddha resisting the temptation of Mara. (Image credit: Exotic India Art.)

being and becoming-with to describe this interconnectedness as a mode of being where ‘nothing makes itself’, rather, ‘we are worlding-with, in company’ (Haraway, 2017: M25). Maria Puig de la Bellacasa reflects on such naturecultural thinking as emerging through ‘knots of relations involving humans, nonhumans, and physical entanglements of matter and meaning’ (Puig de la Bellacasa, 2017: 141). Addressing the feelingful body as one with the thinking mind, Weber calls for a position of ‘enlivenment’ where thought and practical action are reanimated with ‘life’ and ‘aliveness’(Weber, 2019: 11). Minna Salami presents ‘exousiance’ as ‘the catalytic power of being and becoming together with everything else that is being and becoming’ (Salami, 2020: 1–2). This power of aliveness is what we as humans share with every living entity, a power which arises from source and has the capacity for integrating social change with ecological restoration.

Sympoiesis interweaves the concept of the convivial, which also invokes the expression of inter-relationship with its Latin roots of *con* ‘with’ and *vivere* ‘to live’. The convivial guides us towards an embodied ethics where ‘we creatively and autonomously live, work and relate to each other in the everyday life’ (Ballantyne-Brodie, 2018: 1034–1035). A convivial praxis attends to the larger whole by animating inclusive cultural spaces where we *all*, human and other-than-human, can experience, recover and respond within a continuous intra-acting with the matter and life processes of the world. Within forest ecology, *refugia* are spaces for habitat restoration through the revival of ecological and agricultural biodiversity (Barthel et al., 2013). Inspired by the work of Anna Tsing (Tsing et al., 2017), Haraway reframes bio-cultural *refugia* as places of naturecultural resurgence for the revival and flourishing of ways of living that have been forgotten, denied or subjugated (Haraway, 2015). For us to become more wholly human, we are called into a radical conviviality of co-existence and responsiveness with each other and the other-than-human world.

RE-COGNISING RITUAL

Ritual has the potential to manifest bio-cultural *refugia* as collective gatherings that are inclusive of all inhabitants of a place by creating bounded space and time to explore, open to and cultivate new forms of interrelationship that are non-hierarchical and connecting across differences. Ritual practice has been embedded within the making of naturecultures since the birth of humanity as a cultural form for generative sympoietic interaction (Grimes, 2015; Turner, 1969). Affirming the role of ritual as an ecological and participatory practice of life, Ronald Grimes defines it as ‘the basic social act, the fabricator, the device for world-and meaning-making’ (Grimes, 2015: 2). As performative acts,

rituals are spatial and temporal encounters that ‘include order, tradition, and prescribed actions but also innovation and creativity, improvisation and randomness’ (Grimes, 2015: 3). Rituals enacted for the sacred naturecultural purpose of world-making share an interweaving sequence of three transitions: the separation from ordinary everyday life; the liminal, threshold space of transformative experiences and closure, which embraces the potential reincorporation of the wisdoms and teachings which have occurred during the ritual encounter (Turner, 1969; Van Gennep, 1960).

The innovation of ritual practices as containers to restore deeply experiential ways of knowing within a participatory consciousness is an active recovering of *Rta*, the Sanskrit roots from which both ‘art’ and ‘ritual’ originate. *Rta* is understood as ‘the synergy of materials, forms and processes ... the dynamic movement from which all arises’ (Haley, 2016: 46). These ritual practices offer the potential for embodied, emergent and evolutionary forms that are responsiveness to self, other, matter and place. As Victor Turner confirms, the liminal quality inherent in ritual offers the potential to ‘generate and store a plurality of alternative models for living ... in the direction of radical change’ (Turner, 1985: 33). Echoing Turner, Frederique Appfel-Marglin conveys the essential dynamic role of performing intra-actions or rituals ceremony for ‘making a livable common world’ (Appfel-Marglin, 2011: 162).

Rituals afford us rigorous and extensive thinking-feeling practices by engaging our bodyminds in the matter, substances and processes of life. As a contemporary ecological arts practice, Touchstones Earth co-evolve and host rituals as *refugia* for embodied thinking within a sympoietic sensibility that honours the sacred as ‘the changing, flowing, thinking/Of the world’ (Bateson quoted in Charlton, 2008: xiv). These choreographies in time and space are performative encounters that encourage interaction between feeling and knowing, site and psyche, mind and body, nature and culture and the cycles of past, present and future (Mathews 2003). Within a bounded form, the bodymind experiences being-with oneself, other people, matter and place as a conscious process of regenerative world-making – the ‘material engagement in labours to sustain interdependent worlds’ (Puig de la Bellacasa, 2017: 198; Ryan et al. 2016). As Clifford Geertz reflects, rituals are spaces where we can come to know how to act because we know how we feel (Geertz, quoted in Grimes 2015: 1). Thus, it is in the making of ritual that we can cultivate and practice a sympoietic and political consciousness that respects our interdependent origins with each other and the Earth (Gablik 1992a). Joanna Macy, in her despair and empowerment sessions, animates healing with ritual work. These rituals become conduits for deepening into our inner emotional life, reaching out to each other and cultivating actions in respect of the other-than-human world of which we are a part (Macy, 1991). In his work with ritual, Malidome Some reflects that participation in a *communitas* is ‘a pre-requisite for true ritual healing, for a sense of belonging that satisfies, and for a rewarding understanding of Spirit’ (Some, 1998: 294). As Matthew Fox considers in conversation with Rupert Sheldrake, ritual has its value for a radical cosmology of interconnectedness and forms the basis of morality. Fox writes:

All healthy ritual is an invitation to doing things together, not being spectators watching someone else do something, but inviting people to truly participate with their own bodies, their own images, their own breath and their own visions.

Fox and Sheldrake (1996: 147)

KNOWING THROUGH FOOD RITUALS

Food decisions impact on all aspects of our lives, every day, every mouthful. Carolyn Steel writes, ‘food emerges as something with phenomenal power to transform not just landscapes, but political structures, public spaces, social relationships, cities’ (Steel, 2008: 307). Reflecting on the art of Joseph Beuys and his culinary happenings, Lemke writes of ‘gastrosophy’, a philosophy which reframes the ritual of food-making as an art and aesthetics of everyday life (Lemke, 2007: 53). In the ancient Hindu philosophical scriptures of the Upanishads, the nature of knowledge is explored through the substance and metaphor of food as part of life’s interconnected cycles of decay and renewal. The translated extract from Sanskrit is a testimony to how food is a profound medium for ‘coming to know’:

First Know Food
 From food all things are born.
 By food they live,
 Toward food the move
 And into food they return.
Taittiriya Upanishads

Through the medium of food, naturecultural entwine. Touchstones Earth draw on the power of food as a way of knowing to co-evolve contemporary food rituals within the fields of ecological food cultures, regenerative agroecology and social healing. Central to this ritual practice are embodied encounters with the matter of the living food cycle – the cycle of soil and water care, food growing, food sharing and food composting where food waste is returned back to the soil. Cultivating food rituals as *refugia* engages the bodymind in enlivening encounters with agricultural methods, culinary traditions and the geographies of food cultures. This extensive and reflexive experience with food provides space and time for participants to sense, imagine and awaken memories, feelings and thoughts (Curtin 1992). They enact threshold containers for remembering forgotten wisdoms, reviving artisanal skills and generating new possibilities in respect of naturecultural living. Such embodied explorations cultivate a politics of participatory consciousness where the bodymind is in a coming to know and a becoming-with the world, in an integrated expression of care as an ethics of the everyday.

Touchstones Earth's rituals as *refugia* respect, reframe and improvise within an existing lineage of cultural and agricultural food ritual traditions. Within Jewish culture, the ritual table of the Haggadah with its Seder plate recalls the experience of Passover and, through symbolic foods, remembers the significance of the Exodus from Egypt. Agricultural traditions that acknowledge and work through and with the subtle energies of nature include: the Vedic ceremony of the daily fire ritual Agnihotra performed at sunrise and sunset; and Rudolf Steiner's teachings that elaborate the application of biodynamic preparations for soil and plant health in attunement with celestial and diurnal rhythms. Agrarian harvest festivals are celebrated across the world to honour the first fruits of the season with thanksgiving rituals and feasts. These rituals of the table and the field are healing, purifying and restorative as they encourage an awareness and a focus of intention to histories and geographies through spacious, sensuous and sympoietic interactions. They respect the energies of *genius loci*, the agency of human experience and the regenerative power inherent in plant, animal and mineral – all in a dance with seasonal rhythms, natural elements and the Earth's solar system.

INTRODUCING *FIELDTABLE*

The food ritual *FieldTable* grew from Miche's impulse to create an edible intervention as an embodied agricultural alternative to a Union Carbide advertisement within the 1976 *Scientific American* journal addressing 'The Future of Agriculture' (Scientific American 1976). The text within the double-page spread reads, 'We are expecting a few extra people for dinner tonight'. The dramatic image is of a long, white-clothed table which curves into the horizon within a ploughed field of barren soil denuded of all plants and biodiversity. At the table, the green velvet chairs are empty. The plates and glasses are empty. Below the image are promises of the power and efficiency of the 'green revolution' to grow more food using artificially synthesised insecticides, gels, crops and plant treatments for the 213,000 'extra people'.

The precursor to *FieldTable* was conducted in 2006. In collaboration with an organic farmer in Shropshire, UK, Miche hosted an environmental dining experience *CloverField Feast* in a field of clover grazed by cattle. Here, participants experienced an embodied taste of eating as an agricultural act (Berry, 1993). As part of the ritual, the 12 participants were invited to engage with the question, 'What is food'? A decade later in 2016, the opportunity emerged to manifest *FieldTable* on a biodynamic farm near Stellenbosch in the Western Cape of South Africa. During Miche's *Living Cultures: Kitchen culture meets agriculture* Artist Research Residency at the Sustainability Institute she and Flora met a local landowner who gave them a tour of his biodynamic farm in the Lynedoch region. Whilst walking in and with the land, Miche shared her idea of hosting a

regenerative farm-based food intervention. This notion was greeted with enthusiasm by the farmer and preparations began to curate this edible experience on one of his biodynamic fields.

Addressing and engaging with the personal and political dimensions of oppression through emancipatory practice motivates all of Miche's work in the world. As a woman with Jewish heritage born white into the colonial regime of Rhodesia, Miche recognises and engages with the multiple dynamics of oppression. Aware of how white body supremacy has conferred privilege on her life (Menaken, 2020) she is also tuned into how her human existence entwines within other systemic discriminations which segregate, marginalise and exploit. Her contemporary food rituals arise from a body of work which is committed to intervening in and countering the separation between ourselves, each other and the multisentient communities of our planet. Through creating liberatory conditions for embodied experiences with the living food cycle these convivial encounters prepare a common ground for fostering respectful, inclusive and celebratory relationships.

Given the legacies of apartheid in South Africa and on-going land contestation coupled with food insecurity the invitation to host the food experience *FieldTable* was politically dynamic. The durational ritual was conceived as a convivial intervention for participants from diverse ethnicities, cultures, ages, classes and genders to gather around a dining table in an unfamiliar context to share different experiences, perspectives, aspirations and vocations. Those at *FieldTable* included agroecology students and educators, gardeners and farmers, organisational leaders and activists, bakers and chefs, scientists and ecologists, journalists and researchers and artisan food producers. This kinship of people emerged from relationships Miche and Flora had developed during the 3-month artist research residency at the Sustainability Institute. Everyone round the table shared a dedication to agroecological food cultures and regenerative artisanal food production within the region. The event was thus a *communitas* for the guardianship of soil, water and land as a practice in social, ecological and food justice.

On a September Saturday, the ritual process began with a sensorial travelling experience in a lavender-strewn truck where 22 participants were driven up to a farm track. Continuing on foot, all walked towards a field of grazing cattle where a dining table stood amongst the meadow grasses. As the participants approached *FieldTable*, they were invited to pause at a shrine, the liminal threshold which signalled the bounded container of a ritual space. The ritual shrine was in honour of the field and its *genius loci* and was composed of large slice of tree trunk and a selection of matterful objects including a granite touchstone, kalahari salt, a vessel of water, a bowl of soil and a ball of red thread. Miche welcomed people and offered gratitude to the soil and water. Here she invited participants to consider the question 'What are we hungry for?' and to hold this during the food sharing. Once seated, Miche introduced the evolution of *FieldTable*, and before beginning to eat, participants were asked to pause for a minute of silence in contemplation of their surroundings and with the food on their plate. The mainly plant-based menu of dishes was hand-prepared and cooked using culinary artisanal traditions to enhance the nutritional value. All the produce was sourced and donated from the gardens and farms of local growers who sat around the table. The simplicity of fare included the fresh, the fermented, the raw and the cooked, all composed from the season's local harvests. Sourdough breads from heritage grains were specially baked in woodfire as small baguettes for sharing between two as a gesture of companionship. Seeking to amplify the vitality of the food, to give it voice and allow it to reveal its own nature, the food on the plate displayed a vibrant composition of natural colour, form and texture – food to awaken the senses.

As part of the ritual dining experience, some of the participants stood up to share their passion for their culinary, artisanal and agricultural practices, thereby stimulating the spontaneous reflections and stories of others. Once the food was eaten, leftovers from the plates were collected into bokashi bins to activate a fermentation process that enables foodwaste to become natural fertiliser for the land. The final phase of *FieldTable* opened a space for self-reflexivity where participants were asked to respond in writing with the question 'How has your hunger been satisfied?' This was followed by closure through exchanges of thanks and farewells (Figure 18.2).

As a durational food ritual, *FieldTable* was a provocation for the bodymind, enlivening people's capacities to come to know through the senses, the imagination, emotion, intuition and



FIGURE 18.2 *FieldTable* prepared for participant diners. (Image credit: Eva van Niekerk.)

memory in direct contact with the geography and the matter of food. The co-creation of such bio-cultural *refugia* as a ritual, situated in an agricultural field on biodynamic land, offered the opportunity to *know* food and to *be-with* food while experiencing its source and the place of its origin, the living soil. As well as being a thanksgiving ritual in celebration of regenerative and biodynamically grown food of the land, *FieldTable* sought to be a sympoietic manifestation of convivial life as an ‘autonomous and creative intercourse among persons, and the intercourse of the persons with their environment’ (Illich, 2001: 86). What follows is a photo-montage of the encounters that unfolded during *FieldTable* for the reader to pause and feel into, muse on and dwell-with (Figure 18.3–18.16).

EXPERIENCING *FIELDTABLE*



FIGURE 18.3 Participants walking up the farm track to the entrance of the field. (Image credit: Eva van Niekerk.)



FIGURE 18.4 The field shrine to *FieldTable*. (Image credit: Eva van Niekerk.)



FIGURE 18.5 Being in silence to encounter the *genius loci*, the grazing cattle and the table of food. (Image credit: Eva van Niekerk.)



FIGURE 18.6 Reading *FieldTable* menu of dishes from the season's bounty. (Image credit: Eva van Niekerk.)



FIGURE 18.7 A plate of locally and naturally grown 'bare awakening food' composed of: poached asparagus; brochettes of biltong, pickled beetroot and horseradish paste; marinated kohlrabi; broad beans with freshly made mayonnaise; salted lemon chard; fermented cabbage; butternut squash puree with oregano; grilled red spring onions; raw whole carrot and boiled egg in shell. (Image credit: Eva van Niekerk.)



FIGURE 18.8 Participants conversing at *FieldTable*. (Image credit: Eva van Niekerk.)



FIGURE 18.9 A young farmer sharing his passions and aspirations for change. (Image credit: Eva van Niekerk.)



FIGURE 18.10 Tasting rosemary-infused water. (Image credit: Eva van Niekerk.)



FIGURE 18.11 Breaking bread as a gesture of companionship. (Image credit: Eva van Niekerk.)



FIGURE 18.12 Soil Shrine making visible examples of natural methods for increasing soil fertility through composting foodwaste and growing clover as a nitrogen-fixing plant. The sprigs of rosemary call us into remembrance. (Image credit: Eva van Niekerk.)



FIGURE 18.13 Leftover food emptied into a bokashi bin. This Japanese fermentation method prepares foodwaste to become a natural fertiliser for soil regeneration. (Image credit: Eva van Niekerk.)



FIGURE 18.14 At the end of the meal, participants write about their experiences of *FieldTable* and reflect on how their hunger has been satisfied. (Image credit: Eva van Niekerk.)



FIGURE 18.15 *FieldTable* was set up and completed in a day. (Image credit: Touchstones.)



FIGURE 18.16 FieldTable manifests in 2016 as a convivial, local and agroecological narrative to counter the 1976 Union Carbide advert promising synthetic and genetically modified solutions to world hunger. (Image credit: Eva van Niekerk.)

CULTIVATING SYMPOIETHICS

The food ritual *FieldTable* responds to Merleau-Ponty's call to artists to 'awaken the experiences which will make the idea take root in the consciousness of others' (Merleau-Ponty, 1945: 8). As a ritual and an edible intervention, *FieldTable* emerged through relationships between people, matter and the habitats of place. By making visible the abundance and natural fertility of regenerative farming methods through its local harvests of colourful, seasonal produce, and the health of well-reared animals, *FieldTable* was a space for awakening, inhabiting and re-imagining agroecological futures for the region. As noted above, during the ritual, two questions were asked: at the start of the meal, 'What are you hungry for?' and, at the end, 'How has your hunger been satisfied'? Here follows a selection of participants' responses which shares the diversity of perspectives from women and men of different occupations, ages, cultural heritages and ethnic communities.

The return of the sacred to the table has created time, space
and thinking partners to look at this hunger,

to imagine its voice, its sounds, its texture, its feeling and
find out how to hear it, how to respond to it.

Understanding what my belly inherently needs and wants
to be fully nourished – re-awakening intuition.

I am starving for revolution to our food systems. Starving to see farmers doing away with the systems
that harm the mother earth. I want food to be accessible to everyone because food is life.

This is my love for life, my sanctuary, my home.

A sense of freedom, a chance to engage.

A society where diversity is treasured, where food is not wasted;
where Nature becomes and is the most revered
or 'desirable' thing, asset, goal; where food and conversation serve
to respect the farmer, the cook, the soil, and ourselves.

I am searching for beauty ... a new beauty.

A beauty that emerges when time is taken to appreciate and experience
and rediscover what feeds our soul and what we need to do
in order to build resilience to the true challenges of today.

You are re-igniting culture and coming back to what it means to be community ... community along
the lines of land and food.

Under culture you get ritual and agriculture,
 it felt literally like what it means to be going back to being human
 I hunger to be part of a community that holds at the centre,
 so it can hold me, remind me when I get lost in my 'busy-ness',
 when I forget about the sacred ... be present
 where I can hold this space for other beings, all beings.

Deep changes are, more often than not, slow gradual processes that seem so natural that we hardly notice they are even happening, like the cultural changes taking place beneath the soil, in our guts, and at our tables. I'm hungry for change.

I understand collaboration of life-giving and not life-taking.

The creation of living community in that time and space
 helped create a collective mindset to preserve
 and create energy that is positive.

Let's go to the townships with this. Because in the townships, we do get to reach people who are practicing organic gardening,
 who are using indigenous knowledge to produce.

These reflections from participants document how *FieldTable* enlivened ways of coming to know through the interrelationship between themselves and the animate matter of life. Within the liminal space of this food ritual as *refugia*, our human capacity for naturecultural thinking and being-with was enlivened through personal and collective intra-actions with food, artefacts and substances. Their words speak of a longing for more sensuous experiences, for expansive conversations and for regenerative cultural and agricultural practices that foster life-giving interconnectedness between the personal body, the collective body and the body of land. In an exchange with Flora, Miche reflects on the significance of naturecultural rituals within agriculture and explores how *FieldTable* contributes to such a recovery of the 'cultural evolutionary potential' of ritual (Turner, 1985: 165):

For us humans to be discovering what it means to be *truly* here is to reconnect with embodied knowing. Being in a continuous relationship with the matter and processes of life is what makes us natureculture creatures: our lifeblood, our life capacity and our consciousness comes from continuous interaction and relationships through our bodies with the dynamic flow of the cosmos. Being in touch with, noticing more, with spaciousness and focus, is what ritual allows, a space and time for attuning and attending through our bodyminds with the living processes of the Earth. It also gives a great sense of joy to be in a ritual that is respecting the self and the collective within the naturalcultural. Ritual connects us to the life force.

Conversation Exchange between Miche and Flora (5 June 2020).

FieldTable offered a taste of the catalytic power of the life force of exousiance which Salami identifies as a stimulus of energy and will for change. *FieldTable* was a threshold space, a naturecultural *refugium* for people to experience their bodyminds, within *communitas*, as an instrument of participatory and political consciousness in a relationship with the biodiversity of the land. Encounters with each other and the matter of food within this contemporary ritual form generated new thoughts, openings and actions. The initiatives emerging from *FieldTable* were wide-ranging and continue to unfold, and include: the commission of a large-scale *FieldTable* artwork for the farm office; the impulse to create the infrastructure for food sharing with staff at the farm where *FieldTable* took place; the Sustainability Institute linking to a local cooperative food hub and creating food citizen lunches from the food garden and a follow up Agroecology Ndaba forum exploring agroecological training with educators, students farmers, food activists and policymakers. Daryl Jacobs, Deputy Director at Elsenburg Agricultural Training College reflected on the role of food and soil rituals as offering transformative experiences of nature-based farming for young trainee farmers:

What I value and treasure is the real deepened transformation ... your healing of soul and soil. It emphasises that we are part of one system, but unless we transform our thoughts processes from deep within, from the soul, it will be superficial.

Conversation with Daryl Jacobs (12 September 2016)

Naturecultural food rituals as *refugia* are a reminder of how our human response-abilities are intimately entangled with interdependence. This relational way of knowing is embraced by the concept of ‘sympoiethics’ where our artful bodyminds become the divining instrument for enculturating art and ethics as a practice of life. Miche expands on her concept of ‘sympoiethics’ in a conversation with Flora;

Human existence is lived through and within a dynamic nexus of living processes. Human oppression is intertwined with the degradation of the Earth. Authentic human flourishing emerges through restoring an ethos where the dignity of selfhood is interwoven with a respect for place and care for our sentient, multispecies Earth. A sympoiethics combines sympoieisis with ethics. Ethics, rooted in ethos, defines dwelling places where we come to know together through place-based relationships

Exchange between Miche and Flora (April 2020)

CONCLUSION

The Buddha’s enlightenment under the Bodhi tree symbolises how our human existence flourishes through our care for each other and the Earth. Consciousness and knowing arise through *embodied* encounters with naturecultures which call for us to notice and value the body’s multiple intelligences and the subtle energies which surround us (Fabre Lewin, 2012). A sympoiethics awakens us, with and through our bodyminds, to emancipatory practices and reciprocal responsibilities for living, loving, thinking, being and acting in ways that are equitable and responsive to our co-dependent existence (Fabre Lewin, 2019). Naturecultural food rituals create the conditions to enliven our ecological selfhood through an authentic relationship with food – experiential rituals as *refugia* which are practices for transitioning towards a participatory world view and a politics of consciousness. It is within this nexus that food is a changemaker with its role in re-orienting the matter of our thinking, reshaping our landscapes and reconfiguring our response-abilities as humans within the geography of our planet. In co-creating naturecultural rituals, we are reviving thinking-feeling practices that respect each other’s embodied knowing, attend to the voice of nature and cultivate a sympoiethics that draws its life-affirming power from our caring for and becoming-with the living Earth.

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19 The Systemic Constellations Method Applied to Agriculture

Melissa Roussopoulos
Forgotten Connections

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INTRODUCTION

Systemic Constellations is an experiential group methodology that reveals the usually invisible dynamics of complex systems. This essay charts its evolution into a series of forms that have successfully provided insights and solutions in a range of professional fields. Most recently, it has been applied to systems which include animals, plants and various components of ecosystems.

Research by the author is presented through case studies to illustrate this application and explore the questions it raises, in particular whether the information that emerges is coming from other-than-humans. The evidence strongly suggests that it is, and further case studies demonstrate ways in which the method can be of value within agriculture.

THE EVOLUTION OF THE SYSTEMIC CONSTELLATIONS METHOD

The method was developed by Bert Hellinger in Germany to help clients resolve their personal issues. He was trained in various Western therapeutic modalities and was also influenced by the indigenous knowledge and understanding of the Zulu people, having spent 16 years among them in South Africa (Franke, 2003).

A trained facilitator (the Constellator) would address a client's issue in a workshop setting with a group of people who were not related to the client. This process was called a 'Constellation' and it began with the Constellator interviewing the client to identify the individuals in the client's family who might be relevant to his/her issue. The client would then choose individuals from the present group to 'represent' these family members. These 'representatives' (reps) were then intuitively positioned by the client to stand in specific places in the room. From wherever they were placed, the reps would describe what they felt in their bodies, their emotional state and their relationships with the other reps.

The author's first experience as a rep was in 2000, when a client invited her to represent her sister. She was positioned among five or six other reps, and then suddenly found herself intensely angry,

specifically with a male rep standing about 2m behind her. She had never met the man being the rep before, nor did she know which family member he was representing. Intensely surprised by the strength of the anger, as well as the fact that she was feeling it, she reported it to the Constellator. He told her that this was the kind of information they were looking for, then the client revealed that the man the author was angry with was representing her father and ‘my sister hates my father’.

Hellinger had discovered that reps, who had no previous knowledge of the client or of his/her family, reported information which was accurate for the member of the family they were representing. He could not explain this phenomenon, called ‘representative perception’, but he observed that it took place consistently.

The initial positioning of the reps was found to reflect the current dynamics between the family members. The Constellator would then facilitate a process during which reps moved or spoke. The other reps reported how these actions impacted them and, over a long period of experimentation, what emerged were repeating patterns in the experiences of the reps. From these, as well as family therapeutic understanding, interventions were developed to support the healthier functioning of family systems. Through these, the clients’ issues would be resolved.

This first form of Constellations emerging in the 1990s became known as ‘Family Constellations’. It identified two foundational elements on which all subsequent evolutions of Systemic Constellations (the generic term) are based. The first is the use of representative perception as a consistent and valid way to access information. The second is the understanding that individuals are profoundly influenced by the systems of which they are a part. Individuals inevitably belong within their family systems, but they are also part of the organisational systems where they work, the social and cultural systems within which they live and the natural systems which sustain them.

By the mid 1990s, the Constellations methodology was being applied to organisational systems (Organisational Constellations). Workshops took the same format with clients, a Constellator and a group, but the issues were professional and the reps took roles not only as other people, but also as internal teams, the whole organisation, its customers or even abstract concepts such as ‘purpose’. As before, reps would experience sensations in their bodies and feelings about the other reps. Crucially, their experiences made sense in the context and led to insights and solutions. Organisational Constellators identified interventions that supported organisational systems to thrive and the method proved successful for companies such as Daimler-Chrysler, IBM and BMW (Horn and Brick, 2009).

In 2004, the International Forum for System Constellations in Organisations (infosyon) was founded in Germany, developing quality standards, training standards and a code of conduct. Along with certifying facilitators and training courses, the Forum supports ongoing interdisciplinary research and development into the method. Some of the many theses written about Organisational Constellations can be found on its website¹ and it has links to a group of professors and lecturers who are researching and using the method within European universities. The Forum’s most recent bi-annual conference in 2018 attracted participants from 18 countries.²

Beyond family and organisational systems, Constellators have been developing the method for use in a range of fields including politics, drug rehabilitation, education and prisons. Many academic papers and books now exist on these topics; Constellations conferences have taken place throughout Europe, in North and South America, Australia and South Africa; and there are trainings and professional bodies in a number of countries.

THE DEVELOPMENT OF NATURE CONSTELLATIONS

In 2003, the author, an environmentalist by background, witnessed an Organisational Constellation which indicated that the methodology might be able to help with environmental questions. She trained in Organisational and Family Constellations and then held a post researching the application

¹ www.infosyon.com.

² Personal communication with Katrina Barry, Chairperson of infosyon, November 2019.

of Constellations in different professional fields. Through facilitating exploratory Constellations on a range of issues involving human and ecological systems, she developed her approach. Over a similar period, an international group of Constellators began to explore using Systemic Constellations with nature. They conducted experiential research in many domains including: domesticated animals, forest management, the healing properties of plants and international environmental issues (Mason Boring, 2007). The first book about what have come to be known as Nature Constellations (NCs) features 14 practitioners working in 5 countries, the common thread being the inclusion of other-than-humans in their Constellations (Mason Boring and Sloan, 2013).

SELECTED CASE STUDIES TO EXPLORE THE METHOD

Since 2014, and inspired by collaborations with academics in the agricultural sector, the author has been formally researching some of the NCs she facilitates: obtaining informed consent, audio recording NCs and interviewing clients afterwards to track the impacts. Case studies from this work are presented below to illustrate the method, investigate the questions it raises and assess its potential to address agroecological issues. (Unless otherwise stated, all NCs described were run by the author and names have been changed.)

Case Study 1: A Home for a Horse

Phoebe and her mother owned and cared for a horse, Mascot. When her mother died, Phoebe had to choose where Mascot would live. At the time he was staying with a woman who kept him as a companion for her own horse, but Phoebe felt she would be letting her mother down if she did not look after Mascot herself. She undertook a NC to help her decide.

Phoebe chose a rep to be Mascot and he reported that he felt pain in his right wrist. When she set up a rep for herself (P), P described having a heavy, burdened feeling in their belly area. When P tested how it would be to have Mascot living with her, as an option within the NC, P burst into tears saying ‘I’m in crisis, I can’t take on any more’. At some point Mascot’s rep said ‘I want to be with other horses’.

The best outcome was shown to be for Mascot to be with another horse and not living with Phoebe. Attention was also paid to Phoebe’s feelings of letting her mother down and to resolving these.

During the follow-up interview, Phoebe revealed that she had been sceptical about the method to start with. Thus, when Mascot’s rep had reported pain in his right wrist, she had been shocked. Mascot had navicular syndrome, a degenerative disease in his right front fetlock – equivalent to where the rep had experienced pain in his body – and Phoebe had not said anything about this to the group. For Phoebe, this was an ‘a-ha’ moment and helped her to trust what was unfolding. It also transpired that Phoebe had a medical condition in her belly (also unmentioned), the same area her rep had felt heavy and burdened.

At the time of the NC, Phoebe was caring for various members of her family and was not well herself. Had Mascot been moved to live with her, it would have added a considerable burden in terms of time and energy, particularly as she would have had to take on a second horse to keep him company. Phoebe later explained that she has a strong tendency to take on too much responsibility, without realising the negative impacts on herself: ‘so it was very powerful to see someone representing me go in and just have a complete melt down and say “I can’t cope”’.

Phoebe reported that the NC had helped her decide to keep Mascot where he was and ‘I... stopped beating myself up about the horse being with someone else’. Five years later, she is clear that her life has been easier through not having had to look after him and Mascot is thriving with his caretaker and horse companion.

REFLECTIONS ON REPRESENTATIVE PERCEPTION

On learning how reps spontaneously experience body sensations, emotions or just ‘know things’ relevant to their roles, people often question if it is really happening. The best way to answer this question is to directly experience it. While case studies can describe it, and the entire Constellations field attests to it, any written account of representative perception falls short of the actual experience. A participant at a NC workshop in 2012 described representing for the first time: ‘I found it amazing how easy it was to tune into non-human consciousness in a whole-body experience and for it to be so obvious that I was not making up or imagining the experiences I was having’.

The next question is usually to ask how it could be happening. In 2006, the author identified a number of potential scientific explanations (Roussopoulos, 2006) and since then advances in consciousness studies, science and cosmology have led to more integrated and complete explanations (Laszlo et al., 2016). However, representative perception has successfully underpinned Systemic Constellations for decades without practitioners knowing how it works.

The author holds that the most important question for agricultural applications of NCs is to ask where the information is coming from. If the data about the human/ecological system in question originates, consciously or unconsciously, solely from the client or holding group, it is merely someone’s belief, or at best second-hand information. Two phenomena have been observed in all forms of Systemic Constellations which indicate that reps may be picking up their data directly from the beings they are representing. The first is when information emerges in a Constellation which no-one present knows about and which is subsequently proven to be accurate. The second is when something spontaneously changes in the system being represented, in line with what happened within the Constellation, but where there has been no contact between the people present at the Constellation and the beings in the actual system. The next two case studies illustrate these phenomena taking place in NCs.

Case Study 2: Struggling Cabbages

Laura wanted to know what she could add to the soil to support the health of her cabbages. A female rep for the cabbages (C) initially reported that her roots needed to be stronger and that she felt vulnerable to being nibbled. C’s body was leaning over, her top half moving in circles around her torso as if her head were very heavy. She would go down, then just about manage to pull herself up. Laura, watching from the sidelines, commented that perhaps the cabbages had not had time to grow good roots and she was concerned that the rep, C, would fall over. Laura could have added manure, lime or biodynamic preparations to the soil, so reps were brought in for each of these options. C experienced a jolt when the biodynamic preparations came in, and then found that the manure felt better to her. However, only the presence of lime stabilised her movement.

Not long after the NC Laura contacted the author, very excited – she had just uncovered her cabbages, which had been under fleece for the previous 4–5 months. They were a type of cabbage that would usually stand upright with their heads on stalks about six inches high. She had been expecting to find small, under developed heads, instead of which: ‘to my utter amazement... they had actually grown so enormous that they couldn’t hold their own weight on the stalks... they had toppled... I’ve never seen them fall over before... so it completely reflected what the representative was doing’.

Neither Laura, nor anyone else in the group, had known the state of her cabbages when she did the NC. The behaviour of rep C – leaning over with a heavy head – accurately mirrored the heavy heads of the actual cabbages. Also, as such big heads were unusual, Laura had not anticipated them. The

information revealed through rep C could not have come from Laura or the group, consciously or unconsciously.

Case Study 3: A Traumatized Dog

In October 2016, an incredibly friendly, mainly Fox Terrier mongrel, Tommy, witnessed his owner being killed. Tommy continued to live in the same home as before with his owner's partner, Paul, but his behaviour totally changed. He became extremely clingy and demanding, unable to tolerate being left alone. In March 2017, Paul did a short NC about Tommy. Five days later he wrote: 'When I got home, late evening, Tommy greeted me in a sedate and very peaceful manner. Having been locked up in the house all day, he would normally go ballistic. It was astounding how different he was. What is more, he has been much calmer with me since'.

Perhaps being left alone all day had somehow cured the dog, but when questioned about this during a follow-up interview, Paul felt that this was unlikely because Tommy had never enjoyed being alone. Another possibility was that, on his return, Paul had behaved differently to Tommy, which is why Tommy's response had changed. Paul, however, insisted that his own behaviour had not altered and was convinced that the NC was responsible for the healing in Tommy. Five months later, Paul reported that Tommy had never reverted to his previous extremely anxious behaviour.

There is thus the possibility that the NC itself impacted Tommy as it took place, which suggests a connection between the rep for Tommy, or some other aspect of the NC, and Tommy himself.

REFLECTIONS ON INTERSPECIES COMMUNICATION

While the two case studies above do not prove that the reps' information comes from the other-than-humans being represented, Nature Constellators' consistent and extensive experiences lead them to believe that it does. In addition, the multiple case studies demonstrating the success of the NCs method make it probable (Mason Boring and Sloan, 2013; Roussopoulos, 2018).

In the author's opinion, a NC involves the human reps in the Constellation connecting directly with the actual humans and other-than-humans who are being represented. This would mean that NCs facilitate distant two-way communication between humans and other-than-humans, a proposition generally considered impossible within mainstream western culture and academia.

M. J. Barratt, Assistant Professor at the University of Saskatchewan, observes that the existence of communications from other-than-humans is 'acknowledged and experienced by many, both Indigenous and non-Indigenous' (Barratt, 2011: 125). In her opinion, these communications are downplayed within academia, which considers rationality and the intellect to be the primary, if not the only, valid ways of knowing. Animistic methods of research, on the other hand, validate the body as capable of receiving information and create spaces 'where the "voices" of other-than-human "persons" (in their many forms) can be heard' (Barratt, 2011: 134). Scientific experiments indicate that telepathic interspecies communication is the most likely explanation for certain observed phenomena (Sheldrake and Morgana, 2003) and a few academics are beginning to address how this might work (Erickson, 2011).

The author has listened, formally and informally, to personal accounts of interspecies communications from many people, including farmers, vets, indigenous trackers, a professor of consciousness studies, agricultural researchers, shaman and professional animal communicators. All were certain that they had experienced communication with other-than-humans, be they animals, plants or areas of land. The following case studies describe NCs that are relevant for the agricultural sector and an opportunity to reflect on whether these NCs are indeed a form of interspecies communication.

INFORMATION FROM AND ABOUT ECOSYSTEMS

Case Study 4: Bees in the Bush

Francesca Mason Boring teaches a range of Systemic Constellations forms including NCs. When a NC reveals information which could have public benefit, she obtains the group's agreement to waive confidentiality so that the learning can be disseminated. Hence, she could report on a NC she facilitated in a coastal community (Mason Boring and Sloan, 2013: 13–14). The NC included a rep for a bee, and Mason Boring became nervous that there was no flower for the bee. The bee's rep told her that he did not need a flower because 'I am very strong when I stand by this bush'. The bush being represented grew in the local area.

Mason Boring shared that she did not understand why the bee did not need a flower, only to discover that someone in the group was a biologist with a specialty in botany. He was astounded by what had happened and was able to explain it. The bush in question had an extremely high protein content. Come spring time, as the bees came to life in that cold region, they could quickly find the most efficient food source through that bush. In Mason Boring's opinion, the NC demonstrated that the bees needed that specific bush. Unfortunately, the bush was considered unattractive and was becoming very rare.

This case study indicates that NCs have the potential to show what other-than-humans need in order to thrive, as well as the inter-relationships between parts of an ecosystem. The botanist's knowledge provided verification that the relationship described was accurate. Since pollinators, such as bees, are crucial to food production, such information could be invaluable for farmers.

Case Study 5: Exploring Beneficial Growing Conditions

In Greece, a grove of olive trees were getting old and their owner was considering adding animal manure and/or planting leguminous vetches to enrich the soil and hopefully strengthen the trees. She was about to start a NC to check which of these would best support the olives, when one of her employees mentioned that wild asparagus could be another option.

A rep for the olive trees (OT) was positioned and immediately said: 'I feel the roots but something is missing'. A rep for manure (M) was brought in, which made OT feel easier. OT had no response to a rep for the vetches (V), but when a rep for wild asparagus (WA) was brought in, she said: 'I feel better... I feel energy'. Combining WA with M, OT reported 'even better, more energy', however on adding V as well, OT said: 'it's OK but it doesn't make any difference'. She preferred to be without V, while V reported feeling good but 'I don't feel any attachment to the olive'. OT consistently felt energy when WA was present. The NC indicated that the olive trees' preference was to have wild asparagus planted, as well as livestock manure added.

Afterwards, the employee shared that farmers used to plant olives together with wild asparagus, which she believed was because, in nature, the asparagus was found under olive trees. Neither the owner nor the person representing the olive trees had known this beforehand.

The olive tree rep feeling 'energy' in the presence of wild asparagus could imply a synergistic relationship between the two species, in which each supports the other. At the very least, the NC indicated a compatibility between olive trees and wild asparagus. A few years after this, the author learned of an EU-funded multi-stakeholder project which included development research and promotion of the mixed cropping of wild asparagus in olive orchards. Both species require the same growing conditions and it was found that growing asparagus under the olive trees did not reduce

the olive yield. Having two crops raised the productivity of the land, requiring few additional inputs other than labour, while helping to protect farmers from extreme crop failure (Rosati, 2017).

On a few other occasions, the author has been able to check generic information about ecosystems learned from NCs against independent research, and each time the data matched, as per the above two case studies.

HUMAN SYSTEMS INTERACTING WITH ECOLOGICAL SYSTEMS

Farming involves both human and ecological systems and because Constellations always seek the well-being of the whole, both are taken into account. Organisational Constellations (OC) techniques can be brought in to support the organisational aspects of agriculture. OC theory holds that the purpose of any endeavour needs to be clear, appropriate and supported, while OC practices have developed so that activities can be planned over time in alignment with a purpose. These OC approaches were integrated into the series of NCs described below.

Case Study 6: Vineyards Coming into Being

Fenia had a project to develop 10ha of mainly fallow land on a Greek island. Fruit, olive trees and aromatic herbs were already growing there, with some processing and selling of the produce. Tourists were staying in restored buildings on the site, however the total income only covered about a third of the maintenance costs. While Fenia was considering a range of income-generating options, she also had a strong desire to listen to the other-than-humans involved in the project.

In 2015, the author worked with Fenia to design a bespoke NCs workshop, both to get clarity about the next steps, and to co-create with nature. A rep for the 10ha of land (Land) was set up in relation to a rep for Fenia's purpose for the project. Land expressed a strong need to be cultivated, specifically she wanted vineyards 'near the orange groves'. Fenia then revealed that this was exactly the area where vineyards were possible, and where it was likely that vines had been grown in the distant past. When a rep for Fenia's husband came in, it became clear that his priorities were in conflict with Fenia's stated purpose.

Fenia's husband had bought the land, so although Fenia was in charge, both were part of the project. A second NC identified a new purpose that was both welcomed by Land and supported by the reps of both Fenia and her husband. This made it possible to run a third NC to assess which of the proposed activities would best support the fruition of this purpose. To do this, a rep was set up for the whole project (Project), who described feeling big already 'but I feel the potential of a bigger scale'. Reps for various possible next steps were being introduced to identify which of them had a place, when Project spontaneously stated 'I want the vineyard'. When a rep for a vineyard (V) was brought in, Project responded 'I feel very positive excitement for the vineyard here'. V remained close to the Project as other future steps were evaluated in relation to the new purpose.

Immediately after the NCs, Fenia described having learned 'implicit things in this which are something we couldn't have presupposed without this work. [One is that] the vineyard will generate an empowerment that will make other things happen easier'.

Interviewed 2 weeks later, Fenia explained that she had considered a vineyard on the land but 'personally it was an option that was sounding a bit too much for me... a very ambitious project... I did have a prejudice against it'. Because of what she had seen and heard, she was no longer so dismissive of the idea.

Over the next few years, the island unexpectedly developed an extremely good reputation for wine. Fenia's husband, who knew nothing about the NC work, proposed that they plant a vineyard to make wine. It was a long process that involved soil testing and gaining permissions from the Greek state, as well as EU funding to help build the wine making plant. Fenia – who was happy to do what she perceived the land itself wanted – was aligned with her husband throughout the process.

In April 2019, they planted 11,000 vine roots over an area of 30,000m² – in precisely the location that the rep for the 10ha of land had identified in the first NC. This area was ten times the 3,000m² that Fenia had originally considered planting and which, in 2015, had felt too intimidating for her. In July 2019, Fenia described how beautiful the vineyard looked and how their commitment to it had enabled many other aspects of the wider project on the land to gel together. She felt that things were falling into place and confirmed that all their activities were in line with the new purpose identified back in 2015.

OCs sometimes refer to ‘the future that wants to emerge’. Could this be what was identified through the NCs for Fenia? What does it mean for a piece of land to have a desire, for a ‘project’ to ask for vineyards to be included? NCs challenge many of our assumptions about where consciousness is located and how information flows between different consciousnesses. But NCs are not alone: evidence from a wide range of disciplines indicates that a new paradigm is both required and emerging (Laszlo et al., 2016). NCs provide a method and data that could support the development of such a new paradigm.

GENERAL REFLECTIONS

Apart from the preceding case studies, Mason Boring and Sloan (2013) and Roussopoulos (2018) describe how NCs have already demonstrated their value for a range of agricultural and environmentally-related issues. These include: the specific relationship dynamics between particular humans and other-than-humans; the general relationships that hold within ecosystems; planning of land development projects; support for environmental and agricultural organisations; and explorations of global environmental and policy issues. After 15 years facilitating NCs and tracking the results where possible, the author’s assessment is that NCs constitute a form of interspecies communication that could support agriculture in countless ways.

The method continues to evolve, and research is ongoing to build understanding of what they are capable of, the reliability of the data, and how and when they can best be implemented. Collaboration between Nature Constellators and researchers within the agricultural field would enhance this process, while also contributing to the theory and practice of sustainable farming.

NCs are themselves an innovative form of research into human/ecological systems. Agricultural systems are coming under increasing pressure through climate change, pollution and other stressors, and deeper insights into these complex and rapidly shifting systems are essential. Systemic Constellations evolved to map and work with the interconnected dynamics of complex systems that more linear or traditional research methods fail to grasp. NCs can do this for agroecosystems. They can provide information about systems’ dynamics in real time and track the relationships between the different parts. Proposed actions could be tested within NCs and, through the reps’ responses, the likely impacts on the whole system would become visible – impacts that modern reductionist science is unable to predict and which could serve as signposts for further investigation.

Finally, NCs bring benefits beyond simply providing information. Other-than-human reps regularly offer their own suggestions, so the process becomes not just co-operative, but co-creative. There may be spontaneous positive changes in the system represented, not to mention in the client present. A few months after doing a NC about the projects on his farm, the owner wrote: ‘the end [of the Constellation]... was so fantastic that I broke down crying when I related it to my wife and even got emotional when sharing it with other people’. Frequently clients and reps experience profound shifts in their relationships with the other-than-human life around them towards more understanding, appreciation and respect.

CONCLUSION

Nature Constellations is a relatively new development of the Systemic Constellations methodology and has only recently been applied in the agricultural field. The research presented indicates that NCs can access accurate information about the other-than-human life around us, effectively forming a means of communication with it. While further research into NCs would hone their application, they have already demonstrated their value in addressing agroecological issues, particularly when integrated with the theory and practice of Organisational Constellations.

As well as addressing specific questions brought by clients, NCs offer a unique method of research into human/ecological systems which could supplement traditional agricultural research. By providing insights into the current state of agroecosystems, revealing the relationships between the parts and indicating what would benefit the whole system, NCs could make a valuable contribution to the thriving of all life.

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20 Engaging in the Goethean Method

An Approach for Understanding the Farm?

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INTRODUCTION

In my first chapter in this book, I provided some background to Goethe’s scientific work and indications of why it might be relevant to us today in developing a holistic approach to farming and to agricultural research. This approach can help with both our understanding of the world and how we might see ourselves as working in harmony with it. This chapter sets out a way of working that follows Goethe’s indications on how to develop ‘new organs of perception’. The applicability of this to agroecology is as much to do with adjusting our own way of being for a better understanding of the land and our relationship with it, as it is about how or what to plant or harvest.

As we saw in the earlier chapter, key aspects of Goethe’s approach are: to hold back on theorising; to open oneself to the phenomenon being studied (be that a plant, an animal, a landscape or a farming community); to use our human faculties such as imagination, inspiration and intuition in the service of the thing being studied and to approach it as part of a whole that is in constant creation.

GOETHEAN OBSERVATION AS A CAREFUL PROCESS

Goethean observation as a means to come to know a phenomenon is widely recognised as having four stages (Bockemühl, 1985, Hoffmann, 2007, Holdrege, 2005, Seamon and Zajonc, 1998). This chapter draws from the training given by evolutionary biologist Dr Margaret Colquhoun and

others through the Life Science Trust¹ and the author's subsequent working with and studying this approach, to inform what is set out here.

The four stages are usually preceded by a preliminary stage of recognising one's habitual responses. In my own practice and my own teaching of this process, I place more emphasis on this pre-stage than others do. Perhaps, this is because I am a philosopher by training and thus am aware of the epistemologically controversial nature of claims such as 'being able to see how the world really is'. Moreover, this pre-stage is useful for highlighting that Goethean observation requires a challenging switch from our culturally habitual dualistic thinking to a more holistic thinking.

A real strength of the Goethean approach is that it lays out a formal staged process. Skilled practitioners will move between and meld these stages, but to begin with, it helps to explore them in a systematic way. This might seem and, at times, feel slow and pedantic, but the point is that we can follow consciously and rigorously what is happening in the world and in ourselves as the practice progresses. Experiencing this process can sometimes be unnerving or strange; for example, we may become aware for the first time of odd physical responses, insights or mystical states. However, we now have a careful record and thus a fuller understanding of this shifting relationship between our external and internal worlds that can then be moved into and out of by retracing our steps.

CHOOSING THE THING TO STUDY

As with any research question or journey of enquiry, we need to have a focus – what is it that you will be observing? For early practice with Goethean study, it is good to work with something that draws your attention in some way; not necessarily something you already know a lot about or for a practical purpose – that can come later when you are familiar with the method. Being able to find the thing that it would be fruitful to study is as much about waiting for it to call you, to just wander around and let something strike you. This requires patience and a child-like receptivity to hear what it is about the world that you are particularly suited to explore. Being drawn to something could be an attraction or curiosity or it could be a feeling of revulsion or challenge – a troublesome 'weed' plant, for example.

When teaching this approach, or helping people to familiarise themselves with it, I always recommend working with some aspect of the plant realm to start with, even if your later focus will be on an animal or landscape or something from the human realm such as an organisation or farm community. The plant was foundational for Goethe's understanding of his method of investigation. Practice with a plant yields benefits later on with more complex organisms, such as animals, and less responsive entities such as rocks. With a plant you can more easily reach an understanding of what these stages feel like and so be more comfortable about the process.

Before moving on, you need to have selected – or perhaps we can say you need to have been selected by – your plant.

PRE-STAGE: CLEARING THE WORKSPACE

Our ways of thinking, feeling, moving, responding and simply being in the world are shaped by our physical environment, culture, personal history and a whole web of interactions. Many of these are permeated by the dominant Western tradition of mind-body dualism, scientific reductionism and the practical concerns of survival. It is one thing to know this but quite another to escape it. Mind-body dualism, for example, shapes our language so that even to express how something

¹ The Life Science Trust organised a remarkable series of seminars through residential workshops (some 7 or 9 days and some 3 weeks), each focused on a particular realm of nature, for example, rocks or plants or animals. They were held over a number of years between the 1990s to 2000s at various venues in the UK and latterly at The Life Science Centre, Pishwanton in Scotland. Participants generally attended at least four workshops to experience this method with a range of phenomena such as: colour, the plant, the animal, the human skeleton or the landscape.

could be different involves using the language that has developed to embody how it is always assumed to be. For example, even when we talk of the environment, the use of ‘the’ separates us and places us outside of that in which we are actually environed. The process of Goethean observation is a honing of the human being as a scientific instrument. If this is what we are going to be engaged in, understanding the starting point – that is, our normal way of thinking and being – is going to be essential.

To clear the workspace, we need to take a preliminary look at what is actually there and how it usually works. In the Goethean process, this is done by approaching your chosen phenomenon in a normal, everyday way and then setting down your first impressions in whatever form they may take. Examples of the kinds of impressions that can emerge in this part of the process are: your habitual likes and dislikes, how you might use it, feelings of boredom or anger, snippets of information, inspiring ideas or urges to put something right and so on. What is different, and what makes this the pre-stage of a process, is that instead of acting on these impressions or continuing them with further thoughts or day-dreams, we consciously lay them out for inspection and then set them aside. Keeping a record of these thoughts and feelings is an important part of the process. By naming attitudes and presuppositions that are in the background, you can spot when they might creep in to your work in the later stages of the process. That said, a first impression may be very perceptive and its veracity may re-emerge later on.

What should become apparent is just how much the Goethean method involves self-examination and critical reflection. It is a qualitative approach to the world, but not one that revels in undisciplined subjectivity.

Before moving on, you need to have made some notes about your usual thoughts and feelings about your phenomenon. A small journey into speculation about the origins of those attitudes can be helpful, but without holding up the next stages of the process that need to be worked through far more slowly.

STAGE ONE: EXACT SENSE PERCEPTION

The first proper stage is characterised by standing away from that very personal first encounter and observing the phenomenon freshly. Try to experience your chosen phenomenon as if you had never seen it before. From that perception, begin to record all that you can about the phenomenon. Recording as you go is important: have a note book and writing/drawing materials to hand. It is important to remember that you have multiple senses, so don’t just concentrate on sight. With plants, smell and texture are obviously important as is, for example, response to the wind. Taste can also be explored – with caution (do check that your plant is not known to be poisonous before tasting it). You are in a process of meeting a being and, as the pre-stage emphasised, you need to do that on its own terms without overlaying it with your own preconceptions or normal ways of thinking. Not only personal feelings, but also any known theories about a phenomenon need to be held back in order to let the ‘facts’ speak for themselves. This practice can be seen in Goethe’s extraordinarily detailed observations of colour phenomena. Rather than draw hasty hypotheses or work from an existing theory, such as Newton’s, his painstaking investigations followed every conceivable avenue of experimentation (Sepper, 1988). Thus for Goethe, finding out about the nature of colour involved aspects such as: complimentary colour afterimages, how artists use colour, how dyers use reagents and so on, rather than just the latest ideas on colour from physics.

Recording your observations can be done in a number of ways such as writing detailed descriptions. However, drawing the phenomenon is one of the best ways to focus your attention on the hitherto unnoticed detail and the relationships between parts. If your aim is to really see a particular tree that happens to be an oak, drawing can be very helpful to prevent you slipping into your usual ‘seeing oak trees’ mode of perception. Artists have the additional problem of having to avoid their personal ‘drawing style’ influenced mode of perception. The categorised artefact that your usual mode of perception creates, must be ignored in order to let you see the oak tree as if you had

not seen one before.² Such exercises can include drawing the outline of a plant without looking at the paper, using shading for depth with no regard for actual shades or shadows, or creating the form by shading the outside area of the paper as if chipping the form from a block. You could also use watercolour paint, pencils or pastels to mix the exact colour of different parts. One of the most useful drawing exercises, and this one should never be left out or cut short, is to draw from memory. You may think that you know everything about the appearance of a plant, only to have that assumed knowledge disappear the moment the plant is hidden from view. Drawing from memory by closing your eyes and building in your imagination the plant as you have come to understand it, is extremely helpful in trying to build the bridge – so crucial to Goethean science – between the phenomenon and the human being as a scientific instrument. You need to set aside any personal concerns about your ability to draw; the point is not to produce a beautiful picture, but to train your perceptions.

Another tool you can use is to ignore pre-existing knowledge, for example, the names of things, and instead to see and describe them outside of learned classifications. This restriction on nomenclature is helpful when sharing observations in a group. Finding a word that expresses what you are seeing rather than taking the ready-made one prompts more looking and thus more potential to see fresh relationships. Still, it is impossible to continue in exact sense perception indefinitely. To register all the great amount of variety and detail would be, as Goethe said, ‘like trying to drink the sea dry’. (1995: 24). Simply amassing facts about the phenomenon as a static object at the moment at which we are observing it will not allow you to really see what the thing is nor come to any firm idea of it. Exact sense perception is only the foundation on which the following stages rest and to which they return, when necessary, to compare conclusions reached by other means.

Jochen Bockemühl’s work on phenomenology (1985) uses the four elements (earth, water, air, fire) as a helpful way of characterising each of the stages. This first stage has an ‘earth’ quality: the solid facts are gathered, and the feel of the process here is one of careful exactitude. Although fascination with detail is appropriate, we should not get carried away. For some, this stage is experienced as being rather tedious, yet for others it is very satisfying, and such differences in themselves show something of our personalities. In the training mentioned earlier, we spent several days on each stage with our chosen phenomenon. With the plant it can be hard to stay in this mode, for example, you will be tempted to describe things as ‘growing’ or ‘wilting’ and generally anticipating future states or imagining past ones that you think you have known; it is quite a discipline to hold those imaginings back and stick with the present.

Before leaving the first stage, it is also worth mentioning that, in gathering information, you may also use secondary sources. It can be helpful to know what other people have discovered. For a plant, you could turn to some botanical knowledge, or the relevance of the plant in agriculture, herbalism, myth or even the language of flowers in mediaeval paintings. The important point about using secondary sources is to avoid them to begin with (apart from checking in regard to poison) and then have a sceptical eye and always return to the primary source, the plant itself, for verification. You need to be alive to the fact that with secondary sources you are gathering what other people have said and they could be working from presuppositions and not from the plant itself. Secondary sources might give you new ideas or other forms of access to your phenomenon or questions to pose for further investigation. On the other hand, it also gives you more material that you have to set aside in order to really see the plant.

Do not move on until you have a collection of drawings and descriptions and a solid feeling of getting to know the ‘what is’ of your plant. This will provide your anchor for the work ahead.

² A number of drawing exercises are helpfully detailed in Margaret Colquhoun and Axel Ewald’s 1996 book *New Eyes for Plants: a Workbook for Observing and Drawing Plants*.

STAGE TWO: EXACT SENSORIAL IMAGINATION

With the previous stage, you were attempting to capture what the phenomenon is presenting to you right there in the present. The activity was about being exact about what you see, hear, feel or smell etc. but the entity you are studying cannot really be captured in a frozen present. It exists as a process, and so to get to what it really is, you are going to have to live into that process yourself so that you can begin to accompany it in its being. We do this by using the human faculty of imagination, but not imagination as we often think of it in the human realm as distanced from reality. Imaginative activity in Goethe's sense is called by him 'exact sensorial imagination' (Bockemühl, 1985) and it builds on the rigour of the previous stage, but now it is set in motion. The aim of this activity is to perceive the phenomenon as a dynamic entity. Just as the previous stage required a certain policing of one's usual ways of thinking, our imaginations also need some schooling to allow us to stick with the phenomenon, not as we have come to know it as an entity frozen in time, but as a being in process. Working with a plant often draws us into this mode (observing growing, wilting, etc.), so you may have already ventured into it and had to hold back.

There is something dreamlike about this stage. However, because we have already lain aside our theories, our presuppositions and undergone a rigorous working in exact sense perception, our dreams are in the style of the phenomenon and not drawn from our own personal fancies. These experiences need to remain dreamlike, because any fixing of them will put us back into the first stage.

One of the easiest ways into experiencing this type of imagination, and seeing how it could lead to understanding something about a phenomenon, is through Goethe's work on the metamorphosis of plants. It is here that we can see his use of exact sensorial imagination as a kind of shift in consciousness that now connects with the phenomenon in a new, but nevertheless still rigorous, way. The most immediate easy experience of moving a plant imaginatively is through observing with plants at different stages of growth. For example, you could be studying a particular wild carrot (*Daucus corota*) but around it are others at earlier and later stages of growth or flowering or fading. Thus, you can imaginatively take *your* wild carrot backwards or forward in time using these others as indications of your plant's process. It is also possible to enter into the plant as a process in a freer way through what Goethe called its discontinuous metamorphosis. Many plants produce a sequence of different leaves, often beginning with a simple shape, becoming more differentiated and then contracting to a more pointed form and eventually there is a transition to the flower parts (Holdridge 2013:76). To school our imagination, we could imaginatively move through this sequence, as if from the inside of our plant. We could even imaginatively produce leaf forms that could appear in between those that are evident in the plant. This helps you to experience the plant as a dynamic process of metamorphosis as opposed to recording only its visual form. (If your chosen plant does not show any obvious aspect of this metamorphosis, you could practice with one that does, such as mustard, buttercup or groundsel, to get a feel for these changes before returning to your plant.) Jochen Bockemühl, whose work makes extensive use of leaf sequences, explains the process and shows just how different this kind of watery perception is from the earthy style exact sense perception of stage one.

With the mode of observation corresponding to the watery element, it becomes possible to go beyond the single elements of form and reach a realm not directly accessible to sense perception; here the sequence of forms appears as formative movement, and the formative forces can be experienced. If something is observed as an object, it is always seen from the outside, it is seen separately and seemingly from all sides at once. There, one's own standpoint is unimportant. The object exists without me. If, however, one begins to become aware of the formative forces in the way described, one's own inner activity (intentionality) and one's own position within the whole becomes significant.

Bockemühl (1985: 21)

With any living entity, it is easy to move into this second stage because the phenomenon simply seems to require it. We cannot capture the livingness of a plant if we stick with exact sense

perception. Our thinking in that mode is too static to live into the phenomenon and experience it as changing and growing. Something of the phenomenon has to live in us if we are to make a connection between, for example, the sapling and the tree. Our thinking has to be mobilised to grasp the becoming of nature and the way nature is constantly creating. Although we know plants grow and change in ordinary consciousness, here we experience it afresh and understand it in a new way.

It is imagination that makes this mobilisation of our thinking possible. In this mode of perception, we are living in the phenomenon as a process. We are imaginatively engaged in those same processes. We need to enter this not by bringing in human meanings but by living in the phenomenon as the being it is. Although we cannot leave our humanity out of the picture, as this is the source of our imaginative ability, in this and the stages that follow we are placing our faculties *in the service of the phenomenon*. Exact sensorial imagination leads us to a holistic apprehending where we understand, for example, the plant as a metamorphosing possibility, connected to its place and to the plant realm.

Exact sensorial imagination exercises to help here include imaginatively growing your plant through a whole life cycle or imaginatively taking your plant through the seasons. The richer the pictures you can build, for example, the changing light, the changing insect visitors and so on, the more you will be sensing into the plant. Growing the plant in your imagination before sleep can be very helpful for continuing your study the following day. It seems to connect you with that dream-like realm that is needed here and it facilitates the later stages.

You could also try, with care, ‘imagining it otherwise’ (Brook, 1998: 55). This is where you purposely misuse your imaginative faculty to impose something on the plant, for example, imagining an ash tree is evergreen. The purpose here is to feel for a response. By now, you will be in a relationship with the plant and will feel (perhaps viscerally or emotionally) the wrongness of your imaginative fancy. Such a response kick helps to get you listening in to what is really there and tuning into where insightful responses might come from in your own body.

It is the plant realm that gives us a clear picture of the need for this shift in our thinking if we are to understand a plant as a plant and not just as a marker in our system of classification or an entity to be utilised. This is where we can first detect that the empiricism, which in the first stage seemed exacting and pedantic, is now on a path to what Goethe termed a delicate empiricism. Delicate because it does not impose a theory, and neither does it deny the human faculties their role in coming to know the world. Rather, the faculties have to treat the world with delicacy in order to find it, rather than just find humanness reflected in it.

Ensure you have felt the shift in consciousness into this dreamy, watery style of thinking and feeling before moving on. You should now be able to move freely into and out of the phenomenon and carry something of its being in your consciousness.

STAGE THREE: SEEING-IN-BEHOLDING

Once you can shift your thinking into that fluid mode you can build up the phenomenon imaginatively through its changing forms. However, this still feels somewhat attenuated. It provides the training of the imagination so that you can now move on to tuning in to the phenomenon as it is, as a living whole, rather than as parts you bring together imaginatively. The element here is air. For this, you need to move even further back from your ordinary way of engaging with the world; you must even quiet your imaginative activity in order to make space for the phenomenon to present itself.

You need to be like air, not flowing through the forms like water, but making them visible. Using elemental language to describe these stages does not mean that we are looking for particular characteristics in a thing. You are not looking for airy aspects of the phenomenon; instead what you need to do is to be airy in your own consciousness. Bockemühl describes the way the observer must be:

It is characteristic of air to expand in all directions, offering its own being and activity in order that the being and activity of another can appear. Insofar as we move inwardly in accordance with this image

of air, we reach the cognitional attitude corresponding to the air element. An inner readiness is thus created for that which manifests in the world to reveal itself in us, as an image which discloses a being.

Bockemühl (1985: 26)

It is the human faculty of inspiration that now offers itself to the phenomenon. Through your stillness, the phenomenon can present its real self, and this is often felt as a particular gesture, a gesture that somehow speaks or presents that phenomenon. The insights that arrive in this third stage can seem strange to your normal ways of thinking. It can be exciting or emotionally moving, and because what arrives seems foreign to yourself, this enhances the sense that it is given to you. It should feel like something received rather than made. These received indications can be captured and explored in some form of artistic representation where gesture and meaning are brought out and the inner mood is expressed.

You might find that this inspirational stage is best expressed in emotional language, which is paradoxical as it is far from the normal, self-absorbed emotional subjectivity. Working artistically with colour can also help to deepen the indications that arrive. What should be expressed is the being of the phenomenon, something of its essential nature. Again, do not be concerned about any lack of familiarity with, for example, writing poetically or painting, it is the process of attempting that is important.

Stage one gave us the solid facts that anchored our imagination to the phenomenon and allowed us, in stage two, to enter into the livingness of the phenomenon, which in turn gave us enough familiarity with it to see through to and express its inner/fundamental gesture. This gesture of the whole can push us into the fourth stage of being-one-with the object (Goethe, 1995: 75).

Make sure you have captured any insights into the gesture of your phenomenon. This can be hard to record in language or image, but try to get something down. The process of writing, painting, moving or singing etc. is not just representation of the insight, it helps you to live into the insight and to feel it more deeply.

STAGE FOUR: BEING ONE WITH THE OBJECT

The first three stages of the Goethean method involve different activities and ways of thinking, and these could be characterised as first using *perception* to see the form; second, using *imagination* to perceive its mutability and, third, inviting *inspiration* to reveal the gesture. The fourth stage uses *intuition* to both combine and go beyond the previous stages. Here we experience the ‘what it is’ of the phenomenon in its full power and potentiality. It is here that the phenomenon can be understood, and it presents itself to the human being as an idea or even a theory. Thus, in the Goethean process, we do not start with theory and overwrite the phenomenon with our own thinking, instead we place our human thinking and theorising capacities at the service of the phenomenon.

In terms of the elements, the shift in consciousness we now need is fire. This fourth stage is also the most physically abstract, having the least connection to the outer appearance of the phenomenon. However, that abstraction from the specific allows the perception of what is essential to the inner nature of the thing. Bockemühl calls this an experience of the ‘being’s beingness’. He expresses the fire stage thus:

We are here at the limit of what can be called a mode of observation. The warmth enters us – our inner activity itself becomes an organ. We do not experience the outer expression of a being, we become aware of its inner impulse. At these moments of inner identity, all outer manifestations disappear. They are ‘burned up’.

Bockemühl (1985: 30)

Fire or warmth is also suggestive of another feature of this stage: the connection to the inner impulse of the thing comes about through our own inner impulse to act. At this point, we are prompted to

action, not only in the sense of wanting to express something of the being, as in the third stage, but to *do something about it*. We feel ‘fired up’. Because of the journey that precedes it, this is not a subjective expression of your own personal will. The intention is to combine the being of the phenomenon with the human ability to both think and to act in the world.

How you arrive at this is harder to explain, in my experience it just arrives suddenly when working in stage three. It is as if from the acquiescent air process, where our usual thinking is held back, concept or idea or determination suddenly arrives, but with a strange clarity, a kind of shininess, that is unlike one’s normal thought processes or perceptions.

In teaching this method with groups, particularly with regard to landscape, it is interesting to note the difference between a pre-stage impulse to do something – make a change, clear an area, develop a path – and an impulse that arrives out of combining one’s thinking with the phenomenon. The pre-stage and the four steps are intended to bring us to a point of understanding and collaboration with the phenomenon. Now we are in a position to move forward, to act in unison with the phenomenon.

CONCLUSION

The stages with their indicative elements and human faculties emphasised can be summarised in Table 20.1 for ease of reference.

Once you are familiar with the shifts in consciousness of these four stages by experiencing them through a journey or two with something from the plant realm, it is possible to branch out to other realms and take a phenomenon such as a rock, or an animal. In terms of agroecology, this approach is particularly helpful when considering actions involving whole landscapes or particular areas of a farm or garden. Within a Goethean process, if you want to make changes inspired by insights from the fourth stage, you need to move forward further into a new set of phases that mirror the previous stages (3, 2 and 1). This is about testing out and double-checking a planned action before landing it (earthing it) in the world.³

This approach is a means to begin the process of undoing our habitual dualistic patterns of thought, and nourishes new organs of perception that are receptive to, and respectful of, nature so that we might begin to glimpse what nature really is, what place we have within it and how we may collaborate or co-evolve with it.

How might such an approach impact on agriculture or agroecology? To some extent, this can be seen in biodynamic agriculture where, for example, understanding the whole farm as an organism captures something of Goethe’s holistic vision. This should be no surprise as we saw in my previous chapter in this book how Rudolf Steiner’s work on the Goethe archives influenced his approach to agriculture. However, as the presentation of the stages of the Goethean method above has shown, this should not be viewed as a system to be applied, rather, it is about a personal engagement and the

TABLE 20.1

The Four Stage Goethean Approach and Related Human Faculties and Elements

	Stage	Human Faculty	Elemental Feel
1	Exact sense perception	Perception	Earth – solidity
2	Exact sensorial imagination	Imagination	Water – flowing
3	Seeing in beholding	Inspiration	Air – surrounding but ephemeral
4	Being one with the object	Intuition	Fire – fast, concentrated

³ A *useful* discussion of these mirrored steps with practical examples can be seen in Christopher Day’s 2003 book *Consensus Design: Socially Inclusive Process*.

transformation of your thinking and your being for more responsiveness to the climate, land, people, animals and plants that form the basis of the agroecological vocation.

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21 Intuitive Farming

Heart-Based Decisions for Harmony in Agricultural Ecosystems

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INTRODUCTION: INTUITIVE COMMUNICATION AS AN AGE-OLD PRACTICE

Intuition is seen as a crucial component of decision-making in various fields, including psychology, business management, neuroscience and medicine. Most judgements and decisions rely on intuition to some degree, often because of time constraints and the virtual impossibility of obtaining ‘complete’ information (Kahneman, 2003; Nuthall and Old, 2018). Over the last three decades, agricultural science has also started paying attention to intuition, largely due to the growing awareness of different ‘ways of knowing’ that exist in indigenous and traditional agricultural systems (van Eijk, 1998). Yet the importance of farmer intuition remains peripheral to mainstream agricultural research, even though a review by von Diest et al. (2020) revealed that farmers in dairy, stock cattle, vegetable and mixed farming systems across various countries often prefer an intuitive approach over formal management tools and concluded that enhancing farmer intuition may improve decision-making.

Intuition allows access to tacit (internal, informal) knowledge that is not available through analytical processes, and which can aid holistic decision-making (Hogarth, 2010; Nonaka and van Krogh, 2009). Decisions that are ‘holistic’, from *holos* (Greek) meaning ‘whole’ (Smuts, 1926) consider more information or factors than using only rationale/logic, offering a more complete perspective of the situation in question.

Intuition also informs interspecies communication (two-way dialogue between humans and other-than-humans) (Erickson, 2011; Kieft, 2015; Kulick, 2017), which can bring additional, potentially valuable information to decisions. Sometimes called intuitive communication, this has received even less attention from agricultural science than intuition itself. While considered to be

‘New Age’ (Kulick, 2017), this phenomenon is supported by a century of scientific evidence (Dutton and Williams, 2009; Erickson et al., 2016), as well as in grey literature.

Indigenous cultures worldwide share the notion that maintaining a dialogue with other-than-human elements of their food production landscapes is crucial, for practical management reasons, as well as to evolve new strategies to adapt to changing conditions (Gagliano, 2013; Kieft, 2015; Parry, 2005). Even in the West, numerous organisations and intentional communities have been founded and operate with the belief that interspecies communication can be used to inform everyday practical decisions, including in food growing, such as the Findhorn Foundation (Scotland), Tamera (Portugal), the Damanhur Federation of Communities (Italy), Perelandra Garden (USA), Cooperative BioBalance (USA), and Govardhan and Auroville (India).

The existing evidence of the use of intuition and intuitive communication in food growing warrants more attention by both farming research and practice (van Eijk, 1998).

DEFINING INTUITIVE COMMUNICATION

DEFINING AND UNDERSTANDING INTUITION

Academic literature on intuition emanates largely from the fields of psychology and business management, and while these fields provide no unifying definition of intuition, they concur that it is an immediate, pervasive and involuntary part of all decisions and provides highly useful information beyond analysis (Dane and Pratt, 2007; Hogarth, 2010; Khatri and Ng, 2000).

A critical review of intuition from the nursing profession provides further interesting pointers as to its characteristics (King and Appleton, 1997). The authors explain that intuition is often described in terms of ‘gut feelings, sixth sense, insight, instinct, presentiment, common sense, inner feelings, hunches, pre-monitions, foreboding and presentiment’ (ibid: 195). They suggest that, because of this non-rational element, scientists have deliberately sidelined it. Yet the authors stress that nursing would change dramatically if, or when, all forms of knowing are recognised as valid. Here, we may see parallels with the sidelining of intuition in the agricultural sector, as indicated earlier.

The etymology of intuition, stemming from *in-tuir* (Latin), offers another useful definition as ‘knowing from within’, in other words ‘knowing without knowing how you know’ (Hodgkinson, Langan-Fox and Sadler-Smith, 2008). Carl Jung identified intuition as one of four basic functions of the conscious psyche required for holistic orientation, along with thinking (comprising the intellect and logic), sensation perception (using sense organs) and feeling (more subjective valuation). Jung defined intuition as ‘perception by way of the unconscious, or perception of unconscious contents’, which enables humans to ‘divine hidden possibilities in the background’ (Jung, 1933 [1921]: 567–568). Jung’s definition remains widely accepted in mainstream psychology and management science, characterising intuitive decisions as those where one is not lucidly aware of the process preceding the decision (Dane and Pratt, 2007).

Yet, about two decades before Jung, Rudolf Steiner (whose lectures on agriculture form the basis of biodynamic agriculture) also examined intuition. He believed that intuition operates at a superconscious level, surpassing the intellect, which, when developed together with imagination and inspiration, enables super-sensible perception, i.e. perception beyond the five physical senses (Steiner, 1967). Steiner described intuition as one aspect of spiritual knowledge, and it may be for this reason that his interpretation is far less commonly acknowledged (von Diest, 2019).

In explaining how human cognition deals with information, social and cognitive neuroscience, psychology and related fields select just two of Jung’s four basic functions: intuition and thinking, to describe a dual-processing model. Here, the process of intuition is characterised as being fast, automatic, effortless, affectively charged (influenced by mood), associative (through pattern recognition) and not easily verbalised. This intuitive process runs simultaneously with the analytical or

rational process, which is slower, controlled, conducted with awareness, neutral and can be verbalised (Kahneman, 2003; Hodgkinson, Langan-Fox and Sadler-Smith, 2008; Keller and Sadler-Smith, 2019).

In an attempt to understand the mechanics of intuition, McCraty (2015) breaks it down into three types: implicit intuition – that is knowledge gained through tacit learning, which is the most commonly understood type; energetic sensitivity – when the nervous system detects and responds to signals in the environment, such as from electromagnetic fields; and non-local intuition – which is not limited to time and space, such as precognition or clairvoyance.

While intuition seems to operate with neural correlates across various regions of the brain (Keller and Sadler-Smith, 2019), the heart, which has an electromagnetic field 5,000 times stronger than the brain, seems to be involved in receiving, processing and decoding intuitive information and can respond to an event *before* it actually happens (McCraty, 2015). These considerations may explain both the immediacy of intuition and the possibility of the information originating from outside the body.

INTUITIVE OR INTERSPECIES COMMUNICATION

Some researchers have explored the associations between intuition and interspecies communication (Erickson, 2011; Kieft, 2015; McCraty, 2015). Dutton and Williams (2009) reviewed empirical and anecdotal evidence for animal psychic or paranormal phenomena (termed *psi*, such as is associated with non-local intuition), mostly between humans and domesticated or laboratory animals. The evidence supports the idea that there is *psi* communication between humans and other species, and the researchers conclude that future research in this area should carefully consider the assumptions around how *psi* is expressed and interpreted in animals. Erickson (2011) advises against clinging to conventional perceptions of human/animal communication. This accords with the discussion by Tompkins and Bird (1973: 22–24), on the scientific evidence for extrasensory perception (ESP) and communication between humans and plants.

Intuitive interspecies communication is described, not as a one-way flow of information, but as a dialogue, and the information is often conveyed somatically (through the body) in the form of feelings, sensations and emotions. From both epistemological and phenomenological perspectives, this makes it difficult to accurately translate into a linguistic form, and the authors call for an expansion of the theory of language, as well as the vocabulary (Gagliano and Gimonprez, 2015; Kulick, 2017). For example, the terms and concepts of ‘noetic ecology’ – the different ways of knowing nature (Zylstra et al., 2018) – and ‘ecofluency’ – the ability to fluidly and accurately communicate with other-than-human nature using an expanded spectrum of human sensory awareness (von Diest, 2019) – may help the exploration of the human–nature relationship through diverse ways of knowing and communicating.

APPLYING INTUITION IN FARMING

EMERGING RESEARCH ON INTUITIVE COMMUNICATION IN FARMING

While there is growing evidence of farmers using their intuition, Kieft (2006, 2015) provides the earliest published scientific research in English on intuitive communication informing practical management decisions in agriculture. Surveying farming practices in Europe, Sri Lanka and South America, he found that additional practices such as meditation and dowsing assisted in conversing with nature. Importantly, the reliability of intuitive information depends on one’s paradigm,

A set of ideas and assumptions on how people perceive life, beings, things, the natural and the super-natural and the processes in the world around them - determines what questions you ask, how you try to know nature, and hence how you farm.

Kieft (2015: 182)

Building on Kieft's work, a qualitative study was conducted between 2014 and 2020, through Stellenbosch University, South Africa, in collaboration with Coventry University, UK. The study included semi-structured interviews with 17 farmers and food gardeners in South Africa, the Netherlands, the UK, Italy and China. The following two cases are presented here as examples.

Case Study 1: From Conventional Dairy Farming to Dancing with Cows

In the Gelderland Province in the Netherlands, is a fourth-generation, family-run dairy farm, which by local standards is large, covering 50ha and with a herd of 90 cows. It converted from a conventional to certified organic system in 1991, and in 2004, it became the first dairy farm in the Netherlands to stop using antibiotics and vaccines.

The farmer explained that the transition to chemical- and pharmaceutical-free farming was a struggle: while they continued to use a logical approach to select which of the more than 300 homeopathic remedies to apply, their success rate was only around 50%. However, when they started using their intuition, their success rate rose to between 80% and 90%, and they now rely almost entirely on intuition and interspecies communication to determine whether or not, and how, to apply remedies to the soil and to their animals. By 2014, the incidence of all diseases on their farm was so low that they were only having to apply three homeopathic remedies a year.

Soon after the family decided to stop cutting the horns off their cows, realising that it plays an integral part in their digestive and immune systems, and the 'identity' of the cows, they rebuilt their barn to a design that came from a conversation with the cows, in order to make them more comfortable. This design was oval, more spacious and open on all sides, and other farmers in the region have since copied their design. Over the past 10 years, the farm's dairy products have received local and international awards for their quality, and the family report feeling more satisfied with this method of decision-making. A documentary film 'Dancing with Horned Ladies' portrays their journey.¹

Case Study 2: Partridge Avoids the Pear Tree

In the Yunnan Province of China, near Kunming, is a farmer who applies Pure Land Buddhist practices in his red pear orchard, in particular playing recorded chantings of Amitābha Buddha's name to the orchard, changing the music with the seasons. He commenced planting the orchard in 2003 and now has 84,000 trees on his 1,300 mu piece of land (86.7 ha/214 acres). He applies no synthetic fertilisers, herbicides or pesticides and uses natural farming methods that surpass Chinese organic standards.

Under the guidance of teachers, he also learned to converse and negotiate with insects and small animals 'through will and thoughts' (intention), feeling and seeing the messages that come from nature. He uses 'truth, love and sincerity' to communicate with the plants, birds and insects on his land, treating every living being with equal respect, no matter its size.

Every day, he requests from the birds and insects that they only eat the fruit in the 26 mu area (2% of the total orchard size) that he has designated specifically for them as 'free food', and to leave the rest of the orchard for human consumption. The result is that, in the designated area, the incidence of bird and insect damage on fruit and leaves is now 86% on average, but in the main part of the orchard, the damage is negligible (usually <6%), yielding an average harvest of 94% of intact, high-quality pears. Although his yield is about 70% of what other local pear growers obtain with conventional methods, the quality of his produce is three to four times higher across several

¹ <https://vimeo.com/ondemand/dancingwithhornedladies>.

quality parameters. There are now over 500 species of flora and fauna living cooperatively and ‘like a family’ in the orchard. The farmer maintains that this makes him feel happy and fulfilled, and for him, it demonstrates that animals have full awareness and consciousness and can communicate with human beings who choose to do so and who treat them with sincerity and love, thereby coexisting in harmony and prosperity.

This success in managing crop damage reported by the farmer in Case Study 2, through designating a portion of the crop’s area for other-than-human consumers, is similar to other cases in the study. Overall, the 17 case study farms report similar benefits to those described by Kieft (2006, 2015), such as reduced inputs and improved quantitative and qualitative outputs, resulting in greater profit margins, healthier farm systems and a more satisfied feeling regarding their decision-making. Of particular interest is that several farmers noted that they felt the heart played a role when receiving intuitive information.

THE TRANSFORMATION OF THE INTUITIVE FARMER

Regenerative agriculture is knowledge intensive, and transitioning towards this approach requires that the farmer has access not only to more knowledge to aid with analytical thinking, but also to greater sensitivity and better ‘knowing’ of the systems with which he/she is working. The process of developing intuition offers this access, involving a transformation of both the farmer and his/her worldview, which, in turn, leads to a deeper, more balanced and harmonious relationship with nature (Cox, 2014; von Diest, 2019; van Eijk, 1998; Kieft, 2006; Paxton et al., 2017).

As we have seen, intuition is not easily articulated, and while it is not emotional *per se*, it is affected by emotion, which can affect the decision-maker’s confidence and thus its accuracy (Hogarth, 2010). For this reason, Nuthall and Old (2018) argue that reflexive processes are required to help refine the reliable and confident application of intuition in decision-making. These processes include managing emotional triggers, observation and feedback with oneself and others, and gaining experience in a particular field of expertise. Nuthall’s book, *The Intuitive Farmer: Inspiring Management Success* (2016), based on extensive research by the author, is the only existing handbook that the author is aware of for developing intuition in management, which is aimed specifically at farmers and farm managers and offers accessible principles and guidelines for reflexive practices.

In a study on what constitutes healthy farm management, involving 79 farmers in Austria, Germany and the UK, Paxton et al. found that

learning to be intuitive meant that farmers had to dare to listen to their intuition regardless of rational explanation and, occasionally, in the face of criticism. The farmers felt they improved their capacities for managing farm health through mindful self-reflection and self-observation, meaning that farm health depends heavily upon personal development.

Paxton et al. (2017: 84)

Sadler-Smith and Shefy (2007) and van Eijk (1998) emphasise the value of meditation and mindfulness for developing intuition, as well as metacognition. Similarly, Erickson (2011) states that calm emotional states are more conducive for not only intuition, but also interspecies communication, and these states may be attained through regulated breathing and meditation practices, as well as other lifestyle changes aimed at stress reduction, including good nutrition, exercise, adequate rest and spending time in nature.

Several authors stress that improving somatic awareness is essential for accessing tacit knowing through intuition (McCraty, 2015; Nonaka and van Krogh, 2009; Sadler-Smith and Shefy, 2007). As Kieft (2015: 183) put it: ‘if we learn to better communicate with our body, we are also opening our mind for communicating with nature in a wider sense’. Developing a heightened

physical sensitivity may involve muscle testing or kinesiology, or using instruments such as a pendulum or dowsing rods (Kieft, 2006). Physical rituals are also important as they reduce the neural signals related to both performance anxiety and the impact of experiencing failure (Hobson et al., 2017).

As well as increasing somatic awareness in general, several authors also concur that the heart plays a central role and more attention should be paid to this aspect (Erickson, 2011; Kieft, 2015; McCraty, 2015). McCraty (2015: 52), in particular, explains how coherence between the heart's rhythm and the brain can be intentionally activated by focusing on positive emotions, thereby bringing intuitive signals of all kinds to the conscious awareness.

Various works by Steiner, including *Knowledge of the Higher Worlds* (1923 [1904]), provide instructions for developing self-awareness, as well as the capacities of intuition and intuitive communication. Other practical handbooks for developing these capacities include those by Andeweg (2009), MacManaway (2013), Conroy and Alexander (2014), Gurney (2001), Williams (2003) and Raven (2012). All these authors and many others recommend four common critical aspects: (1) to seek the truth through allowing the heart to guide decisions, (2) to meditate as a daily practice, (3) to spend time in nature, silently, and (4) to remain grounded. As Kieft (2015: 184) explains, 'the intuitive or 'sensing' techniques applied by farmers look very much like the way the mystic describes his/her access to deeper information'.

Based on the above, this author proposes that becoming an intuitive farmer is a journey of personal development and transformation, requiring courage and dedication. This may require psycho-social support, which is not currently available from mainstream agricultural organisations. Therefore, attention is required from not only farmers but also farm support services, researchers and policy-makers, to provide the supportive and enabling frameworks for farmers who wish to develop their intuitive capacities and thus become co-creative decision-makers with their farm ecosystems.

CONCLUSIONS

There is no unifying definition of intuition, but it is clear from the existing research that intuition is fast, is an inevitable part of all decision-making and provides useful and accurate information beyond whatever analytical approaches can access. The small, but growing, evidence base on the practical value of intuition and intuitive communication in farm management decision-making indicates that it deserves more attention from agricultural research and practice.

Some authors have found that intuition may also play a crucial role in intuitive or interspecies communication. Emerging research, such as the two case studies of intuitive farmers presented here, suggests that this co-creative approach to food growing holds the potential to offer farmers more agency, autonomy and confidence, to make better-informed, customised and more environmentally appropriate management decisions, not least because they gather direct feedback from the other-than-human.

Methods for developing intuitive capacities already exist for farmers. All of these methods emphasise the need to willingly and actively self-critique and manage emotional triggers, which may be supported through increased awareness of somatic sensitivity. The process of personal transformation in the development of intuitive capacities may be challenging and lengthy. But perhaps the transformation of the farmer in the search for inner knowing may be what is needed to help transform mainstream agriculture towards more regenerative, harmonious engagement with nature.

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22 An Investigation of Sustainable Yogic Agriculture as a Mind–Matter Farming Approach

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INTRODUCTION: A PARADIGM SHIFT FOR FARMING PRACTICE?

The global convergence of ecological, political, social and economic crises demands that ‘business as usual’ cannot continue. The global environmental and human health problems resulting from industrial-chemical agriculture have not gone away and are increasingly apparent in the public domain (IPCC, 2019; IARC, 2015; UNCTAD, 2013; UNCCD, 2011). Proposals from within the dominant paradigm that advocate further techno-fixes are no longer convincing or appropriate; as author Charles Eisenstein states, we are living in a liminal time ‘between stories’ (Eisenstein, 2013: 6). From an epistemological perspective, Santos (2014: 233) argues that global social justice is impossible without global cognitive justice and that we are in a transition period in which the problems created from the cultural and political confines of Western modernity have no modern solutions.

The alleged universal norms of modern industrial society, with its overriding emphasis on materialist science and technology as a means to subjugate nature, are a lingering Western colonial legacy. The ontological and epistemological premises of materialism continue to be challenged on the periphery by indigenous cultures, for example in the academic literature on decolonisation. Santos (2014: 188) refers to an existing ‘sociology of absences’ and calls for an ‘ecology of knowledges’ that enables alternate ways of knowing and scientific knowledge to coexist. The intimate connection between spirit and matter has long been recognised in the spiritual traditions and worldviews of indigenous cultures worldwide (Aikenhead and Michell, 2011; Ramsay, 2012a) and remains so in the world’s social majority (Apffel-Marglin, 2012). In recent decades, the growing field of quantum

mechanics within the Western scientific establishment reveals synergies with indigenous world-views on the underlying nature of reality (Craven and I'poyi, 2009).

In the farming context, the application of invisible, non-material and spiritual practices is neither a radical nor a new suggestion. For over 10,000 years of farming, such practices were incorporated into agricultural life up until very recent times even in the West (Bellwood, 2005). The proposition of this chapter is that part (at least) of any transition towards a more healthy and regenerative global agriculture will not be found within the confines of the Western industrial worldview and its dogmas need to be overcome so as to include invisible, non-material and spiritual practices to supplement and perhaps alter the existing material ones.

RESEARCHING SUSTAINABLE YOGIC AGRICULTURE

One farming approach that recognises and works with the invisible, non-material dimension is Sustainable Yogic Agriculture (SYA). This system originates from the Brahma Kumaris spiritual movement, founded in India by Dada Lekhraj Kripalani in 1937, and which now has a global presence with 8,500 centres in 110 countries (Brahma Kumaris, ND). The Brahma Kumaris worldview is derived from Vedic cosmology and holds that all human beings are pure souls inhabiting a physical body. It states that soul consciousness, having traits of purity, bliss and love, is to be considered as one's true nature rather than the more common body consciousness, the latter being the cause of humanity's present afflictions (Ramsay, 2012b). The SYA initiative was launched in 2008 by the Rural Development Wing of the Brahma Kumaris World Spiritual University (RDW, 2009). SYA is premised on the philosophy that 'as the food, so the mind and as the mind, so the body'.

Given that SYA is little known as a farming system, a research study was developed to understand its methods and to ascertain its performance and potential. This was undertaken through a literature review followed by a field trip to SYA farmers in Rajasthan and Gujarat provinces, close to the Headquarters of the Brahma Kumaris at Mount Abu from 8 to 23 November 2017. Permission was necessarily obtained from the headquarters. Taking an inductive approach, the study assessed the findings against existing scientific evidence about the practices being performed.

In terms of scientific literature, only one peer-reviewed paper has been published on SYA (Pandey et al., 2015). Because of this dearth of research, non-peer-reviewed and grey literature is also taken into account in this chapter, including a further 12 publications that were only accessible in hard copy form at the Brahma Kumaris Headquarters.

The field study visit comprised a group interview based on a pre-prepared, semi-structured questionnaire that was conducted with eight farmers practising SYA. A translator was present to enable the discussion. This meeting was organised by the Brahma Kumaris Rural Development Wing, which also selected the participants, all of whom were members of a Gujarat-based SYA group consisting of 30 farmers. All were male and in an age range of between 40 and 60. The area of the farmers' holdings dedicated to SYA was small, averaging 1 acre, and did not cover all of their landholdings.

A field visit was also made to the Brahma Kumaris Demonstration Farm, 'Tapovan', located near the global headquarters at Shantivan, Mount Abu. This 5-acre horticultural farm has been managed as an SYA demonstration farm for the past 3 years, hosting educational visits by thousands of conventional small- and medium-scale farmers from within India and abroad.

Using an ethnographic approach, questions were put to the farm manager and a representative from the Rural Development Wing.

RESULTS: AN OVERVIEW OF SYA METHODS AND PRACTICES

THE ORIGINS OF SYA METHODS

SYA came into being as a result of observations by Indian farmers practising meditation in their fields to improve crop health. Their methods were brought to the attention of the Brahma Kumaris

Rural Development Wing (RDW), which subsequently developed and launched them as an initiative to improve the lives and livelihoods of farmers (Ramsay, 2012a). Ramsay (2012a: 118) defines SYA as ‘a unique form of farming that combines thought-based meditative practices with the methods of organic agriculture’. SYA sets its foundation on standard organic principles that prohibit the use of non-organic fertilisers and biocides. The metaphysical or subtle element of meditation is subsequently added as a core component of all farming practices throughout the year.

THE METAPHYSICAL COMPONENT: PRACTICE OF RAJA YOGA MEDITATION

SYA farmers are firstly trained in the practice of Raja Yoga, a style of open-eyed meditation taught by the Brahma Kumaris that is inspired by ancient Indian practices. The method is described in the SYA Manual (RDW, 2009: 21–22) and summarised as follows:

The first step of Raja Yoga Meditation is to attain the soul-conscious stage. Pure thoughts are the source of pure vibrations, and pure vibrations create a pure atmosphere. After having entered into such a state, if you think positive about any person, animal, or vegetation irrespective of where they are, very far or very close, our vibrations reach them and activate every gene.

The manual also states that the ideal time to perform this meditation is between 4 and 5 am (part of the time period referred to as ‘Amrit Vela’). Farmers should also transmit positive intentions outside this time period during specific farming activities. These regular meditation sessions can be conducted remotely or in the field, with focused thought practices and affirmations to support each phase of the crop growth cycle, from sowing, irrigation and growth to harvest and soil rehabilitation (Ramsay, 2012c; RDW, 2009). As well as focused meditation on the field crops, Ramsay (2012c) describes the practice of seeds being taken to local Brahma Kumaris meditation centres where experienced meditators focus thoughts of peace, non-violence, love, strength and resilience on them from between 10 days and 1 month prior to sowing. This is believed to enhance seed germination.

Examples of meditative affirmations for various stages and occurrences over the seasonal farming cycle are provided by Ramsay (2013a) and shown in Table 22.1.

Farmers are also encouraged to play music and sing spiritual songs while working in the fields, both for their own motivation and happiness and in the expectation that this will aid crop growth (RDW, 2009: 44). The ringing of bullocks’ bells was also felt to have a beneficial environmental effect (farm group interview, this study). Another cultural practice is the hoisting of red and yellow ‘Flag of Shiva’ 5 ft above the ground at regular intervals across the fields. This serves multiple purposes, some of which are metaphysical: it is a constant reminder to the farmer that he/she is tending God’s land, and that the land is under divine care even when the farmer is not present; and it acts as a reflector of sunlight onto the crops (RDW, 2009: 44).

TABLE 22.1

Affirmations Used by SYA Farmers at Specific Farming Events

Farming Event	Affirmation
Amrit Vela (4–5 am every morning)	I am the form of peace, filling seeds with peace
Ploughing the land	I am a soul who transforms the world
Application of organic inputs	I bestow fortune on the earth
Irrigating	I am a living river of wisdom
Incidence of disease	I am the form of silent healing power
Incidence of pests	I am the form of supreme purity

Source: Ramsay (2013a).

In the event of pest damage, farmers in the group interview explained that a farmer may enter a state of meditation with the aim of achieving pure soul consciousness. This feeling of soul purity is then vibrated onto the crop as being full of health and divine light and therefore capable of resisting the pests. On Tapovan farm, a case was reported where parrots were causing partial damage to fruits, and the farmer meditated and established a communication with the parrots, inviting them to eat some whole fruits and to leave others intact. This was reportedly successful. SYA was premised on the notion that the farm is not only for human beings but that animals and all other living things should also be accepted and have their rightful place on the farm.

While the SYA farmers in the group interview reported following the astrological calendar as part of their cultural tradition, Tapovan farm respondents explained that meditation rather than external influences was considered the primary force for ensuring crop health. Nevertheless, the SYA farmers felt that performing the meditation and sending love to distressed plants supported the use of traditional remedies, which, according to them, were generally effective.

According to respondents at Tapovan farm, the aim of teaching Raja Yoga meditation is to cultivate in farmers a feeling of connection to God, Self, the Motherland and cows – the holy animal of India, and that this inner transformation of the farmer will in turn transform the farm through right thinking and action. The early morning meditation takes place near the ‘Flag of Shiva’, which is hoisted in the field, and the visible results of the meditation typically manifest in around 2–3 months.

PHYSICAL SYA PRACTICES

As well as meditation and focused intent, organic farming techniques are applied. These include companion planting and integrated pest management (RDW, 2009). Such techniques were visible on Tapovan farm alongside rotations and the use of green manures. From a physical perspective, the red and yellow ‘Flag of Shiva’ also acts as a deterrent to grasshoppers, which allegedly lay eggs on the yellow part of the flag and subsequently perish (RDW, 2009: 44).

The production of home-made farm inputs is encouraged, and the SYA Manual provides instructions on how to prepare 11 specific soil, bacterial inoculation, pest management and fungicide preparations based on traditional practices using cow by-products and other local materials (RDW, 2009: 31–24). One such preparation is ‘Jeevamrut’, an organic liquid fertiliser. Farmers in the group interview concurred that it was vital to have a healthy soil with a good carbon content and microbial population, and this was attained through composted cow manure, cover crops and ‘Jeevamrut’ that serves as an inoculate of beneficial microbes.

Farmers explained that the use of tractors should be avoided as these compact the soil and that bullocks should be used instead, which are gentler to ‘Mother Earth’ (farmer group interview). The Brahma Kumaris believe that cows are integral to agriculture. Nevertheless, a tractor was used on the demonstration SYA farm as it was under pressure to produce food for the thousands of visitors to the Mt. Abu Headquarters (Tapovan farm).

FARMERS’ CODE OF CONDUCT

As well as the metaphysical and physical farming practices, SYA also comprises a specific code of conduct for farmers. This includes adherence to a pure vegetarian diet, the practice of abstinence from carnal desires, the avoidance of drugs and alcohol, goodwill towards others, remembrance of God and the early morning meditations (RDW, 2009: 44).

WHAT ARE THE IMPACTS OF SYA FARMING METHODS?

Results of Published Research Trials on the Impacts of SYA

According to Ramsay (2012c), the first SYA field trials were launched in India in 2009 by the Brahma Kumaris Spiritual University, involving 400 farmers from the central and northern regions.

Research trials have since been carried out with the cooperation of scientists from two of India's agricultural universities, Govind Ballabh Pant University of Agriculture and Technology (GBPUAT) and Sardarkrushinagar Dantiwada University of Agriculture and Technology (SDUAT).

In a peer-reviewed paper on SYA, Pandey et al. (2015) wrote up and consolidated the results of several of these trials. One trial by the Directorate of Wheat Research in Karnal focused on the growth, productivity and quality of bread wheat in the growing season 2011–2012, on three adjacent parcels of land in Gagsina village, Karnal, Haryana. This trial compared four treatments: (1) organic farmyard manure plus yogic meditation (SYA), with (2) organic farmyard manure (ORG), (3) non-organic fertiliser (NPK) and (4) a control (CTL). The results are shown in Table 22.2 (Pandey et al., 2015) and have been tested for statistical significance. The results show a difference in performance between the SYA and the other treatments. SYA outperformed the organic and control in the categories of biomass, grain yield and grain weight. It did better than the NPK treatment in terms of grain weight and protein content, matched in terms of grain yield. The NPK treatment outperformed the others for biomass. While a one-season trial is not sufficiently robust, the indications are positive.

Another trial, carried out by SDUAT, focused on yields of wheat grain and stover (leaves and stalks), which were assessed over 3 years (one harvest per year) from 2009 to 2012, under treatments of (1) traditional organic with farmyard manure (ORG), (2) traditional organic+yogic farming (SYA) and (3) non-organic (NPK). In this trial, there was no control. As can be seen in Figure 22.1, for all 3 years and for both grain and stover, the non-organic treatment outperformed the rest. Apart from the first season, SYA outperformed the organic treatment. According to Ramsay (2012c), other results from this same trial showed higher amounts of iron, protein and vitamins in the SYA treatment compared to traditional organic and non-organic methods.

Pandey et al. (2015) summarised another experiment of SDUAT in which the quality (protein and oil contents) and quantity (haulm and oil yields) of groundnut were assessed over three harvest seasons (2009–2010, 2010–2011 and 2011–2012), with treatments of NPK, traditional organic and SYA practices. Although the yields of haulm and oil were significantly higher in the NPK-treated plots than in the traditional organic and SYA for all three harvest seasons, the protein and oil contents in the SYA treatments were higher than for the NPK and organic treatments.

A non-peer-reviewed study by Raval (ND) from Tolani College of Arts and Science in Adipur, India, published on the Brahma Kumaris website, also explores crop quality. This study assessed the protein, carbohydrate and energy values of SYA versus organic treatments of soybean. While the SYA treatments outperformed the organic in all three categories, little other information was provided regarding the details of the trial.

TABLE 22.2

Trial of Bread Wheat over One Season, Comparing (a) SYA, (b) Organic and (c) Non-Organic Methods of Agriculture

Treatment	Biomass (q ^a /ha)	Grain Yield (q ^a /ha)	1,000-Grain Weight (g)	Grain Protein Content (%)
Organic+yogic (SYA)	81.31	31.46	44.28	9.13
Organic (ORG)	63.28	22.78	41.70	9.78
Non-organic (NPK)	94.59	31.81	41.74	8.03
Control (CTL)	61.89	19.76	40.92	7.75
Results compared with P = 0.05 (5%)	3.69%	2.48%	1.49%	0.51%

Source: Pandey et al. (2015).

^a 1q (quintal)=100 kg.

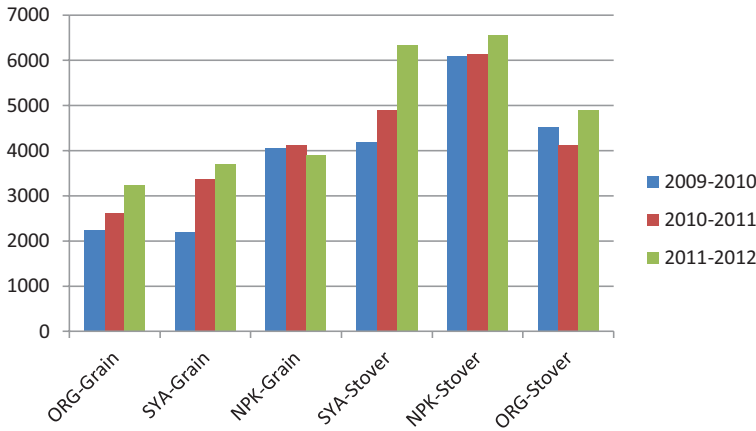


FIGURE 22.1 Bar chart showing yield (kg/ha) of wheat grain and stover from SYA, organic and non-organic treatments. (Adapted from Pandey et al. (2015).)

FARMERS' PERSPECTIVES ON THE IMPACTS OF SYA

RDW has published at least 38 anecdotal reports of a qualitative nature from farmers on the benefits of adopting SYA, which were collected by Brahma Kumaris members (Ramsay, 2013b) and SDUAT university scientists (Patel et al., 2011). These benefits are summarised in Table 22.3.

Farmers in the group interview also identified improvements in the health and quality of their land and soil after abandoning the use of agrochemicals, including increased microbial load and activity and increased beneficial insect populations. In addition, there were fewer incidences of wild animals and pests causing crop damage. Livestock was reported to be more peaceful following the meditation practice. Customers were willing to pay more for their SYA produce, which they perceived to be of better quality.

The farm environment was reported to be more pleasant, joyful and refreshing, and these changes had also been noted by visitors. They felt their villages had become cleaner, more peaceful and unified politically, especially during elections. Farmers perceived their families as happier because the heads of the household (themselves) were more peaceful. They also noted fewer problems associated with addictions to smoking, alcohol, opium and other substances, since they had to abandon these practices. Fewer doctor's visits were reported, and one farmer claimed to have cured his paralysis problems after adopting SYA and eating more high-quality plant food. Farmers reported improved inner strength and higher self-esteem.

Most farmers planned to expand the SYA techniques to a larger area of their holdings. However, sufficient labour was a limitation, and the farmers were concerned that any labourers could affect the health of the crops if they were drinking and smoking. Some farmers in the group interview felt that the SYA farming was harder work since organic inputs were not always easily available whereas agrochemicals were. For example, the cow urine required as an ingredient for the traditional preparations should come from indigenous breeds, but in Gujarat, 90% of the cows are cross-bred. Hence, farmers felt they had to be seriously committed to the practices. The SYA farmers reported that 3 years was the transition period required to restore biodiversity to the land and soil. The Tapovan farm respondents noted that many farmers did not believe it possible to farm without agrochemicals and were afraid to try alternative methods as they expected lower yields. At this demonstration farm, the rationale was to explain that the higher quality produce led to higher market prices, and this combined with lower production costs (owing to the savings on agrochemical purchases) made SYA farming more profitable than non-organic farming. To help farmers adopt SYA, the RDW is facilitating a system of farmer-to-farmer networks,

TABLE 22.3**Key Quantitative and Qualitative Benefits of SYA, as Described by Farmers**

Quantitative Benefits	Qualitative Benefits
Increased crop yield	Improved family relations
Increased crop nutritional content	Increased feeling of connection with livelihood
Decreased costs of production	Increased sense of well-being and purpose
Increase in the price per kilo of product sold	Increased sense of pride as a farmer
Increased plant resilience	Improved relationships among farming communities
Decreased crop vulnerability to pests	Reduction in emotions such as anger and frustration among farmers
Faster seed germination	Increase in emotions such as patience and forgiveness among farmers
	Incorporates cultural and spiritual meaning into work life
Easy incorporation with other methods of sustainable agriculture such as sustainable rice intensification	Brings together disparate social sectors into a common purpose with wide-ranging benefits

Source: Ramsay (2013b) and Patel et al. (2011).

where farmers experiencing difficulties were put into contact via telephone with more experienced farmers.

In terms of spontaneous farmer-to-farmer dissemination, almost all SYA farmers in the group interview explained that their neighbours were sceptical when they initially adopted SYA but after some time would notice improvements in the quality of their produce of farm, which made them more curious to engage in SYA.

Online references show that SYA has also recently received attention at a national level with the Indian agricultural minister advocating that farmers adopt SYA (BBC, 2015). Outside India, SYA has also been adopted by an arable farmer in Italy who claims to have maintained profits and increased grain quality (Kebio EU, 2016).

DISCUSSION: THE MIND–MATTER CONNECTION

The published literature, farm visit and group interview all concur that the primary emphasis of SYA is positive human intention that is transmitted onto the farm, and this is carried out by trained farmer-meditators. The meditative practice, as well as the use of sound, is superimposed onto a foundation of standard organic practices that include the use of traditional preparations and remedies.

The mind–matter connection in the material realm and the effects of meditation on plant growth are supported by existing studies that attribute some scientific credibility to SYA claims (e.g. Dossey, 1998; Ducharme, 2007; Emoto, 2004; Loehr, 1959; Roney-Dougal and Solfvin, 2002, 2003; Radin and Nelson, 2000). These works are briefly reviewed below.

One of the earliest published experiments was undertaken on seed germination by Presbyterian minister and scientist Franklin Loehr (1959) who conducted two trials involving seeds and water. His results consistently indicated that positive prayer helped speed up germination and produced more vigorous plants, whereas negative prayer actually halted germination in some plants and suppressed growth in others. In another experiment, maize in a container receiving prayer water consistently sprouted a day earlier and had higher germination and growth rates than that in the other that received no prayer.

A meta-analysis by Radin and Nelson (2000) reviewed 40 studies carried out from 1959–2000 showing the impacts of mental intention focused towards a specific number, compared to a dice or random number generator (RNG). From a total of 515 RNG experiments by 91 researchers, the findings showed a statistically highly significant and repeatable mind–matter interaction effect in which

the intention affected the outcome of the roll of the dice or RNG. The authors concluded from this study that the overall results could not be attributed to chance, selective reporting or variations in design quality. A well-known experiment made by Japanese scientist Masaru Emoto (2004) showed the effects of intent and words on water crystallisation patterns, and this has led to several publications and books which expound the potential implications for living organisms which are primarily composed of water. Ducharme (2007) published a doctoral thesis on an experiment in which positive and negative prayers were sent towards courgette seeds stored in Petri dishes in a greenhouse. The prayers were made by the researcher who was a trained alternative healer. The study found, compared to the control sample, a significant increase and decrease in germination rates and weights above statistical significance on the seeds receiving the positive and negative treatments, respectively. Roney-Dougal and Solfvin (2002, 2003) did two double-blind trials on two commercial organic farms in Somerset, UK, in which a trained healer blessed some of the lettuce seeds to test for germination and growth. The results showed that the seeds that were prayed for yielded an ~10% higher crop yield and had less fungal and slug damage during the growing season than the control.

The many spiritual, physiological, psychological and emotional benefits provided by meditation have also been confirmed in numerous studies as summarised by Erickson (2016), and the practice of meditation itself has moved into the global mainstream culture for personal well-being (Pathath, 2017). SYA takes this further and applies meditative practices to crop growth and farm resilience (Ramsay, 2012a), and similar approaches that include a metaphysical dimension in agriculture have been advocated by Wright et al. (2017), Kieft (2006) and van Eijk (1998).

There are two main challenges with researching SYA. Firstly, in focusing on yield and productivity comparisons, the available research maintains the standard reductionist methodological approach while attempting to assess complex holistic systems that comprise both the physical and metaphysical. Nevertheless, the wider benefits of SYA are captured subjectively through the valuable anecdotal stories and literature of the SYA farmers, and this provides sufficient indication of differences between SYA, organic and conventional practices to encourage further research. Ramsay (2013b) recommends more targeted research on the topics of water absorption and retention, challenges of conversion from non-organic to SYA, the potential for SYA outside of the Brahma Kumaris community and India, differing farm scales and replicability with other forms of meditation.

The second challenge relates to differentiation between organic and SYA farming. It is possible that the reported economic benefits which appeared to be a result of the cost savings through both the non-purchase of agrochemicals and the selling of premium produce could be the result of the organic practices rather than the spiritual practices of SYA farming. Similarly, the environmental benefits could also be a result of switching from chemical to organic farming without the meditative practices having any impact. In addition, farming organically also requires conscious intention to switch from the mainstream approach – which is easier and less labour intensive, and thus, there could be intentional interference in organic as well as with SYA farming. Nevertheless committing to both the additional farm practices and the lifestyle changes of vegetarianism and abstinence (necessary to achieve a higher proficiency in Raja Yoga meditation) can be perceived as additional stringent requirements for the uptake of SYA farming and arguably involve an even stronger intention.

CONCLUSIONS

This chapter aims to provide an overview of SYA practices and investigate their effects. In order to achieve these objectives, a triangulated approach was deployed through a literature review, group interview and a visit to the SYA demonstration farm. Notwithstanding the lack of empirical verification, this provided rich data for the initial exploration of SYA as a farming system. While neutrality cannot be claimed – the small sample of farmers interviewed for this study had been selected by the Brahma Kumaris who were present during the group interview and who owned the demonstration farm visited – the author encountered what appeared to be a clear moral and spiritual integrity within the SYA movement.

SYA superimposes a spiritual dimension onto standard organic practices, a dimension on which it places great emphasis. As a meditation-focused farming system, it offers synergies with the alternative agricultural movements, sharing common goals towards healthy food and community well-being. Such movements claim to be holistic, but to date, many of them have avoided or under-emphasised the mind-matter dimension that is brought to the fore with SYA. SYA has achieved relatively good results at a local, national and international level in a very short (12 years) time period, and interest could spread further afield with the increased recognition and adoption of meditation practices originating from India. This study also highlights the psycho-social benefits of the meditation practice, which are incurred first by the farmer and then positively impact the entire farming family and community. This increased peace of mind – and fewer suicides¹ – cannot be overestimated in the context of the plight of small farmers in India and other regions of the world.

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¹ One Indian farmer commits suicide approximately every 42 minutes (Prasad, 2019).

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Section 4

Voices from the Field



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23 The Etheric Realms as a Foundation for Exploring the Use of Radionics with the Biodynamic Preparations

*Hugh Lovel**

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INTRODUCTION

The more that agriculture explores variables such as the weather, latitude, soil types, planting dates and soil ecologies – to say nothing of human factors – the clearer it becomes that agricultural research has no hope of limiting or controlling most of these variables, and instead we need to update our concepts and methods. One such concept is that of the soil food web – a living result of the earth and the sky interacting with life. Another is organisation as being the basis of life, as life is organic. The soil food web must breathe, and the earth and sky must interact well for life to thrive. We cannot enliven the soil without also organising the atmosphere, and to do that we must awaken life in the soil.

Yet anyone using such terms in relation to agriculture, such as sky, sun, moon and planets, let alone ether and astrality, is apt to be met with rejection and disdain, even though history is replete with lore about studying the stars and delving into the mysteries of nature, such as that of the Rishikas, Zarathustra, Moses or the Magi. Such is to be expected, since western science has for centuries held that intangible phenomena are imponderable and cannot be examined. Meanwhile, truth seekers will realise that these concepts and observations are too consistent and elaborate to be mere imagination, and here lies a rich load of scientific discoveries waiting to be brought to light. At its roots, science is the art or craft of knowing, and the analytical method is not our only means of knowing. Quantum physicist Max Planck famously observed, in mainstream academia, that science advances one funeral at a time.¹ However, pioneers in science push the boundaries of what we know in order to free themselves of these restraints and explore the vast uncharted territories beyond. For myself as a farmer, teacher and independent researcher, I write from my experiences and knowledge

* 1947–2020.

¹ ‘A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die and a new generation grows up that is familiar with it’ (Planck, 1949: 33).

rather than in pure academic form. Much more can be found in my book *Quantum Agriculture, Biodynamics and Beyond* (Lovel, 2014).

THE ADVANCE OF WESTERN SCIENCE, FROM KANT TO GOETHE

Western thought has been considerably shaped by the adoption of Emanuel Kant's epistemology – the study of how we know what we know. Kant (1724–1804) was an influential German philosopher in the Age of Enlightenment. His most persuasive work was *Critique of Pure Reason*, written in 1781, and his views continue to influence contemporary philosophy, especially in the fields of epistemology, ethics, political theory and postmodern aesthetics. Kant asserted that we know something is real by seeing, hearing, smelling, tasting or touching it – and that there are no other means. So, we can know the physical corpus of any plant, animal or human, but since we cannot hold its life in our hands and measure its weight and circumference or its will to live, then the fact of its life is not real (Kant, 2017). Excluding the influence of life and values on physical reality may seem strange in the twenty-first century, but in Kant's time, phenomena beyond the five senses were categorised as 'imponderable' and to be avoided. Kant's epistemology coupled neatly with the ideas of Pierre-Simon Laplace (the French polymath who from 1799 to 1825 wrote *Mécanique Céleste* – Celestial Mechanics (Biot, 2009)) that the universe follows a precise calculable path, and the Kant/Laplace cosmologies were far and away the predominant theories taught in western schools in the late nineteenth and most of the twentieth centuries. This all seemed to make the pursuit of scientific truth so clear and simple that physicists and mathematicians of that time believed they were on the verge of understanding the totality of natural science, or at least the 'hard' sciences like physics and chemistry.

However, physics went from Isaac Newton (who laid the foundations of classical mechanics) and James Maxwell to the twentieth-century figures of Ernest Rutherford (father of nuclear physics) and Einstein, Niels Bohr (who paved the foundations for understanding quantum theory) and Werner Heisenberg (pioneer of quantum mechanics), Paul Dirac (who contributed to both quantum mechanics and electrodynamics) and Erwin Schrödinger (who showed how to calculate the wave function), and things clearly became more complex than they had previously seemed (Becker, 2019). Nevertheless, all efforts to form a 'theory of everything' failed. But there also was Johann Wolfgang von Goethe. Goethe (1749–1822) was a German writer, statesman and scientist of wide acclaim.

In his lifetime, Goethe's scientific writings were often rejected by fellow scientists, though a bit later quantum physicists like Heisenberg and Schrödinger found Goethe to be a rich source of inspiration. Goethe's belief that the observer and the phenomenon were inseparably linked was especially at odds with his contemporaries. To Goethe, it was obvious that perception is limited to and determined by our concepts. What is beyond our conception eludes our perception. Furthermore, the observer chooses *what* to look at and *how*. People commonly attract those experiences they look for most, whether out of desire or aversion. Other experiences pass them by unnoticed (Steiner, 1988).

Here, Goethe's thinking flies in the face of the popular Cartesian belief (from René Descartes, founder of modern philosophy) that reality is purely objective and the observer has no influence over phenomena. But quantum theory vindicated Goethe as it found the observer, and his/her measuring instruments, are determining factors of what is actually observed. Observers seeking waves find their non-local patterns, and those seeking particles find their locations. Both are indeterminate until the observer looks. To some as yet unknown extent, we determine the realities we experience.

MAXWELL'S ETHER AND THE ETHERIC REALMS

In conventional physics, gravity is the first force and electromagnetism is the second. James Clerk Maxwell (1831–1879) was a Scottish physicist, known for his formulation of electromagnetic theory. By combining electricity and magnetism, Maxwell and his colleague Michael Faraday created

a flow of electromagnetic force along the inner surface of a wire. Around the same time, J. J. Thomson (who is credited with discovering electrons) discovered electrical discharge through gases. Thomson's subsequent discovery of what he termed the 'electron' launched a new era of atomic theory. This suggested to Maxwell there must be an extremely fine stationary field, which supports the propagation of light and electromagnetic waves in the way air propagates sound. He called this the ether field. Ultimately, this field was not found by Michelson and Morley in their experiment of 1887 when they attempted to detect the existence of the ether, a supposed medium permeating space that was thought to be the carrier of light waves. They found no interaction with any etheric field in any direction, even though the earth travels at great speed. They then built a huge interferometer resting on a bed of mercury to dampen extraneous vibrations, and they still detected no 'etheric wind'. This was taken as proof that there was no ether, which today is still the basic belief (Shankland, 1964). However, though Michelson and Morley's experiments disproved Maxwell's theory of a universal fixed etheric field, this did not disprove any other ether, and Dirac believed mathematics required some kind of organisational activity – which is to say etheric activity – as an inherent property of all physical masses (Pais, 2005).

Prior to this however, Goethe, in his alchemical investigations, studied not only the elements and ethers of Greek philosophy, but also elemental beings or individualities – gnomes, sylphs, undines and salamanders – which he used his imagination to 'see'. The term 'being' refers to their condition of being self-organising and thus alive, but does not mean they organise physical substance. These beings inhabit the ethers corresponding to the four elements of Greek philosophy (fire, air, water and earth), which indicate the effects of their otherwise unexplained activities (Steiner, 1988). This was such a major departure from the western worldview of Kant and modern physics that it triggered the automatic mainstream rejection of Goethe's scientific works for all except Rudolf Steiner.

Steiner (1861–1925), an Austrian philosopher, social reformer, architect, esotericist and clairvoyant, put forward the concept of the fourfold human being as a vessel consisting of a physical body, an ether-body, an astral body and an ego or 'I' (Steiner, 1959). Steiner's concept of the ethers is also tied to the four elements. The four elements are visible, tangible and subject to entropy, while the ether or ethers associated with these elements are invisible, dynamic and syntropic rather than entropic. 'Dynamic' indicates an energetic process that begins and ends over an interval of time, and 'syntropic' means they are organisational, as their order flows from lower concentration to higher concentration. The ethers organise and activate the elements, each element relying on a different sort of ether.

Based on Steiner's teachings, Dr Ernst Marti (1903–1985) took forward the study of the ethers as a lifelong pursuit and proposed bridges between the ancient and medieval worldviews and the present natural and spiritual sciences (Marti, 2017).

Warmth Ether: The initial and most rarefied ether stage, the *warmth ether*, is one with the *fire element*, as is characteristic of sulphur. It is a purely temporal and non-spatial oscillation, having no mass or density, only duration.

Light Ether: Following the warmth ether, the *light ether* creates order, as is characteristic of nitrogen, within the *air element*. Light ether flows outwards from surfaces, creating space within the fullness of time. With light, we have the first appearance of its opposite – physical density and mass, or the other side of surfaces.

Tone Ether: The next etheric stage is the *tone ether*, which organises the *water element* and shows us the characteristics of hydrogen in the way water behaves. Tone adds vorticity or movement to warmth/time and light/space, as is characteristic of water, which spins either left or right as well as in and out, creating nodes, waves, intervals, separation and union, number and periodicity, precipitation and buoyancy.

Life Ether: The last and the most dynamically organised stage is the *life ether*, which is characteristic of carbon. It contains, permeates and integrates self-organising forms. The life ether provides unity and identity to organisms whose physical structure is made up of what Vedic and Greek philosophies called the *earth element*.

If each ether creates the conditions for the next ether to arise, then the life ether depends on the creation of time by warmth, space by light, and movement by tone to create coherence, thus forming living organisms with all four ethers which work together in unity within a boundary. Life ether is the vitalising force of identity, containment and healing that permeates every living organism within its cell wall, skin, bark or its outer integument. When this is lost, the organism dies. Author and biophysical researcher Rupert Sheldrake calls this ‘morphic resonance’, or the resonant coherence that sustains form and keeps it whole (Sheldrake, 2009). However, Sheldrake’s work is more in accord with Goethe’s epistemology than Kant’s and thus still lacks mainstream acceptance.

So from the Goethean point of view, the four dynamic, syntropic ethers create time, space, motion and coherence, each of which is associated with the elements – fire, air, water and earth. The warmth ether creates nature as an oscillation between past, present and future, just as subatomic particles are found to go both forward and backward in time. All else follows. Critically, the light, tone and life ethers are opposed by the entropic disorganisational forces of electricity, magnetism and radioactivity, which tend to destroy the integrity of living bodies, eliminating their coherence, paralysing their motion and creating an absence of space.

It might seem that Goethe’s belief that concepts are required for perception to occur has nothing to do with agriculture. However, agriculture has long been perceived as a battle to wrest a living from nature which fights back with weeds, pests, diseases and inclement weather. Our war with nature has typically depleted its resource base with ‘disorganisational’ activities. Ploughing led to erosion, and adding nitrogen, phosphorous and potassium salts to soils over the last 100 years has made these soils increasingly less fertile. Even though we started with soils rich in humus and organic life, we ended up with soils so low in carbon that earthworms are now rarely seen. What our farms lack most is vitality or life, or, what can be termed organisational, etheric forces. From the Goethean point of view, the ethers, which are organisational and essential to life, reverse entropy just as living organisms are islands of order amidst a sea of chaos (as Schrödinger pointed out in his biophysics lectures in 1948). This makes a study of the ethers an overdue investigation.

MY FARM JOURNEY

Since my early childhood in South Louisiana, I was aware of the environmental challenges that were occurring around me. As the oil companies pumped, the tidelands south of us were subsiding. At the dinner table, my parents discussed our house going underwater if Greenland melted. I was aware of the gradual trend towards extreme weather events even in the early 1950s. My family took long summer trips from Louisiana to the Pacific Northwest to visit relatives, back when the roads were almost all two lane and rural. We saw lots of crops – along with flash floods, dust storms, devastating erosion, grasshopper plagues and failed farms. The Oklahoma Dust Bowl was history already, but my geography book had pictures of more recent and quite serious soil erosion in Georgia. Though this was decades ago, even then farming had worn out and used up its most basic resources, particularly soil and water. Weather affected soil loss and soil loss affected weather.

I was a city boy who had just a few summer farm experiences. Still, in 1970 I studied soil microbiology as a biochemistry major, and at the time, I found it odd that there were no agriculture students in our class. When I started farming, I assumed farmers knew what they were doing, so I copied their examples by ploughing and discing my fields edge-to-edge. This didn’t work as well as I had hoped; I had some hard lessons to learn.

Trying to farm an eroded and failed farm that held only 1.5% organic matter, in 1976 I grew a crop of sorghum for syrup using conventional methods of ploughing and chemical fertilisation. The sorghum crop was made into syrup, but the manner in which I grew it had such a negative effect on the soil biology – which already was quite poor – that it obviously could not be farmed further this way. Fortunately, I soon realised that I couldn’t afford to grow any crop or use any method that didn’t build life back into my soil. I already knew that soil fertility, from the soil microbes on up, was the basis of every farm’s vigour. Somehow in the back of my mind,

I always thought of my farm as having a coherent identity whose various activities fitted together and contributed to each other's success, though at first my farm didn't look as though that was happening.

That first winter after growing the sorghum crop, I humbly and gratefully prayed to find out what I needed to know. That was the first step as the next spring my neighbour, Shabari Bird, gave me two books: Thompson and Bird's best-selling 'Secret Life of Plants' (Thompson and Bird, 1989) and Pfeiffer's 'Biodynamic Farming and Gardening' (Pfeiffer, 1983), and introduced me to Peter Escher who became my mentor in biodynamic farming, a quality, self-sufficient, regenerative system of agriculture based on the insights of Rudolf Steiner. Biodynamics emphasises farming practices intended to achieve balance between the physical and higher, non-physical realms by harnessing both the cosmic and terrestrial forces. In the spirit of scepticism – rather than cynicism – I set about studying the organisational forces identified by Steiner, who gave recipes for making preparations to enhance these forces in order to build organisation into its environment so as to wean itself off outside inputs.

These preparations are one of the fundamental practices in biodynamic agriculture. They consist of mineral, plant or animal manure extracts, usually fermented and applied in small proportions to compost, manures, the soil, or directly onto plants, after dilution and stirring procedures called dynamisations. The original biodynamic (BD) preparations are numbered 500–508. They are intended to help moderate and regulate biological processes as well as to enhance and strengthen the etheric forces on the farm (Diver, 1999).

While setting up the small market garden, I also heard about something called the soil food web. I had studied this microbial community of soil organisms and the name made perfect sense. I could envision the soil food web as a symbiotic community of soil organisms where hundreds of thousands of different life forms worked harmoniously together, sharing all the tasks. I felt certain that this kind of synergistic ecosystem could enliven and unify my entire farm as an *entity*. I began to encourage it with Dr. Pfeiffer's Field Spray. As a young man, Ehrenfried Pfeiffer (1899–1961) was guided in his studies by Steiner. He came to America and, with the help of Peter Escher, set up laboratories in Spring Valley, New York. Pfeiffer looked at the task ahead: Steiner had said that the most important thing was to apply the benefits of the agricultural preparations from his Agriculture Course to the widest possible areas of the entire earth for its healing and the improvement of its produce in every respect. This led Pfeiffer to produce his Field Spray, which contained all of the biodynamic preparations except the horn silica. So I used this spray around the house, up the driveway to the highway, along the creek, fences, tracks and boundaries – and over the fields too. The thistles disappeared except for a scattered few. Clover started to grow abundantly. The grass burst forth earlier in spring and stayed green longer in autumn. The interplay became increasingly dynamic between what went on above ground by day and what went on below ground by night.

Having studied biochemistry, what the biodynamic literature said about lime and silica and what Peter showed me made good sense; I had known almost nothing about Steiner, but at least he was precise enough about chemical nomenclature to mean calcium oxide when he said lime and silicon dioxide when he said silica.

Strangely, biodynamics was the only form of agriculture I knew of that thought silica was important, even though silica comprises more than half of the earth's crust. I also knew silica is structural like carbon. It forms strong cell walls, connective tissues and transport vessels. Insect exoskeletons are rich in silica. It creates the chalice that contains and circulates the mineral/protein protoplasm in living organisms.

It became my daily meditation to ask myself: what could I do to establish, grow and enhance this biological reservoir and well of life so that it permeated every corner of my farm? When I listened with an ear to the soil, I imagined I could faintly hear the soil food web humming, breathing, spinning, weaving, chirping, moaning, sighing, sleeping and, especially in winter, waking up and renewing itself. I was growing an ecosystem, a teeming, diverse metropolis of soil organisms whose complexity made a city like Tokyo look like a country village.



FIGURE 23.1 The author in a field of maize undersown with soybeans with radionically applied biodynamic preparations and no other fertility inputs, in metre wide beds spaded into the soil food web. (Photo credit: Hugh Lovel.)

The benefits of feeding and improving the soil food web kept adding up. I'd heard about chaos theory's discovery that organisation arises at boundaries, and I learned to nurture my boundaries so that they fed organisation to my beds and fields. My best veggies grew on the edges of the beds. I found I could spread my natural inputs everywhere, feeding paths, fence rows and boundaries as well as my crops. Always the paths and boundaries fed the beds. I was growing maize along with soybeans as a soil improvement crop to add carbon and organic life to the soil without the need for external inputs (Figure 23.1).

It took me 8 years to realise what should have been obvious. Ploughing, cultivating and leaving entire fields bare for weeks and months on end don't just kill the earthworms. These actions stunt, starve, shred and kill the entire soil food web. On the other hand, strip tilling beds in an otherwise undisturbed soil food web creates miles of boundaries between cultivated beds and the surrounding sod. After all, organisation arises at boundaries. Then the delicate influences of starlight and moonlight could engage the atmosphere with the soil for nitrogen fixation and protein chemistry. As life in the soil food web grew, the soil's animal sense-and-desire life became well-fed and thriving. Throughout the animal kingdom, digestion develops hand-in-hand with animal awareness. With abundant animal life in the soil, the market garden and soil food web became sentient, even though these animals do not have a brain isolated in dense bone like the human skull. I think if anyone experienced such living, sentient food, they would want a steady diet of it.

EXPLORING THE BIODYNAMIC PREPARATIONS THROUGH RADIONIC APPLICATIONS

As well as biodynamic agriculture and the soil food web, I have experimented with specific applications of quantum physics and in particular with radionics. Radionics is a technology based on the wave or etheric aspect of nature rather than the particle aspect and is all about copying and transferring patterns (Young, 1976). It was discovered and developed at the turn of the twentieth century before quantum physics showed that while particles are local, wave patterns are non-local. A medical doctor in the USA, Albert Abrams, was experimenting with various tunable resistance devices and discovered that everything he experimented with radiated an emanation or frequency and that this could be used to treat disease. At first, radionics met with intense scepticism and, with only superficial examination, was frequently dismissed as bunk. However, according to my understanding, non-local waves are the etheric forces that organise physical materials, and my investigations

into influencing the farm biosystem's patterns of activity showed me the ease and efficiency of applying the wave patterns of the biodynamic preparations through radionics. My studies in physics made it clear that radionics worked with quantum non-locality and entanglement as it transferred patterns of activity over any distance instantaneously with no loss of signal (Lovel, 2014).

Prior to my use of radionics, my customary method of applying biodynamic preparations involved intensive stirring in water with alternating vortexes from clockwise to anticlockwise – then spraying the water on soil, plants, animals and/or over the atmosphere. Despite its meditative charm, this was time consuming as each application took more than 2 hours, and most farmers don't need extra jobs to do. Being able to impart biodynamic preparation patterns from a kitchen alcove or farm office in just a few minutes greatly extended my capacity to adjust the farm's biosystem with these patterns, especially during rain but even when I was off the farm. To assist with this and based on the work of T. Galen Hieronymus², I designed and manufactured a simple, self-powered device similar to a crystal radio set, which I called a *Field Broadcaster*.

I use this to broadcast all the biodynamic preparation patterns to the entire farm in any weather, all year round. I also use a radionic instrument of my own design to impart patterns to my brews, soil drenches, irrigations and foliar sprays before applying them (see Figure 23.2). Because it uses cards that hold the preparation patterns, this allows uniform applications without using up any physical substances. This allows me to target different crops and fields with the individual activities that each needs in order to stay balanced and on track. When the sun is near the horizon (before breakfast and before supper), I compose and set in progress radionic programmes to impart appropriate preparation patterns via an aerial map of the farm with its boundaries marked. This allows me to respond to environmental conditions such as weather, seasons, daily cycles and lunar cycles, in order to keep the farm healthy. These morning and evening programmes help me to integrate and balance the activities in the farm biosystem as a coherent entity.

This is a general overview of how I apply radionics, and I have found that the radionic application of the biodynamic preparation patterns and observation of the results have revealed characteristics that have not been recorded elsewhere. Here, I describe just two of the preparations that I use.

BD Soil Activator (1000): This is a complex compost made with all the biodynamic preparations including horn silica, horn clay and horsetail decoction in a cow manure base with the addition of rock powder (usually basalt) and lime (usually eggshell powder). All the ingredients are intensively



FIGURE 23.2 Field Broadcaster (left) and radionic instrument with cards (right). (Photo credit: Hugh Lovel.)

² T. Galen Hieronymus (1895–1988). One of the early radio engineers and radionics pioneers, who obtained the only US patent on a radionic instrument.

mixed in a potentising process. Because the chemistry of these patterns works like music with its resonances and dissonances, this preparation acts like an orchestral ensemble, as compared to using each preparation as a solo instrument. The BD Soil Activator establishes and strengthens the full array of organic processes of the farm's biosystem and, with all its systems going, the integrity of the farm organism is on track.

BD Yarrow (502): This preparation is made by stuffing the bladder of a male stag, deer, elk, caribou or other related species with the florets from yarrow (*Achillea millefolium*), hanging it overhead in the warmth and light ethers over summer, and then burying it in the soil's chemistry and life ethers over winter. A teaspoonful moulded into a ball with a little clay or manure can be dropped in a hole in a compost pile, where its vibratory resonance imparts the kidney/bladder process to a mass of material as big as a small house. Yarrow, with its lacy foliage and umbels of flowers, reaches out to the widest expanses of the universe and brings in the astral chatter of informational beauty and affinity. The male deer's bladder receives, collects and integrates this information and the nitrogenous substances associated with it. This provides the patterns of purification and refinement associated with the kidneys and bladder and the planet closest to the earth, Venus.

Farming with radionics, these biodynamic preparations are commonly used purely as patterns. Though the effects evoked are much the same as using the preparation materials by stirring and spraying, the ease of radionic application allows the farmer to use them far more frequently without using up any materials. This not only gives the farmer the opportunity for the timely application of patterns that can ensure the abundant production of quality crops, but it also enables the farmer to explore and discover how useful the biodynamic preparations can be.

CONCLUSION

I think of a farm as a living organism that breathes and grows in cycles to become increasingly alive and coherent within its boundaries. It's also a cell in the body of the living earth. Its processes are reflected in human body processes where the human diaphragm is like the soil's surface, while the activities going on in our heads are similar to what goes on in the soil, and the activities going on in our guts are similar to what goes on in the canopy. A farm and its food then become organised as a reflection of the surrounding solar system and cosmos. In this way, the context is able to inform the content.

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24 The Subtle Life of the Bee and Its Importance for Humanity

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In this holy hum of bees,
Wing song of pollen hunt and honey,
Can you hear a rhythm
Running through the birth of stars,
And towards our destination, returning towards
An ever awakening ground?
Fragment – Anonymous

THE DEMISE OF THE BEE?

There is an important beehive death going on, for several reasons, first of all environmental pollution, in all its forms. This is a situation of great danger but there is something we can all do with great ease. All you need is a balcony, a flower bed, a piece of land or a vase of flowers that will allow our bees to survive. Bees are hungry because of monocultures and extreme weather conditions.

Find out which essences the bees prefer, from seeds and seedlings that can be found in agricultural stores, in nurseries and in the numerous exhibitions of rare and horticultural plants that adorn the Italian spring with colour, beauty and delicacy, in cities, in villas, parks and castles. Spread the word, share this joyful activity with friends and children! Set a good example and weave new relationships in the name of the good that you do by paying attention to nature and therefore to yourself.

This was the rallying cry at the inception of the ‘We sow flowers for the Italian bees’ campaign initially broadcast by the ApiSophia Association¹ (‘we love and save the bees’) of Italy, in the spring–summer of 2018, which continues to be promoted.

Bees have accompanied us in our evolution and are an example of life, of gift and sacrifice, for humanity an example of a totally different social organisation. Wandering around the flowers, sucking the nectar, the bees are covered with an impalpable powder that pollinates most of the plants that humanity feeds on. Honeybees are essential partners for the success of agriculture. Like us, bees also live in a polluted and impoverished environmental context.

¹ apisophia.it.

Thirty or 40 years ago, every refuelling at the service station necessitated a washing of the car windshield that had become smeared with hundreds of squashed insects. Today, we travel thousands of miles often without even finding one small insect corpse to remove. This personal experience does not need sophisticated scientific investigations and evidence to effectively describe the current condition faced by the insect world (Selg and Wirz, 2015).

All insects, including bees, are exposed to the destruction of their natural environments, impacted by agricultural practices, environmental pollution and diseases. If we pay attention for a moment, we can see Nature in agony, a dying world, and mankind is the cause. In the early months of 2019, some researchers again raised the alarm and highlighted how the rate of extinction of insects was eight times greater than that of mammals: overall insect species have decreased by 41%, the bees by 46%, and the planet is on the threshold of a mass insect extinction, with losses greater than those reported for large animals (Sanchez-Bayo and Wyckhuys, 2019).

Insects are fundamental for the proper functioning of all ecosystems, and bees in particular have suffered from breeding practices that have weakened their nature: the extraordinary increase in the production of honey for commercial purposes, resulting in the exploitation of hives, is in stark contrast to the essential needs of bees and reflects the similar treatment of livestock species in intensive farming. It is important to be aware that, just like other domestic animal species, bees have undergone intensive breeding. The world must change the way food is produced, to recreate an environment with organic and biodynamic farming rich in biodiversity, which is healthy and welcoming to insects and humans (Menestrina, 2019). In his cycle of lectures on *The Bees*, Rudolf Steiner indicated clearly to the workers of the Goetheanum, Switzerland, the implications of modern beekeeping techniques, including the introduction of new prismatic rather than rounded beehives, of man-made, pre-constructed wax honeycombs instead of the combs built by the bees themselves, of the artificial breeding of queen bees and the feeding of sugar-based products instead of honey. He said, 'We'll see it in one hundred years' (Steiner, 1998: 75).

Today, this prediction can be both seen and heard: the silence around trees and bushes in bloom is symptomatic, it is a deafening silence. Bees are dying, and this topic cyclically resurfaces in newspapers or in popular action, or as a personal protest because of the deep worries of beekeepers (Menestrina, 2016).

The concern for pollination and therefore for the bees' food supply adds to this picture, but in a broader sense, it must be recognised that bees touch deeper layers in humans than any other living being on Earth. The most worrying aspect of the aforementioned factors is precisely this lack of relationship between human and bee, because the strength and depth of this connection are only partially understood, whereas bees and their social organisation provide a model for future human organisation. As an example, and contrary to popular assumption, bees are not hierarchical. In the hive, everything is done through the bees' dedication to work and to each one's specific task. The queen does not reign in the normal sense of the word, but instead is an exceptional mother, laying eggs her whole life long. The bee community, meanwhile, makes common decisions, as in the case of swarming or through taking stock of family developments. Thus, the hive organism is a wonderful example of creatures working together in perfect harmony for their best common interests (Menestrina, 2016).

UNDERSTANDING THE INTRICATE LIFE OF BEES

The majority of people do not know very much about the wonderful world of bees and the wisdom and perfection that is contained in the hive. By getting to know the bee better, they may develop more respect, love and reverence for it.

The inhabitants of the hive are divided into three castes: the queen, the workers and the drones. The worker bees (female) and the drones (male) develop in hexagonal structures that resemble silica crystals, while the queen develops into a round cell that has no relation to the surrounding hexagonal environment. Silica is known to have a very close relationship with light, and for this reason, we

can say that worker bees and drones develop inside ‘light cells’. The queen needs only 16 days after her egg is laid to develop fully. A worker bee takes about 21 days, and thus, it may be deduced that nature takes much more care in procreating the workers than the queen, while the male drones take longer to mature, between 24 and 25 days.

In his cycle of lectures on *The Bees*, Rudolf Steiner provides an interesting picture of how the cosmos is involved in this gestation. He explains,

The Sun turns on its axis once in twenty-one days. Then it will arrive again at this point and begin repeating this movement. The worker uses from the Sun just what she needs to achieve its full development. If the worker were to continue in her development beyond this point, she would leave the Sun development and come into the sphere of influence that the Earth would exert upon her development. (...) The worker enters into Earth development and experiences it only as an already completely developed animal, having achieved its full maturity at twenty-one days. (...) Now consider the drone. It doesn’t “feel,” as I would put it, that it is completed at twenty-one days and wants to continue into the Earth development phase before it is finished maturing. It is definitely an Earth animal, while the worker is a Sun child, complete within herself. And what about the queen bee? She doesn’t even finish the entire Sun cycle of twenty-one days. She lags behind and remains forever a Sun child. (...) With bees, you can really see what it means to be under the influence of the Earth or of the Sun: depending upon whether a bee waits to complete the Sun development phase, it will turn out to be a queen, a worker, or a drone.

Steiner (1998: 8–9)

So, based on Steiner’s intuition, the queen and worker bees are united by the same solar cycle. This connection has been confirmed by the presence of the queen’s pheromones (Fontana, 2017), by research on language and communication within the hive (von Frisch, 1976) and by the ability of bees to process information and develop group strategies (Celli, 2008).

Being the only fertile female in the community, the queen is the mother of all the workers, comprising the future queens and sisters of the drones. Her ability to produce eggs is staggering, often more than 1,500 per day, which is similar in total weight to that of her own body. The queen is very different from the drones and the workers: her body is elongated, and her jaws are armed with sharp teeth, whereas those of her daughters – the workers – are toothless. Also unlike the workers who, when they sting, can no longer remove the serrated barb and die by being gutted, the queen has a curved and smooth sting, which is used to destroy premature pretenders to the throne. She lacks the ‘work tools’ supplied to the workers, such as the pollen baskets, the wax glands and the honey bag. Unable to feed herself, her diet is exclusively based on the secretions of royal jelly from the hypopharyngeal glands on the heads of the workers. Queen bees may live for up to 5 or even 7 years.

Worker bees are sterile because they are fed with royal jelly only for the first 3 days and then with nectar and honey. If the queen has enough space (in an enlarged and rounded cell) and if she is fed with royal jelly, she develops her sexual organs. Therefore, as with other animals and partly in humans, the environment and food to some extent determine the faculties of the subject and what will be its external work.

Then, there is the drone. The drone is helpless and without a sting. Like the queen, it has no pollen baskets or wax glands and does not secrete royal jelly: its only function is to mate with the queen and contribute modestly to the ventilation of the hive. It is also not able to feed itself, the workers feed him. Worker bees are more numerous than drones, and, in a hive in a temperate climate region, the number of workers varies between 8,000 and 15,000 in springtime and up to 80,000 in early summer. For the first 3 weeks of their life, they carry out tasks within the hive: in the first 3 days – during which they too are fed with royal jelly – they clean the cells. From days 5–14, they feed on pollen while producing royal jelly to feed the queen bee and the newborn worker bees. From days 10–16, they are ‘wax bees’, and with their epidermal glands positioned on the abdomen between the sternites (hard plates forming the sternum), they produce wax, a fatty substance of entirely animal origin used as a building material. They spend the last few days of their puberty inside the hive

sweeping (sweeper bees), keeping watch (guard bees) and ventilating the hive to keep its internal temperature constant at around 35°C–36°C. Finally, from the 21st day, the worker bee takes flight and becomes a bee foraging for water, pollen, nectar and propolis. We can thus observe how the worker bee begins its industrious life with a sort of training period and that, in a crescendo of experience and responsibility, reaches the apotheosis, or highest point, of its life at the 21st day, from when on it exteriorises its work for the hive. The lifespan of the foraging worker bee is variable depending on the season and external conditions and may be up to 6 months in the winter period (Menestrina, 2017).

Now, let's discover the virgin queen who makes a nuptial flight at 3 days of life: on the running board of the hive, we see a 'ping-pong ball' that darts vertically towards the sky: it is the queen surrounded by the drones, coming from up to 15 km away. Once it was supposed that only a maximum of 3 drones would fertilise her, but today, we know that it can be up to 24, and this ensures a very important genetic variability as she takes from all of them the seed that will serve for the rest of her life (Fontana, 2017). The bee family regenerates itself through swarming: the old queen ages and moves away making room for the newborn virgin queen and along with all the bees who are able to fly creates a new family in another hospitable place. It is thus that from a first colony, we now have two, less numerous ones, both of which have to work hard to recreate winter stocks.

Awareness of the needs of bees may bring us to better understand the needs of the environment in relation to human activities (Menestrina, 2019). Further, we may take bees as an example of community, and for the 'ancients', the practice of beekeeping was considered a gateway to the inner journey, so much so that it was recommended to all novices (Thun, 2000).

EVIDENCE ON THE PHYSICAL AND METAPHYSICAL CHARACTERISTICS OF BEES

Research has enabled us to understand more about the complex relationship of the bee with the rest of nature. The bee (along with the ant) produces formic acid as part of its venom. Flying from flower to flower, the bee scatters this formic acid and in doing so makes it available to nature, so that, according to Steiner (in his 1923 lectures *The Bees*, nos. 7 and 8 (Steiner, 1998)), the soil does not rot or become desertified and so that plants are revitalised. A testimony from biodynamic winemakers explains that in a clean and healthy environment, the bees do their utmost to repair individual grapes damaged by hail, thus avoiding the rotting of the whole bunch (Magrini, 2014).

Recent studies (Khait et al., 2019) have discovered that stressed plants emit airborne sounds that can be recorded remotely, in acoustic chambers and in greenhouses, and that plants possess a faculty akin to hearing, which allows them to hear the buzzing of bees nearby and consequently produce a sweeter nectar to attract the insects to them (Veits et al., 2019). The researchers found that the plants' flowers vibrated mechanically in response to these sounds, suggesting a plausible mechanism whereby the flower serves as the plant's auditory sensory organ. Both the vibration and the nectar response were frequency-specific: the flowers responded to pollinator sounds, but not to other frequency sounds.

Heat plays an important role in their organisation, and in winter, the hive is maintained at a constant temperature, the only example among insects of living in homeotherms, which is otherwise peculiar to mammals (S.I.M.A., 2015). The nectar from different origins is accumulated by the single bee in its stomach, regurgitated and eaten by the next bee. It is sometimes said that the bee is the smallest ruminant on Earth. The honey forms in this way, passing through about 30 individual animals, and finally matures in the cells of the comb in the warmest place of the hive. A universal food is thus born for the whole swarm, which provides them all with the energy they need to maintain a uniform temperature. In homeopathic medicine, Apis is an excellent remedy for acute and subacute inflammations of the skin, mucous membranes and joints, reflecting its relationship with heat (S.I.M.A., 2015).

COLONY COLLAPSE DISORDER AND THE IMPACTS OF ELECTROMAGNETISM

Bee losses have increased over the decades, and scientists suspect that many factors could be responsible for their decline. The Varroa mite, pesticides, viruses, monocultures, poor hygiene in the hive and climatic factors are the most widely cited possibilities (Fabre, 2011). Commencing in 2003–2004, bee colonies worldwide suddenly began to show symptoms of what was termed colony collapse disorder (CCD). CCD initially affects the worker bees, which desert the hive. One of the causal factors is likely to be the constant erosion of the genetic heritage of the species *Apis mellifera*. The extraordinary reshuffling of the subspecies, the selection towards pure breeds – which makes no sense in a non-domesticated animal, and the enormous loss of genetic variability caused by the artificial breeding of queens would logically lead to a ‘disease’ of the superorganism of the beehive (Contessi, 2016).

Recent efforts have been made to study another potential cause of the bee losses: man-made electromagnetic fields. To understand the potential effects of electromagnetic fields on bees, some context is necessary. Magneto-reception, the perception of the geomagnetic or electromagnetic fields, is a sensory modality well-established across all major groups of vertebrates and some invertebrates, although its presence in humans has rarely been tested and has yielded inconclusive results (Del Bene et al., 2008). Although many migrating and homing animals are sensitive to the Earth’s magnetic field, most humans are not consciously aware of the magnetic stimuli that we encounter in everyday life. Either we have lost a shared, ancestral magneto-sensory system, or our system lacks a conscious component with detectable neural activity, meaning that there is no apparent perceptual awareness by us (Wang et al., 2019).

When a biological organism is in an electric and/or magnetic field, an interaction inevitably takes place between the forces of the fields and the electric currents present in the tissues of the organism, which are generally good conductors, in particular at low frequencies. The result is always a ‘deviation of the conditions of the tissues from the previous condition of equilibrium’, which can be indifferent or manifest as advantageous or harmful, and temporary or permanent (Del Bene et al., 2008).

As already mentioned, flowers vibrate mechanically in response to the buzzing sounds of bees and emit electrical signals, and it has been hypothesised that these weak electric fields, together with other chemical and visual signals, increase the flower’s ability to attract pollinating insects. Studying bumblebees has shown that they are able to better distinguish the colours of flowers when they are electrically charged. In addition, insects acquire a positive electric charge during flight, while flowers produce a weak negative charge. When a bumblebee touches a flower, the electric potential of the plant changes and remains thus for a few minutes. This change allows other bumblebees to understand that the flower has been visited recently. Most of the surface of the bee’s body has a low potential electric charge. Normally, the antennae carry electric charges opposite to each other, and this polarity can be inverted, apparently at will, within a second. Bees are sensitive to electromagnetic fields: low-frequency fields increase their metabolism, while high-frequency fields cause them to flee. Variations of electromagnetic fields due to anthropogenic interferences can interact negatively with bees, and these interferences can confuse them and prevent them from returning to the hive. Similarly, bees are also sensitive to geomagnetic perturbations caused by solar flares. These flares interfere with their orientation and significantly increase the number of bees that do not return to their hive (Contessi, 2017).

In the 1950s, only 10 pW/cm² (Pico-Watts per square centimetre) was found on the ground in the radiofrequency electromagnetic field spectrum from 100kHz to 300GHz, whereas current values measure from a million to a billion times higher, owing to the rapid development of telecommunications (Del Bene et al., 2008).

Daniel Fabre published a study in 2011 where he linked the massive disappearance of bees that have been witnessed for almost a decade and especially in Northern Europe and North America, to

massive electromagnetic wave pollution that also mainly affected developed countries as a result of the spread of mobile phones. Fabre noted that the electromagnetic waves of a cell phone in activity near a hive disturbed the activity of bees. In particular, the worker bees responded to the frequencies emitted by the cellular phone placed under the hive, producing a typical hum ('piping') normally associated with the intrusion of strangers in the hive or with swarming (the abandonment of the hive to found a new colony), while under the control conditions, this hum (in Fabre's experimental sessions) was completely absent. According to Fabre, the bees' sensitivity to electromagnetic radiation could be explained by the presence of magnetite crystals in the animal's body fat (Sgorbissa, 2011). Back in 1978, Gould et al. have shown how the abdomen of adult bees contained very fine granules of a kind of 'magnetic memory' that could produce sensitivity to magnetic fields. Subsequent investigations showed that this magnetite iron was derived mostly from pollen, with higher levels found in the trophocytes or fat storage cells of foragers, up to levels of about 2.2 µg Fe/mg (Kuterbach, 1985). Scholars have since found that honey bees undergo iron biomineralisation, providing the basis for such a magneto-receptor located in the abdomen. This magneto-reception of honeybees has also been proposed on the basis of much behavioural evidence: the behavioural changes in comb building, the strength of the hive, the weight and quantity of bees, and the homing orientation when an extra magnetic field is added (Lambinet et al., 2017).

Therefore, there is clear evidence that electromagnetic frequencies are damaging to the health and behaviour of the bee, and, along with chemical pollution, there is little that the individual beekeeper can do except refrain from siting his/her beehives near a mobile phone mast or industrial farmscapes.

BEE-FRIENDLY BEEKEEPING

We know that environment and nutrition are key determinants of animal welfare and that animal health is ensured by a correct relationship between metabolism and internal homeostasis through the polarity of the transformation and maintenance – given by the constant relationship over time – of the *pH of gastric juice to the pH of blood* at optimal values. Crucially, bees must eat nectar, pollen and honey, and not sugar and syrup.

Regarding hive conditions, ApiSophia, inspired by Kozak and Curries' study on the effects of temperature and ventilation on Varroa (2011), has been conducting field surveys aimed at identifying more suitable housing solutions that would facilitate – rather than counteract – the bees' metabolic processes, and checking whether, in certain beehives, optimal environmental conditions could be found that are uncondusive to Varroa infestation. Monitoring has confirmed substantial and very interesting differences in temperature as well as carbon dioxide concentration, between hives with a closed wooden bottom (which were used before the 1980s and prior to the advent of the Varroa mite) and those with a net bottom and tray below. In addition, hives with a closed bottom show to allow bees to ensure the cleanliness of the hive. *Sun hives*² have also been examined and are showing excellent performance, their ovoid structure allowing for the movement of gases. Particularly detrimental however is the use of sheet metal rooves, because these can produce too much heat. This research is ongoing and will, when finalised, be available on the ApiSophia website.

It is essential for the life of the colony that the combs are made of 'pure' beeswax. In nature, bees are perfectly capable of building honeycombs without the beekeeper's intervention, but to facilitate their work (and reduce honey consumption by the bees), waxy sheets are used. Extreme care must be taken with the wax used for the preparation of the waxy sheets, as the wax, being a fatty substance, absorbs and retains fat-soluble pollutants including most pesticides. Moreover, owing to its

² The Sun Hive is an alternative beehive made of straw and designed by Günther Mancke (German beekeeper and sculptor; 1925–2020) to mimic the form of wild beehives.

high cost and scarcity, wax lends itself to tampering, and some producers add paraffin. Both the choice of location and the level of permanence of the apiaries can reduce problems of environmental contamination of the wax, which is itself a fatty substance that absorbs and holds toxic substances. The use of old combs is recommended, because they are rich in propolis that makes the wax more rigid, which can then better transmit the vibrations that bees produce, in particular the dance of the explorer bees as they communicate the location of the flower fields (Contessi, 2017).

Conventional beekeepers oppose swarming in order to maintain families rich in foraging bees, gaining an abundance of honey by artificially preventing the family from separating. Other beekeepers, more sensitive to the species' requirements, allow swarming and thus enable the only form of natural evolution possible for the hive organism. It can be said that conventional beekeepers violently enter the hive to profit from their forced overproduction and unfortunately ignore good management maxims such as 'Bees must eat honey and not sugar', or 'Let them swarm, it is their only form of regeneration'. Moreover, some beekeepers change the queen every year in the belief that she lays more eggs, but in fact, queens live 5 or more years and, like cows, they improve their performance with age.

Enlightened beekeepers should be universally recognised for the dedication they offer for all of humanity. Honey, wax, pollen and propolis can be seen as a gift from bees for humanity, and even their poison – painful for us if stung, becomes a medicine, a therapy. Beekeeping and agriculture are sisters, as they were when every farmer had his/her own hive, with honey being a by-product of little interest compared to the bees' role among the flowers, the trees and around the farmhouse, for the sake of the environment and the family.

CONCLUSION: THE IMPORTANCE OF FLOWER POWER

In many respects, we should consider the beehive as not just the hive itself but as the whole 3-km foraging radius or territory of the worker bees. This is the organism of which bees are the cells that nourish and feed on the flowers. In this way, everyone can help to create a bee-friendly world, a natural setting with wonderful flowered pastures seeded specifically for bees. We are thus all encouraged to guard the spontaneous borders of the fields, to plant and care for flowering meadows, to sow strips of wild flowers in urban and residential areas, in our gardens and on our balconies. Bees need pollen and nectar plants, and we can plan sowing and planting for next spring–summer, because it is precisely in summer that bees are more hungry. We can sow perennial mint (*Labiata*), scalar seedlings of purple tansy (*Phacelia*), borage and black mustard, flower beds destined for the annual sowing of garlic, poppies, sunflowers, celery, sweet clover (*Melilotus*). Bees will also enjoy the Japanese medlar, the viburnum, the snowdrops, the first hazelnuts, the veronica, the first dandelion, the willow, the minor ash, the cornelian cherry tree (*Cornus mas*). We find them on the catkins of the alder and the winter honeysuckle (*Lonicera fragrantissima*) and then again on the now more frequent dandelion and so gradually in a continuous and more intense dance. In this way, the desire to give bees a great wealth of flowers, including ornamental and aromatic, will be born, to realise for them what we call *the bee pharmacy*, because biodynamic beekeepers believe that if bees have the possibility, they will choose the plants and flowers that for them are curatives, similar to grazing cows, which choose the right herbs that, during their milk cycle, help their calves to recover from juvenile diseases (Menestrina, 2019).

In his cycle of lectures on The Bees, Rudolf Steiner said: 'Actually, every human being should show the greatest interest in this subject, because, much more than you can imagine, our lives depend upon beekeeping' (1998: 5). So, what we now consider to be the need of bees is increasingly being seen as our need, because a world in which bees can no longer live is a world that lacks what is essential for man. In this sense, bee health is a responsibility of all human beings (Menestrina, 2016) (Figure 24.1).



FIGURE 24.1 ‘VITA NOVA’ (New Life) by Julia Artico, Villa Maser, Treviso, Italy.

Bees Humankind Hexagon Crystal Light: This pentad, born from the encounter with a lecture by Rudolf Steiner on bees, generated the form of VITA NOVA. In a spiritual dialogue with the iconographic pathway enshrined in Villa Maser, the Vitruvian Man unexpectedly finds himself inscribed in a hexagon, evoking a bright future in harmony with every kingdom of nature. The life of bees and healthy beekeeping form an authentic image of this future (with permission from Julia Artico, JULIAARTICO.IT).

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25 Exploring a Dynamic Role for Water in Agriculture

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INTRODUCTION

This chapter is concerned with the healthy ‘forming’ of living organisms (their form development to maturity) and the ways this may be enhanced with methods that involve water. Few can really claim to have the full picture when it comes to understanding how plants and animals emerge into life, form themselves, grow and develop healthily. Within many traditional worldviews as well as some modern ones, there are believed to be subtle forces at work which organise life’s functions, and these are variously termed *pranha*, *chi* or the etheric. In my own practice with reed bed systems, water cleaning ecologies and landscapes with moving water, I noticed plants, and especially, flowers have better-developed forms when growing in certain situations rather than others. Having heard about life’s formative forces through working on a biodynamic farm and having learnt how projective geometry reveals principles found in natural forms, I found myself researching the relationships between qualities of form in water flow and the forming of life. Such work was pioneered by Theodor Schwenk (2014) in the 1950s. This chapter provides aspects of the results of that research, much of which has been collaborative.

The chapter explores the principles of form that are found in geometry, in the realm of pure idea and relates these to the observed flow movements, or gestures, in the realm of pure perception. It does not seek to justify any particular worldview, but the intention is to allow the relationships between the ideas and the observations to reveal what is at work.

Biodynamic agriculturalists and others are interested in strengthening the working of the forming principles, the formative forces within living organisms, in order to engender health in the farm ecology. Such forces are associated with the moon, the sun and the planets, and their positions and movements in relation to the earth and the stars. Water is seen to mediate these forces and influences, so one may enhance them by working with water. This chapter aims to build an understanding of water by examining the way water flows naturally and seeking the inherent principles in this. It begins by discussing the epistemological basis for this work, how, through taking a Goethean

approach, we can become more confident in our understanding. It then builds a picture of water flow by showing three distinct ‘movement gestures’ which interplay and can also be seen in life forms. These gestures can be experienced in a qualitative, artistic way, as with dramatic or sculptural gestures, but can also be defined geometrically and drawn simply but precisely through the interplay of points and lines. This provides a background to then look at the practice of ‘dynamisation’, the ‘enlivening’ of water by inducing particular movements, as well as other ways of moving water used in some agricultural practice. It examines the water movements in specifically designed vessels (Flowforms) as well as those in potentiation. The chapter concludes with a consideration of possible connections between the researcher and research results when investigating organic life.

PHENOMENOLOGICAL AND EPISTEMOLOGICAL BACKGROUND: THE UNION OF SENSE EXPERIENCE (PERCEPTS) AND IDEAS (CONCEPTS) AS THE BASIS OF KNOWLEDGE

If we wish to develop any clear and useful knowledge, we need to find appropriate concepts with which to meet the things we can experience with our senses. We judge our understanding by the degree to which the concepts make sense of the perceived phenomena, by the degree they create a satisfying meaning of our experience. Some concepts make meaning for a single occurrence only, while others, we realise, apply widely. If we can see an active principle to be at work in all instances, we may call it an archetypal idea. These archetypal ideas give us the greatest meaning, since we see the instances related to a wholeness, we see the principles of the whole at work in the parts.

Taking a monistic perspective, I see both our ideas and the sense percept as being united within the world we encounter. It is only in our minds that they are separate. This view comes to light in the works of J. W. von Goethe and was clarified by Rudolf Steiner (Seamon and Zajonc, 1998; Steiner, 1988). It has been expressed more recently by Gregory Bateson and Henri Bortoft (Bateson, 2002; Bortoft, 1996, 2012). Through the practice of science stemming from Goethe (termed Goethean inquiry, or Goethean phenomenology), we can gain moments of direct understanding, when it is possible to ‘see’ that the idea is one with the percept, to ‘realise’ an organising principle at work in the object of study as one perceives it (Colquhoun and Ewald, 1996; Hoffman, 2007; Holdrege, 2013). Once this has happened, the idea is always there, and it can be shared with others who may take it on intellectually or ‘realise’ the truth of it themselves. It is this quality of understanding which occurs in ‘A-ha moments’ or ‘Eureka’ experiences, which are the subject of neurological research (Danek and Salvi, 2020).

With water in flow, however, the organising principles are found to be flexible ideas that we can grasp but never entirely possess (Holdrege, 2013; Seamon and Zajonc, 1998). The archetypal ideas at work are manifold; they do provide a sense of reality, of certainty, but they interplay according to the context. This means that it would be inappropriate to state what is best practice for all situations. What we can do is build up a conceptual picture in connection with the phenomena we perceive, which helps to make meaning of one’s own practice.

The following section explores the forms that water takes up in non-turbulent flow, their appearance and their lawfulness. In particular, it explores how water can be sensitive. This will provide us with some ideas with which to look at the practice of dynamisation.

GEOMETRY AND GESTURES IN FLOW: SPIRAL AND RING VORTICES

Geometry gives us the clarity of precisely defined concepts. In this chapter, I search for some commonality between these concepts and gestures in the study of flow. In our standard school Euclidian¹ geometry, concepts are generally fixed as rigid measurements, including distances and

¹ Euclid of Alexandria, Greek mathematician and founder of classical geometry, b.300 BC.

angles. Projective geometry, developed mainly in the nineteenth and twentieth centuries, encompasses the Euclidian while also including the infinite, which is brought in from the far distance, such as through perspective drawings with vanishing points on the horizon line. This enables us to work with new spaces, in which the familiar Euclidian geometrical ideas are seen to be more restrictive cases of flexible thinking and universal ideas (Whicher, 2013).

Lawrence Edwards' work with projective geometry and natural form (2006) gives the defining geometrical idea of the spiral vortex in its pure form, which we see when water is being drawn towards a single distant point (under gravity this point is the earth's centre). We see this vortex every day as water goes down a plughole of a bath or sink. Edwards called this the watery vortex; I will call it the spiral vortex for reasons which will become clear later (see Figure 25.1). The geometry is what is known as a path-curve surface, composed of curved lines (Edwards, 2006). There are many such surfaces in natural forms, including eggs, buds, seed-bearing cones and the left ventricle of the heart. The lines are defined paths of movement in relation to four points, and one may choose any four points to create a path-curve. These points are named the invariant points and are unreachable or infinity points in terms of the movement.

In the case of the spiral vortex, shown in Figures 25.1 and 25.2, the lines of movement come from peripheral points in the infinitely distant line in the plane of the water surface, which may be easiest to think of as the horizon line, and they run to an infinitely distant point on the central axis. In the spiral vortex, unlike most path-curves, we can actually see the path of movement if we follow a suspended particle moving in the funnel surface. The movement runs spiralling down the funnel surface towards the infinitely distant point on the axis. For water flowing primarily under the draw of gravity, this axis tends to the vertical. Note that the spiral ripples that one sees in the photo do not show the path of movement, i.e. the flow, but are a structure in the flow, like standing waves in a stream.

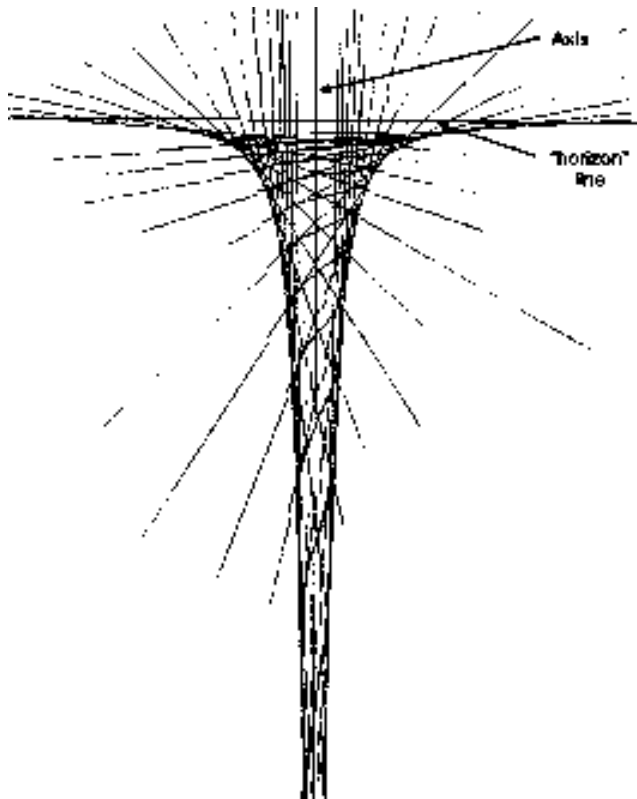


FIGURE 25.1 Spiral vortex geometry. (After Edwards, 2006.)

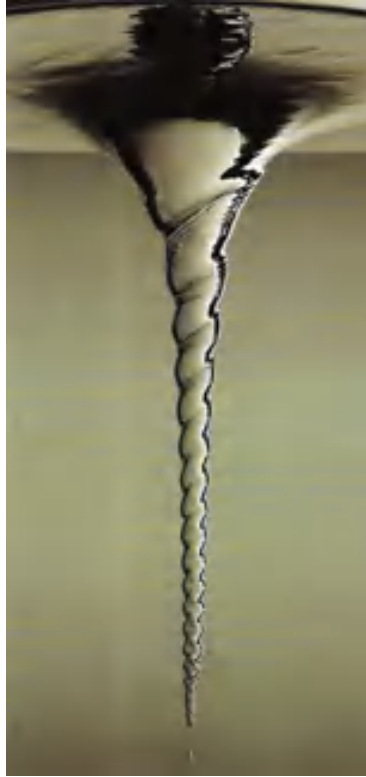


FIGURE 25.2 Spiral vortex. (Photo courtesy of Institute of Flow Science, Wilkens et al., 2005.)

Qualitatively, this vortex form can be experienced as very open, the surface stretching widely and also as having a contractive gesture, so that when we watch the form in flow, it draws suspended and floating matter towards the centre. It creates a concavity which, under the right conditions, can be many metres deep. This can be seen in Figure 25.3, both in the reflections on the surface and below it as the rope-like tube seen through the water.

This spiral vortex gesture is only part of the full picture. There is another form of fluid movement also called a vortex, the toroidal ring vortex. This is seen in air as smoke rings, often created by smokers and less often by volcanos. It can also be generated in water. It arises not when the fluid is being drawn under suction but when it is pushed, when it is under pressure from somewhere else. Figure 25.4 shows such a ring vortex.

This type of vortex can also be made quite easily in a still body of water by using a short discharge from a tube, as in Figure 25.5, which reveals both its form and its inherent layered structure.

The ring vortex also has a path-curve geometry, but with a transformed construction that embodies asymmetric spirals. These have been termed *spiroids* (Blackwood, 2012). Of significance here is that this ring vortex form does not have the same relation to the periphery; the movement relates to local, not peripheral, infinity points which are in the ring and on the axis. The movement in the form is more enclosing and relates more to itself, in that it rolls around its core. Qualitatively, we can experience it as having an expansive gesture, both when we observe its initial appearing (mushrooming out) and again at the end of its appearance when it meets resistance and deforms itself. It is very convex in its inherent surfaces. Thus, we can see the toroidal ring vortex, created with a push or a puff, as polar opposite in nature to the spiral vortex described above which was created with a draw or a suck.



FIGURE 25.3 Spiral vortex in free water, viewed from above. (Photo credit: Simon Charter.)

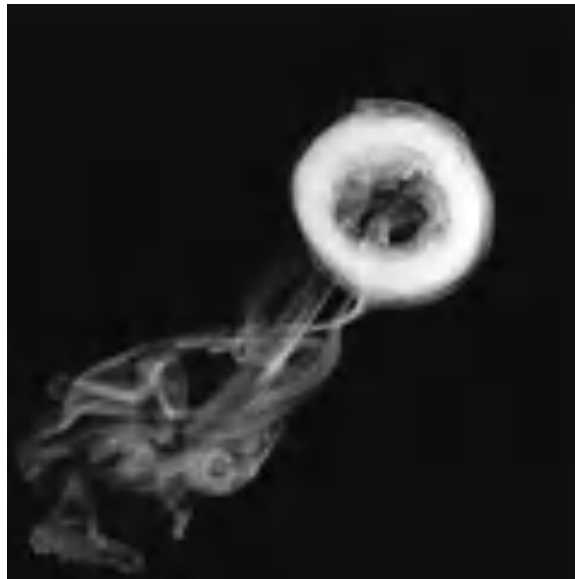


FIGURE 25.4 Ring vortex, smoke in air. (Photo credit: stock image from pinterest.com.)

Leonardo da Vinci, often seen as a forerunner of modern natural scientists, appears to have been aware of both these gestures. He made a close study of flow in water and is known to have used sawdust as a marker to observe the streaming of the liquid. He illustrated both of these gestures in a drawing (see Figure 25.6). The rings rising in the centre he called *welling*, and the spiral vortices around them he called *eddy*ing.

Da Vinci did not draw the way the surface looks, but rather his pen followed the paths of movement, and in doing, so he drew out the curved path of the water to find the gestures that the flow is making. For him, the drawing may have been a research methodology; he was looking for the lawfulness in nature as an aspect of the divinity (Kemp, referring to Leonardo's *Codex Madrid II*, 1989: 13).



FIGURE 25.5 Ring vortex viewed from the side, made using marker dye in water, pushed in a slow pulse from the tube below. (Photo credit: by kind permission Andreas Wilkens, Institute of Flow Sciences, Herrschried, Germany, www.stroemungsinstitut.de.)



FIGURE 25.6 Water falling into a pool by Leonardo da Vinci, circa 1511. Original drawing held in the Royal Library Windsor (no 12660). (Reproduction courtesy Royal Collection Trust/© Her Majesty Queen Elizabeth II 2020.)

If one observes gently flowing water in a river with these two archetypal gestures in mind, one can see there is always a play between the two in the way it moves, with underwater obstructions pushing into the flow and expansive welling up occurring in front. Then behind an obstruction, little contracting eddies can be seen, associated with the drawing down of the water. The water, under push or draw, acts accordingly with either the expansive gesture (towards the ring vortex) or the contractive one (towards the spiral vortex).

In conclusion to this discussion of the phenomena, it is clear that that water is sensitive to the forces of pressure and suction. These are invisible forming forces of which we do have a direct experience.

RHYTHM – ANOTHER GESTURE OF FLOW

Neither of these two archetypal movement forms seem totally stable in the real world. The spiral vortex will often collapse in an expansive swelling out, especially when its connection to the source of the draw is disturbed, and when the ring vortex encounters resistance it can form a rhythmic pattern as it dissipates, as shown in Figure 25.7.

Another phenomena seen at the surface of a body of water is a marriage of the two vortex gestures, which is called the twin eddy or half-ring vortex (Cowern, 2014). It can be reproduced fairly easily at the surface of still water or on a gently moving water body, by dipping in a rounded flat paddle vertically, giving it a little push and pulling it out again. At each side of the paddle, we see what appears to be two separate spiral vortices (eddies), but a marker in the water (such as ink or milk) reveals their underwater linkage in a half-ring. Careful observation shows that its form also changes in a rhythmic way, and it oscillates slowly around a mean semicircular form. It is interesting that we have both pushed the water in front and pulled the water behind the paddle, and the result is a combination of both gestures. I call both this and the full-ring vortex ‘movement organisms’ as

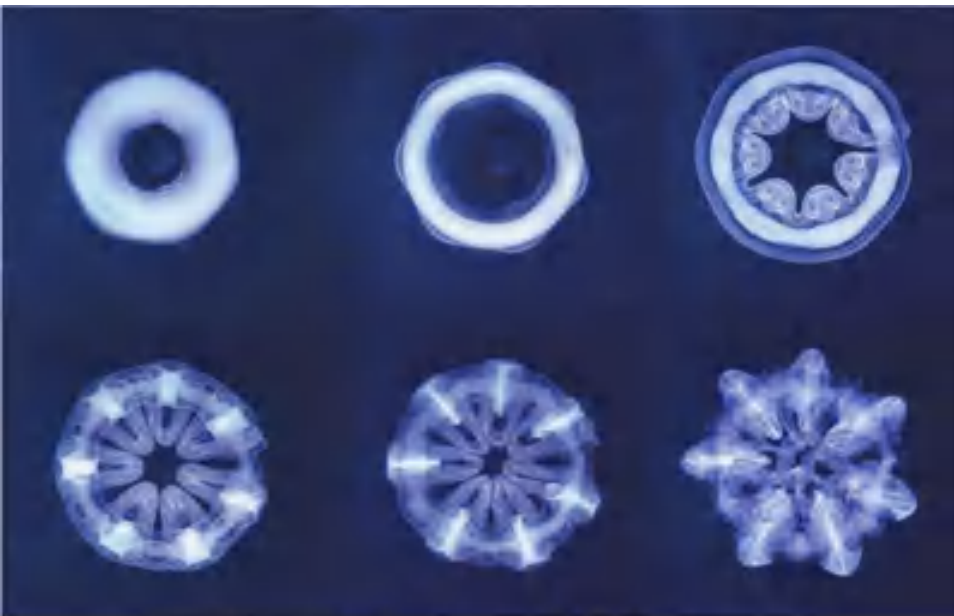


FIGURE 25.7 Collapsing ring vortex in water, seen end-on, as it slowly encounters a perpendicular glass wall. Top left shows the almost undisturbed toroidal ring, which changes through the forms to the bottom right where the form is beginning to disperse. (Photo credit: by kind permission of the Institute of Flow Science, Wilkens et al., 2005.)

they have a ‘birth’, a rhythmic ‘life’ and eventually a ‘death’, a dissolution of the form. The spiral vortex might also be referred to in the same way, but its form extends into the whole body of fluid so it does not have the same self-maintaining, independent existence we usually associate with the term ‘organism’.

If we introduce movement with a straight brushstroke through a suitable shallow layer of water, the brush pushes the water in front and draws in the water behind, and we see a wonderful rhythmic play involving the two polar movement gestures, as seen in Figure 25.8.

The phenomena appearing in Figure 25.8 is one of many rhythmic phenomena seen in fluid flow. There are the meanders, ripples and standing waves as seen in water but also in certain cloud formations. All of these can be seen as a play between the two polar gestures.

Illustrated here is the way that water in non-turbulent flow (also known as a harmonic laminar flow) has a tendency to form itself in a rhythmic play between the polar gestures of the two archetypal vortex forms, the spiral vortex and the ring vortex. I suggest therefore that there is actually a threefold archetype working in this flow, having an expansive pole, a contractive pole and a rhythmic aspect between these polar aspects.

I have tried to elucidate these three active forming ideas in water’s laminar flow. The half-ring vortex shows to my mind that it is possible to see them as one transformable idea, so we might call this the archetypal gesture of water, just as Goethe saw the archetypal gesture of plant development in the transformable leaf idea (von Goethe, 2009). We will now see how this threefold gesture is present in dynamisation.



FIGURE 25.8 Rhythmic pattern of alternating vortices (also known as the Kármán vortex street). (Photo credit: Simon Charter.)

THE DYNAMISATION OF WATER

Through studying the unfolding of life forms in the way proposed by Goethe, one can see particular species-specific forming influences and one can also see archetypal form gestures. These both work in a coherent way within the constraints of each spatial and temporal situation, such that we can recognise a specimen of a given species at all stages of its development. For instance, a nettle seedling with only two leaves can be recognised as the same species as an older specimen in full flower. In its growth, each organism can be seen to strive towards its specific, qualitatively recognisable form, but this is a fluid form which has a temporal dimension to it. There is no final, fixed form (blueprint or template) imprinted onto the organism in a mechanical way. Methods of achieving such an understanding of natural form are well described by Hoffman (2007), and Colquhoun and Ewald (1996). The observation of the forms of the ‘movement organisms’ in fluid flow, as previously described, can help us to grasp this aspect of life. These forming influences belong to the whole, and they permeate all the parts. In biodynamic agriculture, they are thought to originate in the peripheral entities of the moon, the planets and the stars (Daath, 2006; Thornton Smith, 2009). This is supported by a body of evidence for the effect of the moon on living organisms (e.g. Barlow, 2012; Endres and Shad, 2002), as well as by extensive correlation of tree-bud shape changes with planetary alignments (Edwards, 2006: 213–248). Working with these cosmic influences has shown positive results for many farmers and gardeners (Thun, 2003). When seeking to develop healthier plant life, one works to strengthen the working of such cosmic influences. To do this, one can choose appropriate planting and sowing times according to the positions of planets, and one can also apply biodynamic preparations which are carefully prepared, natural materials that bring specific benefits to the growing plants (von Wistingshausen et al., 2000).

These are enhanced through the mediation of water. One can work with movements in the water to both open the water to be sensitive and then to hold these influences within the water. One way to do this is through dynamisation, which can involve stirring up a container of water, by hand or by another mechanism. Before applying the biodynamic preparations, they are mixed in water in a barrel and stirred in a particular way, usually for an hour. A vortex is created and then broken, and then created again. The vortex opens out the surface and draws the funnel form down into the depth of the barrel which can be experienced as a contractive gesture. To break this form, one must exert pressure against the flow; the resulting movements are more chaotic and expansive but can be experienced as closing in the flow. The water is then stirred in the opposite direction to establish a vortex again, and this is then broken again. This is repeated continuously. The rhythmic stirring movement is not a simple repetition but a varying rhythm as it is in the heartbeat, in breathing and in other rhythmic functions of living organisms. The human being is present, with his/her consciousness accompanying the stirring process.

This dynamisation of the biodynamic preparation may be seen to embody the rhythmic play between the two movement gestures we have identified already: a contractive, well-formed gesture open to the surroundings (reaching out to the periphery) and an expansive, more chaotic gesture closing up within itself. This qualitative exploration of the flow can help us begin to see why dynamisation was originally indicated by Rudolf Steiner as a life-supporting process (Steiner, 2004), and why many farmers continue the practice (von Wistingshausen et al., 2000).

The biodynamic preparations are usually applied to the whole farm or garden rather than one part, and this reflects the holistic approach inherent in biodynamics (Osthaus, 2010). Such dynamised liquid stimulates particular processes in the soil and plant life, for instance the vegetative growth, the flowering or the fruit ripening process (Thun, 2003). If we think of dynamisation as the establishment of a movement organism in the water body, which has a spatial form and is also formed in time, this may indicate why the dynamised liquid may be resonant with forces for only a limited time period and needs to be applied soon after stirring has finished. For preparations to be used over large areas, dynamisation has been undertaken by machine, stirring with a motor and

suitable gearings, but this will have a more mechanical rhythm. Since the 1980s, dynamisation has also been undertaken in various countries using Flowform water sculptures. We will now look into what happens in this method of engendering movement in water.

FLOWFORM MOVEMENT: AN ALTERNATIVE METHOD OF DYNAMISATION

Flowforms are vessels specifically designed for water to embody rhythmic flow patterns. They are usually designed in clay with water flowing through them in an interactive way. The potential for such resonant water movements was discovered by John Wilkes while working with Theodor Schwenk in 1970 (Wilkes, 2003). They have been used for dynamisation among many other uses.

When water flows into a Flowform water sculpture (see Figure 25.9), it is channelled into a bowl where it meets resistance before it can flow out. If the space is appropriately formed and if the resistance at the outflow is not too much or too little for the incoming velocity of flow, then some water builds up in the bowl to meet the inflow, and the movement becomes unstable. The conditions for this instability are essential as the water needs to meet itself in a free and conducive space, and it is often seen to move in an unpredictable way until a resonant recurrent flow pattern asserts itself. In this way, the water is able to establish a stable rhythmic flow condition. When this first happens in a Flowform, the strength and vigour of the movement build up and one feels it ‘come to life’. The water reaches up further and reaches out further than previously. Even though it has an average frequency and reach, the rhythmic flow varies, just as a healthy human heart also has variability in its beat even while at rest (Campos, 2017).

The flow pattern in the Flowform vessel can be characterised in many ways; it can be regarded as a wave moving around the vessel, and in some designs, the wave moves in a clearly defined lemniscate. This ‘figure of 8’ form can also be seen as the path of an imagined particle in the water. In contrast to this observation of a part, we can try to observe and experience the movement of the whole body of water. We can then experience the water in a play between the rising expansive gesture (or the beginnings of it), as the water is being pushed up in one side of the vessel, and the contracting spiralling gesture (or the beginnings of it) as it is drawn out. The forms can also be seen to embody rhythm as expressed in all living organisms, an alternating play of expansion and contraction (Figure 25.10).



FIGURE 25.9 ‘Malmo’ Flowform Design by John Wilkes, Nigel Wells and Nick Weidmann. (Photo credit: Imke Naudascher.)



FIGURE 25.10 ‘Vortex’ Flowform Design, by John Wilkes, Nick Weidmann and Michael Monzies. (Photo credit: Simon Charter.)

Thus, the flow pattern can also be seen as having the same gestures of dynamisation as when done by hand in a barrel. However, Flowforms embody these principles in a variety of ways according to their design, and different types may be chosen to suit different purposes.

In agriculture, Flowforms have also been used to dynamise irrigation water. Based on my experiences and reports from others, this can result in statistically significant crop improvements (both quantitative and qualitative) over controls. However, as these results are seldom repeatable, they have not generally been published. This does, however, suggest that a non-mechanistic process is at work. For example, in 2004, a trial was performed with lettuce whereby the irrigation water was dynamised with Flowforms (Schwuckow et al., 2010: 77–83). Significant increases in total plant weight of between 25% and 32% over the control, as well as improvements in colour, form and flavour, were found. However, the following year, a more extensive trial with more crops showed no significant differences. A horticulturalist involved in the second trial was still convinced of improvements in overall crop health and especially initial root growth and went to great lengths to dynamise all his greenhouse irrigation water over future seasons. He and I both observed that his crops became crisper in form and texture and less susceptible to mould.

Another application of moving water in agriculture is in the production and use of aerated compost tea, and studies show the benefits of using this as a liquid nutrient fertiliser in a variety of crops (Min et al., 2015). A comparative trial of the performance of Flowforms compared to mechanical aeration has been undertaken in a soil-food-web laboratory on a biodynamic farm in the UK. The comparison was between aeration using an air pump that pushed bubbles into the liquid, and a Flowform cascade. With the Flowform, dissolved oxygen levels were higher for many days after aeration had ceased, but in the case of the air pump, as soon as the device was turned off, the oxygen levels dropped to the base level (Personal Communication, J. Williams, November 2017). More systematic research is required.

HOMEOPATHIC POTENTISATION

A final, but important, rhythmic process that is distinct from dynamisation but also done with water is homeopathic potentisation. Here, a specifically chosen substance is diluted repeatedly, as well as subjected to rhythmic movements (succussion) between dilutions. The method of succussion as originally advocated by Samuel Hahnemann – the father of homeopathy – involves raising the bottle of remedy and thumping it down on a thick book or similar soft but solid surface. For the water, this

technique involves a rhythmic play of more pressure (on the thump down) and less pressure (when lifted up). This is done in order to create a remedy, which can have specific healing effects on an organism, usually human or animal. It can also be used for a crop or a whole farm or garden ecology.

According to homeopathic practice, this potentisation process provides a more time-stable remedy whose influence can be brought into play in an organism many years after it has been made, and for this reason, remedies are not usually given a shelf life. Homeopathy in agriculture is a fast-developing area of research and practice in both India and South America (Sen et al., 2018), and some dramatic results have been achieved with certain plant illnesses (Kaviraj, 2012).

CONCLUDING DISCUSSION: RESEARCH WITH THE LIFE-FORMING FORCES

When researching with living organisms and subtle influences, one factor is seldom taken into account: the influence of the researcher on the research. In my experience over the last 30 years, experiments in this field that attempt to establish reproducibility and to prove a cause and effect in a reductionist way invariably fail. Often then the work is not published. French immunologist Jaques Benveniste was famously dogged by this issue of reproducibility after sceptics questioned the results of his research into high dilution effects on living tissue which he had published in the journal *Nature* (Davenas et al., 1988). Eventually, Benveniste found that reproducible results were possible for certain experimenters and not others. Experiments undertaken robotically also failed, unless a connection with an effective experimenter was established, and this was undertaken through using a sample of water (Personal Communication, J. Benveniste, December 1998).

Most subtle forming influences in living things are not physical or chemical in origin, but they can still be grasped clearly. These organising principles in life, these active ideas, can be considered aspects of the spiritual working in the physical world. If the influenced phenomena were predictable in a mechanistic way, we would feel obliged to take up a subservient position in relationship to this spiritual realm and become mechanistic in our own dealings with the living world. This would run counter to our ability to be free and independent, to work out of our own sense of responsibility in any given situation and to seek what we find to be true, beautiful and good. The more we get to know the qualities of these active influences at work in the natural world, the more these influences also become creative, artistic tendencies in us, and we willingly work in tune with them.

Many influences in the environment are working on plants, yet overarching these are subtle forming forces that may be mediated by the water in and around the organism. These work as a whole on the whole plant and involve the surrounding rocks, plants, animals, humans and astronomical events. Based on my work with water, there seem to be forces working both from within outward and from the periphery inward, and these work to achieve the time-variable but characteristic form of the organism.

The scientific challenge is to be open to these subtle factors and also to become clearer as to what is going on with both the sense-perceptible world and ideas working in the perceived phenomena (i.e. natural laws and identifiable gestures). We are looking for the satisfying marriage of percept and concept, of phenomena and idea. If we can educate ourselves to read the ideas within what we perceive, then the meaning of the workings of the natural world can increasingly unfold. One of the roles of water claimed by Theodor Schwenk is that it can help us to read this world of living beings. Through observation of its fluidity, 'our way of thinking becomes changed and more suited to the understanding of what is alive' (2014: 11). This need is far greater now than when Schwenk originally suggested this in 1961, and it may be an essential step if we wish to free ourselves from trying to manipulate nature and learn to work and play responsibly with her.

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26 Land Whispering

Practical Applications of Consciousness and Subtle Energy Awareness in Agriculture

Patrick MacManaway

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LAND WHISPERING

This chapter is an account of experiences of land whispering applied – quite literally – in the field. Due to client confidentiality, these can stand only as anecdotal stories.

After 25 years of full-time practice, with experience and awareness developed over work on thousands of properties, domestic and commercial as well as agricultural, my main aim is to inspire, inform and invite readers to ‘try this at home and on the farm’ and to come to their own conclusions regarding what I can share from the harvest of my own experience and reflections.

My background and the perspective that I hold stems from being born and raised into a family of traditional spiritual healers, psychics, mediums and dowsers running a healing and teaching centre in rural Scotland.

A fundamental principle in the understandings and teachings that occurred in both the classroom and around the kitchen table was to understand that the tone, quality and content of our mind and spirit, our attention and intentions, were defining of our physical circumstance and health.

My parents’ enterprise was supported by six acres of garden and pastures – mum was green-fingered – everything seemed to grow effortlessly and extraordinarily – nature spirits were clearly ‘on team’, and showing off the best of what was possible through close communication and cooperation arising from her sensitivity, awareness and ability to communicate directly with them.

Rabbits and moles dared not enter her garden and were rapidly and fiercely admonished if boundaries were transgressed. Birds were advised season by season which trees in the orchard were theirs to take fruit from, leaving the rest for the people – their compliance was amazing and consistent.

I was raised therefore with an understanding that all of nature is, at source, a vibrational, interactive intelligence, with our physical, experiential world being a reflection and expression of that vibrational content and tone. My own subsequent experiences, experimentation and observations have, to date, been consistent with that premise.

This fundamental awareness – of the impact and interaction of our own consciousness, heart and mind, with the surrounding intelligence of our landscape and environment, has underpinned human understanding, attitudes and practices in agriculture during 6,500 years of land management.

It seems wise to bring our awareness and focus to a fully contemporary engagement with the sustaining, benevolent and extraordinarily generous intelligences and life forces that we are in daily contact and communication with, and on which we rely and depend upon absolutely.

The quantum model includes the inevitable effects of our human observation, attention and intentions on any given outcome, and so is a good basis for analysing and interpreting the observations of the effects that our ability to interact that our consciousness allows us. Perhaps simple electromagnetism and wave physics, which includes the wave frequencies and waveforms of our own thoughts and feelings and their effects on other electromagnetic fields, is also richly informative.

Our honest science is tasked with the creation of evolving hypotheses to accommodate all observable phenomena. Perhaps if we can understand the core processes and translate the language of our traditional agricultural spiritual traditions as being simple and effective applications of consciousness, then we can bridge the span of time, language and belief, and bring the best of all things into our own contemporary present.

COMMUNICATION WITH THE 'SPIRIT REALMS': FROM HUMAN AND ANGELIC TO ELEMENTAL AND NATURE SPIRITS

Plato tells us that 'the Gods are Numbers'.

Number expressed in time is music, frequency, wavelength and waveform – number expressed in space is structure, architecture, physiology.

Each level of intelligence has its own frequency or band of frequencies – in traditional understanding, the deepest are the dragons – the earth meridians – pathways of energy, chi, electromagnetism – telluric currents.¹

These perhaps are the pathways of current and flow in the sustaining and surrounding planetary toroidal field² – analogous to the meridians of the human acupuncture system, and traditionally worked with on the earth using needles of stone, wood and metals alongside many other techniques and practices.

Within the stable toroidal magnetic field, elemental consciousness can establish an experiential, 3D world of elemental form – substance within the realms of earth, water, air and fire – each with their own dynamic and interactive intelligence.

Within that elemental world, a population of nature spirits fills the environment with spectacular diversity, creativity and adaptation – shared by we humans, as one of the natural spirits of the ecosystem.

In addressing landscape, it is good to consider the health and vitality, awareness and engagement of each of these levels of vibration intelligence, and of our connection and engagement with them as present members of an interactive system.

The stories and reflections that follow explore each of these vibrational realms.

UNDERSTANDING DRAGONS/EARTH MERIDIANS

My engagement with holistic environmental practices started with an awareness of geopathic stress – always perhaps recognised, but brought back to contemporary awareness by the work of Bavarian water dowser, Baron Gustav Freiherr von Pohl, who published his observations in 1928,

¹ A telluric current is an electric current which moves underground or through the sea.

² In mathematics, a toroid is a surface of revolution with a hole in the middle, like a doughnut.

which were subsequently translated into English and published as ‘Earth Currents – Causative Factor of Cancer and Other Diseases’.

Von Pohl observed and documented that all life seemed to be aware of and responsive to the electromagnetism transmitted to the surface along and through pathways of underground water. He documented that lightning strikes occurred where underground streams crossed the points of greatest electromagnetic conductivity in the local landscape and that a wide variety of plants, birds and animals were either tolerant, strongly attracted to, or assiduous avoiders of such energetic fields in their environment:

- Birds and mammals absolutely avoided them for nesting, burrowing or sleeping space or extended periods;
- Fruit trees showed poor health, blossom and fruiting when planted over them;
- Insects, including honeybees, thrived and preferred to nest over them, fungi generally, beans and lentils also seemed to prefer them.

A whole range of species preferences and tolerance windows of the baseline electromagnetism, landscape energy or chi emerges in relation to its conductive capacity. The traditional categorisation of Feng Shui practitioners refers to this as *yin chi* or *yang chi* – which alone can helpfully guide the placement of structures and planting...

When out of balance or out of phase with the use of space, geopathic stress can arise, which is classically associated with a disturbance of the pineal and adrenal glands, that can have widespread and far-reaching effects, including on sleep and fertility cycles.

THE CURIOUS CASE OF ANGORA RABBITS

Friends of ours in Fife, Scotland, engaged their teenage daughter in a project to raise Angora rabbits for cuddly fun and pocket money profit. An L-shaped shed with five identical rabbit hutches was constructed for the purpose, each identical in construction, each identical to the eye.

After a year of breeding, I was asked to see if I could identify the source of a mystery.

Every single litter bred and born in hutch #3 either miscarried or was stillborn, regardless of the doe currently resident there. Two post-mortems conducted by the local veterinarian on the stillborn babies revealed no apparent cause of death.

Once on site, dowsing for underground water revealed a substantial flow in a narrow rock fissure that ran directly, but only, below hutch #3.

Classically, for species depleted and stressed by their influence, such energies are remedially grounded and dispersed by either placing highly paramagnetic rock or inserting iron or steel on the energy pathway upstream of the area of concern.

A steel rod was inserted into a convenient area of lawn upstream of the breeding area, dowsed for length and diameter, and countersunk four inches to make it safe for bare feet.

The pregnant doe in hutch #3, that was already halfway through her term, had stillbirths at the end of that cycle, so the effect seems to have been in the first or early second trimester. Following this, no further stillbirths occurred ever again in hutch #3, which became as healthy for the rabbits as all the other hutches.

This is a very classic illustration of one of the most fundamental awarenesses in land whispering, of the direct effects of local vibration resonance through pathways of energy in the landscape. Sometimes this can be too *yin* – receptive, ultimately draining and depleting, and sometimes too *yang* – stimulating, ultimately over-stimulating and leading to exhaustion and burnout.

A dairy herd in Northern Scotland plagued with mastitis in their indoor barn were found to have seven strong underground streams running underneath the structure. Through a similar process of earth acupuncture, steel rods were inserted upstream of the barn to disperse the incompatible magnetic energies, resulting in a 60% drop of mastitis within 10 days.



FIGURE 26.1 Brussels sprouts eaten by dragon in Scotland.

Plants, animal and people in the wrong growing environment fail to thrive – von Pohl documented that every single one of 52 people dying over a 10-year period from cancer in the town of Vilsbiburg was sleeping over an underground stream – Brussels sprouts don't like them and neither do spruce trees (Figures 26.1 and 26.2).

Traditionally, we have observed and followed the plants that volunteer in an area and how wild-life prefers or avoids different places in order to site our own homes and infrastructure. In Scotland, the croft house was built where the cattle, sheep and dogs chose to lie down to sleep.

It is good to pay attention to the dragons in our landscape.

ENGAGING WITH ELEMENTAL CONSCIOUSNESS

Next up from dragons on the fretboard scale are the elementals – the vibrational intelligence of the tangible elemental states of earth, air, fire and water. Each of these tangible states of matter has a vibrational and governing intelligence within them, directing and guiding the physical, particle state.

Traditionally, in Northern Europe, the intelligence of earth is that of gnome, of water undine or sprite, of air the sylphs, and in fire the salamander.

In my experience, the elemental consciousness is entirely focused on channelling energy into the world in whatever form or vibrational tone is required or asked for, without judgement or prejudice. When lovingly and respectfully communicated with, and given clarity of our needs, either for



FIGURE 26.2 Cancerous burls on spruce trees in Vermont.

ourselves, plants or animals, they seem extraordinarily able to direct their energy to support those processes or purposes.

I can share some stories of working with the vibrational consciousness of water which is so critical and central to all life, at home as in the garden and on the farm.

During a drought year where I lived in Vermont, many shallow springs went dry, dowsers and drillers were busy finding deeper streams and aquifers for alternative supply, but it was difficult for drilling equipment to access some of the more remote rural properties.

I was asked to look at one such, where a three-foot-deep woodland spring had supplied a family home with sweet freshwater year-round for over 20 years. Accompanied by a colleague and friend, we walked up into the woods to what was now a dry hole. Tuning in to the vibrational presence however, the 'spirit' or guiding intelligence was still strongly present, although no water was there. Through a process of telepathic communication and dowsing, we established that the spring was able to restore itself, that it was willing to restore itself to meet the human need, and that to help and support the process it would like us to sing to it.

So we sang:

And within 48 hours and in the absence of any rain, it was brim-full with water again and remained so for seasons after.

I had an almost identical experience on another property 2 weeks later, which asked for singing and restored itself within 48 hours.

And then, a client for whom I was doing other work told me her own story of her spring going dry, being inspired to sing to it and then seeing it come back to life.

It turns out that there are many deep and old traditions everywhere of water blessings, especially directed to springs, wells and rivers and which are typically renewed on at least an annual basis.

During a farm field day in New South Wales for interested farmers in the area, we as a group blessed the farm borehole, which supplied water to troughs for sheep in approximately half of the 120 paddocks, the other paddocks having ponds for stock water instead. In tasting the water directly from the bore before and after blessing, we were amazed and delighted in the enhancement of palatability, sweetness and the sense of a refreshing, thirst-quenching drink.

I received a communication 2 weeks later from the hosting farmer letting me know that since the water blessing, the sheep, who hitherto had shown a mild but not substantial preference for the trough water over that in the ponds, now when released through rotation from a pond field to a trough field, were galloping as a flock up to 1.4 km to the trough and staying there until all had drunk their fill.

I revisited the farm 6 months later, at which point the behaviour was still continuing, and extended our work and experiment by blessing all of the ponds. The sheep immediately became equally happy with both trough and pond water and stopped galloping uphill.

I have subsequently accrued many stories of water quality improving in both palatability and even sometimes mineral and salt content with loving connection and a communicated request – boreholes restoring their standing level and volume – on one occasion a creek that had been dry for 8 years bringing its deep gravel-based water up to the surface after a blessing – but only on the property in question and not upstream or downstream on their neighbours' properties (Figures 26.3 and 26.4).



FIGURE 26.3 Dry creek before.



FIGURE 26.4 Wet creek after.

Apparently, the response received is very particular and specific to our requests.

I have a particularly treasured memory of an early morning visit to a farm in Coastal Queensland, which I had previously visited 6 months before. One of the tasks on the list of work initially had been to dowse for, and site, a new borehole, as the existing bore was excessively saline and unpalatable for humans, stock or indeed the garden.

During our work of clearing, balancing and blessing all levels of intelligence in the landscape, and clearly communicating current human needs in relation to the use of this space, the borehole miraculously became sweet and salt free – we were amazed and delighted. This lasted for about 3 months, after which the salinity gradually increased back to its previous un-useable level. So we came back to check in and chat with the spirit of the bore and the local water deva governing all such matters.

Love and appreciation and singing were asked for and inspired, and one of my colleagues and friends present on that day has a highly trained and beautiful singing voice – the rest of us were moved to tears – the singing concluded after maybe 4 minutes – we felt a sense of conclusion – took and tasted freshwater from the bore – and found its bottle quality sweet and delicious. Sustaining and maintaining the relationship seems essential and very deeply rewarding.

Beautiful pictures of the effects of our attention on water can be seen in the work of Dr Masaru Emoto – if you haven't seen them, they truly speak the 'thousand words' more than I can write them.

Similarly to working with the elemental water intelligence, we can work with the gnomes of the earth – all about soil structure and everything to do with supporting the entirety of soil ecology – they seem very able to work to create the ideal conditions for specific plants or indeed for specific animals grazing or ourselves harvesting those plants – as with the water spirit, they need only be to

lovingly asked for clear and specific help and support, and an open dialogue held to hear anything needed from us to further the process – whether that might be love, song, weeding or good compost.

I find that taking time to clearly communicate to the elemental intelligence of growing spaces before, and as seed is sown or plants introduced, as well as clear communication with the nature spirits – covered next – helps set the vibrational tone of the space to the optimum for the desired harvest.

Establishing a loving rapport with the spirit of air allows us the capacity to influence our local weather to small or large degrees, depending on their ability to accommodate. Connecting our hearts and minds to our needs and requesting and having respectful and heart-felt communication can help to support favourable micro-climate conditions and also benevolent timing and intensity of weather events.

Some of my clients are skilled in intentionally establishing and holding a ‘weather bubble’ over their farm – one dairy farming couple in Vermont can keep rain storms away – splitting and passing to each side of the farm as they pass through – for the critical 2 weeks of haying, after which they take it down and let all do its own thing again – other clients seem able to keep hail from fruit trees – others to be able to take best advantage of any rain available and increase rainfall above regional average.

One of my Australian clients informed me of a whimsical and envious complaint from a friend and neighbour 30km away on the next ridge of hills, who called her on the phone one morning during a dry season to let her know that the only visible cloud in the sky was over her farm and dropping rain.

Elemental fire is also in my experience interactive and mutable by connection and communication – I have experienced fire-walking many times over 24 years and occasionally led fire-walks myself, the most extraordinary miracle is that such an intense element can, in the right state of mind and consciousness, be amenable to sustained direct contact and energise without harming.

There are many connections available to working with fire, in so many ways, in our daily homes, work and lives – it is good to remember that these should be engaged with through direct consciousness, and respectfully and lovingly asking for help to support our needs and endeavours.

ENGAGING WITH NATURE SPIRIT CONSCIOUSNESS

The world created, held and nurtured with life energy by the elementals, is populated by the rest of us – including the very many and various vibrational intelligences of the spirits of nature.

There are nature spirits associated with every natural process, fungi, bacteria, insects, plants, birds, animals – they are sometimes considered as the vibrational intelligence within or of the process, sometimes as companion helpers to the process.

Some, like wildlife, avoid human company or interaction, and choose to inhabit the wilder places, of which we should be sure that there are always plenty, otherwise trouble tends to arise.

Others are comfortable and enjoy working with humans in the landscape, and perhaps find their own fulfilment enhanced within a cooperative working environment in exactly the same way that we ourselves do.

We can consider the individual and collective intelligence of oats and potatoes, of broccoli and kale and their companion deva or fairy – the host of nature spirits is already in community, in our growing spaces, coming from native plants and previous management, and ensures that the spirit of the current crop is welcomed and hosted and supported by all already there.

I have clients in rural England who pay me in cheese. On one occasion, I was called with great urgency to look at a field of alfalfa/lucerne which the cows had just that day been moved onto, and within just a few hours, several were showing signs of life-threatening bloat. Identified early, the cows had been drenched with vegetable oil and all were well – however, this field was the last green forage for that season on the farm, and losing it for grazing would leave a large hole in the supply of dry winter feed.

On getting further details once on site, I was told that the crop had been planted on the same day with the same seed, equipment and operator, as an immediately adjacent field, separated only by a stone wall, which had been successfully grazed until just the previous day.

WHY THE DIFFERENCE? WHAT MIGHT BE DONE?

Plants have a catalogue of secondary metabolites that they can rapidly create to make themselves unpalatable, indigestible and unattractive to pests and predators, as well as for adaptation to temperature and moisture variations. Giraffes in Africa must stalk acacia trees from downwind to enable them to achieve at least a short browse before the trees mobilise tannins to render their leaves unpalatable. A ground cherry in the American West also must be stalked from downwind – if it detects the presence of the human gatherer, its delicious sweetness turns almost instantly sour.

Apparently, this field of alfalfa, unlike its neighbour over the wall, had mobilised a hostile, self-defensive response to the grazing cattle, perceiving itself to be threatened and besieged, whereas the intelligences at play in the adjacent field had apparently understood and cooperatively participated in the agricultural process and purpose, aligning themselves to providing high-quality nutrition for the cattle, after which they would be planted and grown again in the same process in the seasons to follow.

I find that engaging with vibrational intelligence telepathically is a little like a lucid dream, where one has self-awareness and volitional control, or perhaps like an interactive video game. Perceptions are visual, imaginal, sensations are felt, ideas and understandings are perceived – a complex of multi-sensory awareness, connection and communication is available if we align our hearts and minds to those wavelengths by holding in our heart-mind the image or idea of those intelligences with which we wish to be in communication.

Rather like a large family round a kitchen table. It can be chaotic and raucous – this case was.

Through quiet meditative communication in this way, I was able to create a full and clear understanding of circumstance, activity and purpose, between the spirit or intelligence of the farm, the field, the soil, the plants, the devic or fairy community, the collective intelligence of the cattle there and for good measure Bridget – Celtic Goddess and saint of domesticated animals. With clarity of understanding achieved, all went peacefully happy and harmonious in my perceptions. We waited 12 hours and then let the cattle back into the first grazing strip of the field. All was well and the whole field was subsequently fully grazed with no further problem or incident.

This experience is one that continues to both amaze and humble me – apparently, the communication between myself and the guiding and governing intelligence was real and actual – apparently, the plants had the capacity, at their discretion, to adjust their metabolic profile to the advantage of the cattle, and the human enterprise – and clearly chose to do so – and went ahead and did so.

I live in awe of the capacity and generosity of the environment around us to support us in perhaps currently unimaginable ways, with loving communication established between the vibrational community of which we are a part.

I also offer the subsequent reflection on the small extent to which our food is grown where this level of communication is established, compared to the potential consequence when, as with the alfalfa, our food is grown under circumstances where it mobilises secondary metabolites against its predator – in this case ourselves – in order to render itself indigestible and toxic in order to protect itself.

It's a sobering thought, and best to bless everything always. There are many long traditions of that.

Another story to share, that opens us to what can be possible, comes from an apple grower who attended my land whispering workshops for farmers. Already skilled with hail-related weather control, she learned to use telepathy, dowsing and muscle testing to communicate daily with her trees, to establish how best to serve their needs regarding water, compost, nutritional amendments and pruning.

After several weeks of deepening rapport, she had raised with them the issue that supermarket specifications required her to harvest the apples in a small and specific size range, for which reason the orchard historically had been harvested three times per season with associated time and labour costs.

COULD THE TREES HELP IN ANY WAY?

When she returned to the next workshop, with bags of delicious apples with Brix readings³ in mid to high teens, she informed us that the whole orchard had matured to harvest at uniform size, all the branches of all the trees together, and that only one picking had been required that year.

Again, with further amazement and ever-deepening humility, we are shown that the communication is real, that the capacity is available, and that cooperation and help can be gifted in response to loving gratitude and simple request.

What an amazing and wonderful planet to live on!

There are many more stories of nature spirit communication and cooperation, but if you simply open your heart to them, you will find them in the garden and on the farm and will soon start telling your own stories...

HEALING AND RENEWAL OF RESIDUAL HUMAN ENERGIES

Landscape holds the memories and resonance of things past as well as present, and while we all enjoy those places full of the resonance of love and laughter, sometimes those place memories, or patterns of 'predecessor *chi*', are ill at ease and disquieting, leaving a sense of restless uneasiness, emptiness, coldness and sterility.

Such causes are classically associated with battlefields, sites of massacre or murder or suicide, critical points of conflict between indigenous and colonial peoples, sites of bankruptcy, disappointment or despair – the various lists of human stress and trauma in small and large degrees and scales.

Practitioners addressing healing work of this nature consider stress patterns in the earth meridians, the elemental and nature spirit realms, and also the resonant energies of ghosts or 'earthbound souls', curses on the property, and residual human emotional and psychological stress patterns that have become embedded or ingrained in the resonant matrix of the place.

Addressing these resonances with healing intention can, with patience, bring renewal and refreshment, allowing the life forces of elemental and nature spirit to return to engaged present activity rather than being caught up in, and compromised by, residual dissonance and frozen life force. Renewed and refreshed, like the patterns in the sand washed away by the incoming and outgoing tide, leaving all clear and fresh over again.

I worked on one farm in New South Wales that had been the site of a massacre of indigenous aboriginal people during the colonial period. The farmers there described it to me as being 'Rolls Royce property with no spark plugs'. For many years, they had applied regenerative agriculture techniques of grazing and crop rotation and had set up radionics emitters through which biodynamic preparations were being broadcast – nearly always with disappointing results. I engaged in a deep, quiet meditative healing process on the landscape to bring all to peace, and when I felt it had arrived, advised the elemental and nature spirits of current agricultural practices and the human needs there.

Two weeks after my work, a crop of sorghum was planted, which yielded 2.3 tonnes per acre, which compared favourably with their long-term average of 1 tonne/acre and their previous best yield of 1.6 tonne/acre. Almost more excitingly, they reported that the crop had been so full of

³ Brix is a scale based on the amount that light bends when it passes through a liquid, and measures the percent solids in a given weight of plant juice. It is used to determine quality.

spiders and wasps – natural predators to the troublesome *Heliothis* grub – that they alone out of ten similar neighbours had not needed to treat the *Heliothis* with sprays of any kind.

The response of landscape to the healing and release of residual stresses and traumas can be dramatic, as in this case, or may be slight and subtle – not all place memory patterns are stressful, and some perhaps are only a little so; therefore, the degree of lifting is proportional to the degree of previous burden – but it would appear that up to 30% of the growing capacity or life force of landscape can be compromised through trauma and subsequently restored through loving attention.

FURTHER TUNING AND OPTIMISATIONS

Once a growing area is clear of all residual hangover, balanced and clear in its earth meridians, engaged and communed with at the elemental and nature spirit levels, there is a wide range of further enhancements that we can bring to support those natural processes, with loving respect and inviting cooperation rather than trying to drive or exploit the system through depleting over-exertion. Much like balancing soil pH, moisture and shade/sunlight conditions, we can increase and enhance the most helpful and beneficial vibrational resonances for the plants and animals under our care.

Sound can be used – recorded or live voice or instrument – vibrational technologies such as radionics – homeopathy – standing stones and stone circles – the list is as long as our imagination.

Researchers Burke and Halberg⁴ documented a 300% increase in yield of indigenous South American corn after leaving the seeds for a period in a Mayan pyramid before planting.

A small, simply constructed stone circle on a farm in Vermont achieved a 100% germination on a rice crop when four other farms in the same regional trial achieved a germination rate of only 25%.

Clearly, there is a world of exploration available to us to sing the vibrational songs to the plants and animals and landscapes in our care that they most love and enjoy to hear.

CONCLUSION

I hope that these stories and reflections are of help in guiding and inspiring us all to ask ourselves – and our landscapes – what is possible, and what is most synergistic and helpful and healthy.

The journey into this work seems to lead us through a progressive sequence of questions for the enquiring mind.

First – is this real? does this work?

After which – its real! it works! Can I do it?

And finally – I can do it! how can I do it better and more?

I hope you will choose to share that lifelong journey with the ever-widening community of like-minded friends.

⁴ Burke, J. and Halberg, J. (2005) *Seed of Knowledge, Stone of Plenty: Understanding the Lost Technology of the Ancient Megalith-Builders*. San Francisco, CA: Council Oak Books.



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27 Rediscovering Ancient Pathways for Regenerative Agriculture

Charles Massy

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...water from plants, fire, clouds, rain, sun, moon, stars, stories and sites, songs, paintings, dancing... looking after country involves all of these things together – you can’t have one without the other. Maintaining language and culture is a tool for relating to country and looking after everything that is on it.

Veronica Dobson, Arrernte Elder of Northern Australia, defining indigenous knowledge.

NAILSMA (2006: 3)

SUBTLE ENERGY AS THE NEXT BIG ‘FREEBIE’ IN AGRICULTURE

It is an early winter’s day, 2013, in the inland city of Dubbo in Central West NSW. I am 1 of 20 or so farmers walking around a city park with two bent wire rods in my hands. They sit like giant revolvers, held out in front of us and pointing forward. We are learning to divine (or dowse), first for underground water streams and later for cosmic energy flows in the landscape. To my surprise, I find I can do this after only a brief lesson. I know because my two wires suddenly and violently cross onto my chest as I pass across either the stream or energy flow. The accurate locations of both water and energy streams are confirmed by others in the group, and particularly by our teacher, Dr. Patrick MacManaway. What I find even more remarkable is that I can dowse for a water stream, and not the energy stream, simply by focussing my thought-patterns – or my mental ‘intent’. Though I had read about such mental power, for me this is the first confirmation. It had a deep impact.

What made me undertake the 7-hour drive to Dubbo for 3 days of workshops on ‘subtle energies’ is the increasing number of regenerative farmers I have met who have begun working with these energies. They are leading, practical, professional and profitable farmers and have come to this practice from different directions. Despite my initial scepticism, my increasing encounters with this issue meant that, in all integrity, I could no longer ignore it.

Patrick MacManaway is a Scot who gained a medical degree at the prestigious faculty of the University of Edinburgh. In 1994, he moved full time into working in the field of ‘geomancy’ and as a subtle energy expert, whereby he concentrates on enhancing the positive influences of subtle

energy in our landscapes, infrastructure and animals – and specifically in regenerative agriculture. Today, he is internationally recognised and respected in his field.

MacManaway calls himself a holistic therapist. He helps farming landscapes and soils perform better, relieves ‘geopathic’ stress in landscapes (i.e. negative energy fields or flows) and is specifically skilled in using earth acupuncture to do so. His father, also a medically trained doctor, discovered he had a gift of healing when he was stranded with a battalion of soldiers and no medical supplies on the beach of Dunkirk in World War II. While they were being strafed by Messerschmitt, and as casualties mounted, his father’s only tools were the physical laying-on of hands and providing kind words to his troops. And it worked, often in seemingly miraculous fashion. Patrick discovered he also had the ‘gift’, and so he switched to using the special sensitivities he had been endowed with to heal landscapes, people and animals via this different pathway.

Patrick MacManaway was first brought to Australia in 2010 by Terry McCosker and his Resource Consulting Services. McCosker had already introduced Australian farmers to the concept of subtle energies when he brought out the American expert Dr. Phil Wheeler to run workshops on dowsing in 2001. As more regenerative farmers experienced positive results from this programme, McCosker next invited MacManaway to broaden the implications of the positive use of subtle energies in farming and human health. Says McCosker, ‘Sunlight and rainfall are natural assets which are seen as “freebies” in your production system that you can manage profit from. With the right knowledge and techniques, subtle energy is another natural asset that you can benefit from’. This leads McCosker to conclude that ‘Subtle energy is the next big “freebie” in agriculture’.¹

From an exploration of the origins of biodynamics, it is clear that certain elements of Rudolf Steiner’s work came from medieval European peasants. Such farmers could detect and work with ancient earth and cosmic energies and were connected to nature spirits, or what is called ‘animism’ – a trope for beliefs that the natural world is ‘inspired’ – that is, inhabited by nature spirits, that a sacred reality exists and is different from everyday profane realities, and is manifested at special times and places, usually through natural entities and places (Taylor, 2005: xiii.). Yet it is the ‘mechanical’ mind that reigns supreme today. Thus, the world is now seen as a machine, deemed fully comprehensible by Western humanistic, rationalistic thought, and is regarded as without value or sensibility. This in turn renders it totally available for human control, domination and exploitation for profit. Here resides the great divorce, for we are no longer bonded to Mother Earth and have therefore lost some of our organic senses. The psychological consequence of this break of the human–Mother Earth bond – a fatal divorce – is what I believe has precipitated us into the Anthropocene era.

Anthropologist–philosopher Mircea Eliade says that ‘the *completely* profane world, the wholly desacralised cosmos, is a recent discovery in the history of the human spirit’ (Eliade, 1961: 13). I believe he is right. This makes it hard for those of our generation imbued with a post-Enlightenment, reductionist, mechanistic-minded, modern humanism – and increasingly moored in a ‘rational’ and profane or desacralised world – to comprehend, let alone identify, with those of other times and other minds who were – and still are – immersed in a sacred world.² Such an ‘organic’ mind varied from culture to culture over time, but generally, in most eras, things such as place, space and time could assume sacred significance, as did natural, organic, geological and other elements. Even basic physiological acts such as eating, sex and so on were never just simply ‘physiological’, as Eliade says, they were or could become ‘a sacrament...a communion with the sacred’ (Eliade, 1961: 14).

As a student of this ancient organic mind, Mircea Eliade captured the almost intangible elements of the pre-mechanistic mind. The existential situation of people of such a mindset, says Eliade, is where ‘life has an additional dimension; it is not merely human, it is at the same time cosmic, since

¹ McCosker in RCS promotional flyer for Patrick MacManaway’s course, 2014.

² Eliade used the word sacred to mean: beyond ‘natural’ realities; something that goes beyond the natural experience of humans; the opposite of the profane; the manifestation of something of a wholly different order, a reality that doesn’t belong to our world, and can be in objects that are an integral part of our natural ‘profane’ world (Eliade, 1961: 10–11).

it has a trans-human structure...not strictly confined to man's mode of being...' This is because, he says, 'in living, religious [i.e. spiritual] man is never alone, part of the world lives in him' as 'cosmic symbolism adds a new value to an object or action, without affecting their peculiar and immediate values'. Eliade concludes that

Openness to the world enables religious [spiritual] man to know himself in the world." This means that "the whole of life is capable of being sanctified ...thus life is lived on a two-fold plane; it takes its course as human existence and, at the same time, shares in a trans-human life, that of the cosmos or the gods.

Eliade (1961: 166–167)

Such an 'organic' mindset allowed people the capacity to listen to, feel strongly and empathically with, and identify the organic world around them, in all its manifestations. A crucial aspect of this was a sensitivity to 'subtle energies' (such as those emanating from flowing water or cosmic energy flows). In time, and in certain cultures, a very sophisticated series of practices – if you like a 'science' – was built up around detecting, concentrating and using these energies to good effect for human health, harmonious living and agricultural performance.

Is it any wonder, therefore, that while an extraordinary regenerative agriculture revolution unfolds across our nation and other countries and landscapes, such farmers and others who empathically reconnect to Mother Earth are now discovering, developing or unexpectedly encountering elements of the old organic mind? For this is what is surely occurring. I see it as part of the transformative shift to a third mind for this new era of human existence on Earth: the *Emergent Mind*. This mind combines elements of the old 'organic' (through an indivisible 'oneness' with the Earth and nature and a capacity to rediscover intuition, Earth-empathy and a mental freedom to be open to other outside and non-rational or spiritual influences) with the best of the modern 'mechanical' mind (such as research about our bio-geochemical world, ecological systems, and complex adaptive systems thinking and so on). The result is this new mind, the 'emergent', equipped with the best of the old and the new. It is thus capable of forging a new agriculture and a new urban–rural connection that regenerates, and doesn't destroy, the Earth.

In order to understand the potential of a new regeneration of agriculture, we need to at least open up and discuss some of the things that are emerging as modern regenerative farmers take steps that end up – intentionally or otherwise – connecting them to some long-lost or neglected ancient pathway.

HARNESSING SUBTLE ENERGY THROUGH GEOMANCY

In tracing the emergence of a regenerative agriculture and of the innovative farmers behind it, we see that the management approaches leading to ecological regeneration stem from a regeneration of degraded landscape functions. Such regeneration hinges on solar energy and the solar cycle and then flows into the soil-mineral, water and other cycles, and into that of dynamic ecosystem communities. Intersecting with, and indivisible from, these landscape functions is the human-social landscape element. But without solar energy, we humans would be immediately exterminated.

Nevertheless, there is another and complementary energy source that impacts the Earth and its organisms (including humans). Forgotten, over-looked or even repressed, this consists of the wider cosmic energy forces from further out in the solar system (including planetary and lunar influences) and beyond – from the broader galaxy.³ There are also energies generated from within the Earth, from processes relating to deep geological fault-lines to radioactivity. Though seemingly not as powerful nor obvious as solar energy, ancient people with an organic mindset recognised these additional energies and used them to maintain harmony with Earth's living patterns, for living and healing in general, particularly for agriculture, as well as for spiritual purposes.

³ Much academic literature exists on cosmic rays and cosmic energies. See, for example, Dorman and Dorman, 2014.

Such energies go under the general description of ‘subtle energies’. It is no accident that modern regenerative farmers – in moving to a post-mechanical mindset – have discovered and recognised these and increasingly begun to use them to regenerative effect.

Subtle energies come in different forms and expressions, but quite simply, they are those energies present within and around us, which are beyond perceiving by our standard five senses. Moreover, conventional instrumentation can’t measure these energy frequencies. However, importantly, they affect living systems at the cellular level, and this is dependent upon both the perception of the quality and character of the energy, and the sensitivity of living systems to the energy. In the modern scientific era, Albert Einstein first mooted some of these energies, which later led to the field of quantum physics: things too small to be seen but which are a basic part of our world, matter and the universe.

Our restricted modern worldview recognises just five main descriptions of subtle energies in our environment: electricity, magnetism, gravity, and weak and strong nuclear forces. Yet our living systems themselves are bio-electromagnetic (Malmivuo and Plonsey, 1995), and we can only see, hear and touch a narrow range of these frequencies. There is a good reason for our restricted perceptions: if we were able to perceive, feel, hear, etcetera everything out there, then we would be in a constant state of sensory overload.

The detection of magnetic energy lines and energy flows, patterns, auras or force fields is a skill that can be developed – as I found out in that park in Dubbo. In everyday language, such detection is called divining or dowsing, and in the case of treating animals or humans has various names, such as radionics and kinesiography. Ancient people with an organic mindset were incredibly sophisticated at detecting and experiencing subtle earth energies. That is why they attributed them to the activity of the Earth Spirit or nature spirits. The purpose of applying these skills was to connect themselves to special places, times, cosmic positions and to purpose. The age-old science of doing this is called ‘geomancy’.⁴

Because their minds were totally trusting of their indivisibility with Mother Earth and her cosmic forces, such peoples were able to enter more directly into the spiritual realm: much of which is a realm of energy and mind and includes the physical power of human thought. This, as a researcher in the field, Nigel Pennick, says, led to people of an organic mindset revering ‘stream and fountain, rock and grove, not as gods in themselves...but as inherent sources of the spirits of the earth such as the Yarthlings and Hyter Sprites, still talked of in East Anglian folklore’ (Pennick 1979: 7–9).

Places of geographical interest were aligned on identified or dowsed energy lines called *leylines*. Sacred monuments and megalithic arrangements were erected on these lines at key nodal points, which were deemed to resonate with special psychic energy.

In short, there was an ancient geomantic and geophysical knowledge which underpinned most of the major religions of the world and which was largely lost as the organic mindset morphed into the rationalist, sceptical mechanical mind. This knowledge is now being put to constructive applied use by human healers, geomantic earth healers and regenerative farmers who in many other respects have moved into the post-mechanical or emergent mindset.

THE ART OF DOWSING

As I wandered around the city park in Dubbo, refining my dowsing skills, I reflected on how, over my life, I had met various water diviners or dowsers. A now deceased friend of the family, not far from our home, had an English aunt who used to come out to walk his farm and, through water divining, would accurately map his underground streams. During World War II, this lady was called in by the Ministry of Defence to divine the whereabouts of German U-boats. She used a pendulum over a map to do so.⁵

⁴ ‘Geomancy: or “earth divination”, is the subtle relation between humans and their natural surroundings. It is the science of putting human habitats and activities into harmony with the visible and invisible world around us’ (Pennick, 1980: 7).

⁵ In the UK in 2017, 10 out of the 12 main private water companies were using dowsing to locate water (Le Page, 2017).

But now I know people of all sorts and persuasions who, in an unencumbered way, have developed or discovered dowsing skills. Key to all these examples is people putting their ‘mind’ to the task. This word ‘mind’ is the secret because, as I soon discovered at Dubbo, successful dowsing is all about a concentrated focus of the human mind – or the use of what is termed mental ‘intent’.

Mental thought is a basic physiological manifestation – that is, a concentrated stream, focussing and use of physical energy. As such, this different form of ‘energy’ focus may have physical and chemical effects across distance and even time. In spiritual matters, this is a component of prayer. The physical and/or chemical manifestation of the directed focus of human intention has also been written about as ‘psycho-energetics’ (Krippner, 1979), a term developed by Czech physicist František Kahuda (1911–1987).⁶ Similar concepts have also been expounded by Lipton (2011). One example is the remarkable quantified and photographed effects of Japanese scientist Dr. Masaru Emoto who, through powerful concentrated positive thought and even music, has shown that it is possible to change the shape of water molecules and crystalline structures (Radin et al., 2006).

From a farmer’s perspective, a healthy water cycle is a key landscape function, and we all know water is the lifeblood of the living (especially in my dry continent of Australia). People like Patrick MacManaway hold water in the highest esteem. ‘It is the consciousness of the earth, planet and soils’, he said in his course. ‘It is the matrix that holds the quality of consciousness, and beautiful, patterned, bright water crystals are vital for human and landscape health’. Water can be divined not just because its movement creates an electromagnetic force but also because even deep water underground has an energetic effect on the surface. Moreover, other subtle energies in or below our landscapes can also be divined.

So at Dubbo, I learnt to detect various underground streams by focussing clearly on finding water. When found, my divining rods suddenly and vigorously swung inwards and crossed on my chest. My divining also included finding a major health energy point where streams intersected. It is no accident that such nodes were ancient sacred sites or the location of temples and then churches. But once found, and again through mental focus and use of a binary ‘yes/no’ series of questions, I could then determine the approximate depth of the water below the surface. Experienced diviners/dowsers and experts in subtle energy can do this with considerable accuracy.

Patrick MacManaway makes an important distinction between ‘dowsing’ and other ‘divinatory approaches’. Dowsing (or the art of divining for something that is desired), as I learnt with wire rods, is straightforward. You clear your mind and focus thought ‘intent’ and use a simple and specific binary approach of ‘yes’ or ‘no’. Such dowsing is not new. Moses divined water in the desert with a rod over 3,500 years ago, and indeed evidence of dowsing dates back to at least 8,000 years (Webster, 2008).

All sorts of dowsing tools can be used, but predominantly bent wire rods or wooden forked sticks and wands. A few people dowse with their hands, and some use a simple pendulum: usually a small piece of pottery, wood, plastic, metal or a piece of jewellery. One calibrates the tool by determining the response to ‘yes’ or ‘no’ via the way the pendulum moves, and then proceeds to ask a series of binary questions. Such questions, as I found among leading regenerative farmers, can apply to any field of activity.

In that Dubbo park, I then switched from water and focussed on detecting positive energy flows in the landscape and I was also able to find these, and in different places to the underground water streams. Again, it was because I had focussed my mental ‘intent’. However, there are also negative energies that can cause illnesses, sleeplessness and such. Geopathic stress is caused by detrimental energy zones that can arise from underground sources. These can be due to geological faults and fractures, or from water flowing through such fault-line cracks in the underlying rock

⁶ The term psycho-energetics also features in a draft proposal published by the CIA to investigate psycho-energetic phenomena, which defines this term as ‘remote viewing/extra sensory perception’ (ESP), or psychokinesis. Draft Proposal: DoD Psychoenergetics Program. Released 2008/08/08. <https://www.cia.gov/library/readingroom/docs/CIA-RDP96-00789R002100230001-3.pdf>.

strata. This field has been scientifically studied since the 1920s, particularly in Germany, under the rubric of geo-biology, and more recently has been researched in various other locations (see, e.g., Dharmadhikari et al., 2010; Freshwater, 1997; Hacker et al., 2005; Klimentov et al., 2015; Saunders, 2003; Wojtkun, 2017). Part of Patrick MacManaway's work is to diagnose such 'geopathic stress' and to heal or deflect the negative and pathological flows, through earth acupuncture or other mechanisms.

The ancient tradition of using earth acupuncture to address such negative subtle energies goes back to Neolithic and early Egyptian and Greek times (Comerford, 2012; Keen, 2018). MacManaway uses copper rods to deflect or divert the negative energies, which he finds resolves problematic situations for humans, animals and agricultural crops. That is why Terry McCosker calls this use of subtle energies 'the next big "freebie" in agriculture'. According to them, farms that have employed these methods have seen improvements such as increased crop production, conversion of standard bulk wheat grades to higher 'prime-hard' Australian Standard Wheat (ASW) grades, reduced pest and disease incidence in crops and animals, increased germination levels, more uniform growth, increased pollination levels, improved quality of produce (such as in nutrient levels and consequently taste), in energy or plant sugars (as measured by Brix levels), and of course underlying these changes, improvements in soil health and water quality.

FIELD TOWERS AND BROADCASTERS

The other device that is increasingly used by regenerative farmers is an adaptation of another ancient tradition. During World War II, biophysics scientist Dr Philip Callahan⁷ found himself stationed in Ireland as a radio technician, where he came across round towers dating back to the ninth century (of which there is a network of ~50). After studying these in combination with his specialist knowledge of insect sensilla (receptors which gather information about the environment), Callahan postulated that they 'were constructed at ancient Christian monasteries where the Celtic monks practiced a form of eco-agriculture dependent upon crop and pastoral animal rotation' (Callahan, 1984: 26).

Callahan had described and measured the two magnetic forces of paramagnetism and diamagnetism, and he saw that monks could have used these towers – that were constructed of paramagnetic stone – to focus, collect and concentrate cosmic and earth paramagnetic energies, which then radiated (antennae-like) from the tower base to 'dope' their cropping soils and fields with a subtle energy that increased the paramagnetic properties of the surrounding soil and fields. This, he concluded, stimulated growth, health and well-being in plants, animals and thus humans (Callahan, 1995).⁸ Callahan went on to call these ancient monks 'the forefathers of good, modern, biological farming'. To recreate on a small scale the equivalent of the monk's giant magnetic antennae used for concentrating paramagnetic energy, Callahan's work inspired regenerative farmers to build smaller versions of these towers that are now being used around the world to generate good 'growth forces'.

As I drove around Australia, visiting regenerative farmers who have made the mind-shift to a post-mechanical mindset, I encountered a wide variety of these 'power towers', the first of which were constructed in the late 1980s. Most of these farmers would, a few years previously, have ridiculed such 'way-out', 'new-ageist' devices which they would most likely associate with some pot-smoking group of hippies. Today, one can see a plethora of tower designs, ranging from sculpture-like layered terracotta pipes, to PVC pipes of varying diameters and heights. When properly dowsed and sited, one can see visible, wave-like energy radiating from the top of the pipes – similar to the waves of energy that reflect off hot surfaces in summer (Moore, 2001: 166).

⁷ Dr Philip Callahan (1924–2017), entomologist, ornithologist, explorer, photographer and philosopher, whose research involved the utilisation of non-linear far infrared radiation by biological systems and its applications to insect control and medicine. His work in biophysics focussed on insect molecular bioelectronics.

⁸ There is little research so far on the relationship between paramagnetic properties and horticulture or agriculture (though, see Teixeira da Silva and Dobránszki, 2016), although rock dust is used as a soil amendment (Anon, 2012).

Farm-emitters or broadcasters are a more sophisticated version of power towers. They are sited and built on the same principles, but with the added purpose of transmitting, for example, biodynamic preparations and other mixtures or ingredients, sometimes over hundreds, even thousands of acres. Such towers involve a strong degree of mental ‘intent’ or concentrated positive mental energy, so their users usually place a map of the desired area of influence and even a written statement of intent in the tower along with the biodynamic preps or other substances.

Interestingly, through the use of mental ‘intent’, many dowsers can map-dowse with a pendulum. Time and again, I have seen cases where the location of towers, over the confluence of underground streams or ley lines, was first marked on a map in the homestead kitchen, or even hundreds of kilometres away in an office. When the physical dowsing was done *in situ*, the map-dowsed locations were accurate to within metres.

As Dr Phillip Callahan summarised the issue: because the majority of American (and Australian) farmers ‘no longer farm according to the laws of nature (eco-agriculture), but rather according to the *quick fix* – whereby we have become *drug the soil* addicts’ (Callahan, 1984: 117). But, ‘no amount of nitrogen, phosphorous and potassium can replace the rock-generated paramagnetic force that is eroded from our soils by the sheer stupidity of our modern agricultural practices’ (ibid). Conversely, if we work with nature, ‘then insects and disease problems will take care of themselves. Healthy plants, properly nourished, will fight off attacks from outside, the same way healthy people do’ (ibid).

INDIGENOUS TOTEMS AND NATURE SPIRITS

On my drive back from Dubbo Park, my mind was so full of ideas and information that the trip seemed like 5 minutes. Everything ‘old’ seemed ‘new’ again, I reflected and then remembered another incident when I was sitting around a campfire with local Aboriginal Ngarigo Elder, Rod Mason. We were near my home, up on a thickly timbered hill with giant granite boulders, where there had once been a major Aboriginal camp. In the course of a long conversation, in which I felt I was back in kindergarten, Rod (who is a highly respected man) told me that in his early training, he was taught how to use and integrate both brain hemispheres.

I wondered then whether this physiological development had been part of the cognitive-symbolic evolutionary step that had differentiated us from all other creatures, yet had been somewhat lost since the Age of Enlightenment.

Elders of the Wolgal-Bemmerangal clan of our local Aboriginal Ngarigo people are ‘water people’: rainmakers. According to Rod Mason, the spirits of the Wolgal-Bemmerangal return first to the water and not the sky, as is the case with members of other clans. As a consequence, Rod’s people have a particular responsibility for water, as well as for animals and for their management.

The central grassland and woodland area of the Monaro where I live comprises a broad tableland – the ‘big grass country’ or *Narrawallee*. Our *Narrawallee* country (today recognised as a rich, highly mineralised and paramagnetic country) was also called the ‘healing grounds’ by the Ngarigo people. In springtime, they would dally there on their way to the ceremonial country in the mountains and the Bogong moth feasts and once again on their return home in the autumn.

Rod Mason told me that there are many spirits alive across our big grass and granite boulder country. These can be ancestors’ spirits or nature spirits. The Ngarigo believe that the extraordinarily varied and beautiful boulders on our land are Elders who have passed on. They keep watch over the land and must be respected: the bigger the boulder, the more powerful the spirit. In every landscape, there is one very large and special rock – the *Gurrubung*: the caretaker rock. This contains a powerful spirit watching over the land, and people often go to sit at its base to seek comfort and imbibe spiritual benefits.

A kilometre from our house, and its sacred kurrajong tree, we have our own *Gurrubung*: two conjoined giant granite rocks we call ‘bull rock’, because (intriguingly, in retrospect) a bull died there decades ago. Its bones are still there and both our children and grandchildren have played

with them. These two rocks are 80 m long and 15 m high and have been weathered over hundreds of millions of years. Partly submerged in the soil, they curve like a pair of giant blue whales breaching, replete with deep eye-sockets and blowholes. It is perhaps no coincidence that a pair of regal wedge-tail eagles nest in a large ribbon-gum tree overlooking this *Gurrubung*.

There are other spirits out in the grasslands: nature spirits such as the *Mirrakarabalee*, the ancient bird people. Children around campfires are told of these bird people, with their long, curved beaks and strange legs, who dwell in *Narrawallee* ready to pounce on and steal any child who wanders off alone.

Central to this story is that most Australian indigenous people (who are animists) have evolved a worldview called ‘totemism’, in which they form what seems to ‘Westerners’ to be mystical associations with plants, animals, natural features or phenomena, and even created objects. This runs parallel with uni-lineally related human groups (such as lineages, clans and tribes). A person’s totem can thus determine their name or group and can involve totemistic symbols and emblems, taboos and prohibitions applied to their totem animal, plant and such. This connects them with a large number of animals and natural objects. Again, living in the spiritual world is the basis of their animistic existence and their close association with, and indivisibility from, nature.

The depth and complexity of the Australian Aboriginal worldview and its longevity in sustaining and managing Australia’s varied ecosystems are due to evolved, interconnected and diverse features such as The Dreaming, The Law or *Tjukurpa*, Dreaming Tracks, Songlines, and their associated kinship arrangements that are linked to totems. All these are enmeshed in reinforcing Aboriginal myth, story, song, dance and art.

This Aboriginal knowledge and its associated beliefs organised the management and nurturance of ‘country’. In a brilliant speech at the National Library in 2013, historian and scholar Bill Gammage pointed out that the knowledge that guided Australian Aboriginals’ sustainable and regenerative management of ‘country’ was gained both physically and mentally over millennia, but also was a fusion with the spiritual in the land – with the religious. He said that the extraordinary indigenous knowledge and understanding of country – this ‘mighty intellectual achievement...a fusion of ecology and religions’ (Gammage, 2013: 2) – was because the Dreaming

Is grounded on ecological realities, whatever its social applications. It taught why the world must be maintained; the land taught how. One made land care compulsory, the other made it rewarding. One was spiritual and universal, the other practical and local. In their country, people lived the World of the Dreaming, thronged with plants, animals and elements, each in their appointed localities. Not only obvious features which Europeans named, but every pebble and ripple disclosed both the ecological logic of its existence and the Dreaming’s presence.

Gammage (2013)

‘Dreaming site and ecological niche alike proved the need and reward in caring for country’ continued Gammage. He further explained that

Totems expressed this. In English ‘totem’ can mean just a badge, for Aboriginals it is a life force stemming from and part of a creator ancestor – the soul a person shares with that ancestor’s plant or animal and its places and ceremonies. An emu man does not have emu as a mere badge: he *is* emu, of the same soul and the same flesh. He is of its totem, not the reverse, and he must care for emu and its habitat, and they must care for him. A man “born along the track of the wallaby” might say, when seeing a wallaby, “that is me, that wallaby, that is me”, or “that is my father”.

Quote from a 1984 manuscript “Nintirringu” in Bradley (2001)⁹

We modern Westerners may scoff at the idea of nature spirits and people’s ability to communicate with and, even, encounter them. We may even dismiss indigenous people as primitive, superstitious

⁹ M de Graaf, ‘Nintirringu’, ms 1984; John Bradley 11 July 2001, cited by Gammage, 2013.

or over-imaginative, but to them, the spirit world is real. The key point is that indigenous people have not lost connection to Mother Earth and Nature. They are truly organic in as much as they see themselves as a small, indivisible part of her. This leaves them open to experiencing and recognising natural energies, features and entities that the modern Western mind has become totally blind to.

In some respects, nature spirits are a manifestation of subtle energies in our landscape that we, modern, mechanically minded humans have lost the art of detecting. So it didn't come as a surprise to me when Patrick MacManaway, on that subtle energy course in Dubbo, quite naturally began to discuss the issue of nature spirits. This came about when he began to explain the various forms and uses of subtle energy.

According to Patrick, not only does this nature spirit world exist, but it is different in different lands and landscapes. Fairy tales are instructive on how to treat nature spirits; in Scotland, the Fairy Queen Sidhe, who lives in a sacred mountain, is the boss of nature. People maintaining the surviving Celtic worldview still see nature sprites and faeries, as real and active, and elsewhere in Europe, there are elves, gnomes, trolls, wights, pixies, gremlins, gronkydoodles and such that live in and around rocks, forests, streams, glades and other places. Today, in Norway, for example, there are still troll-catchers and stories abound of trolls' visible presence. Ancient people respected these nature spirits and worked with, or placated, them.

However, Australia is different to Europe and its diverse cultures. After 60,000-plus years of Australian nature – and spirit – empathic indigenous land management and living, it was inevitable that the establishment of the first incomers' settlement in 1788 would lead to a violent clash of cultures or hemispheres. A modern Western approach characterised by being rational, cruel, and exploitative and destructive of the land was imposed virtually overnight. As a result, the ancient human custodians of the land and their connection to a nature spirit reality suffered displacement and widespread destruction. In the process, a sacred human–earth bond was broken and displaced by a destructive, dominating, agriculture which the land had never seen before.

Patrick taught us that the connection to a nature spirit reality needs to be rebuilt and that the elemental spirits are still available. He explained, 'a landscape that doesn't yet recognise agriculture cannot help it'. We can learn from ancient medieval farmers in the UK and Europe who once communicated with nature spirits and the Earth, once showered them in blessings and, in turn, received their support. The clear implication is that, first of all, we need to work empathically with the landscape to regenerate it by harmoniously and lovingly using its functions. Then, we can work with the various nature spirits to free up the different earth, soil and other natural energies and elemental associated spirits.

On the long drive home, I had much time to ponder over our three packed and mind-bending days of lectures, discussion, dowsing and other energetic practices and found myself recalling a line from Fritjof Capra in *The Web of Life*: 'Ultimately, deep ecological awareness is spiritual or religious awareness' (Capra, 1997: 7)

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28 Experiences with the Metaphysics of Nature

Michael J. Roads

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INTRODUCTION

I grew up in a farming family in East Anglia, UK, working with my father until his untimely death in the early 1960s. With my wife and I in our mid-twenties, and with two young children, we then emigrated to Tasmania, the island state of Australia. It was there that I experienced many of the deeper insights of Nature that I share with you now.

I will begin by explaining about energy. My early years of working with the metaphysics of Nature were by trial and error, interlaced with a fair degree of common sense. What I have learned is that everything is energy. All space and matter is energy and all energy is information. Another name for this energy is consciousness. So, here, we have a vast reservoir of information that is not physically visible or available and is thus ignored, despite being metaphysically obtainable.

Over my many years of experience and study, I have learnt that the metaphysical precedes the physical. That we are unaware of this makes no difference to reality. However, if you accept this higher reality and work with it, life as a farmer becomes very different, very interesting. You accept what you can physically see, but you acknowledge that if you learn to work with the unseen, then the results will be far greater than before. It follows that, just as Nature is far more than we can see, so also are you. I have written several books on this topic of the metaphysical world of Nature and have lectured internationally on this subject. My books, *Talking with Nature* (1985) and *Journey into Nature* (1990), both best-sellers, are still in publication under a single cover. In addition, *Conscious Gardening* (2008) has been well received, and I have also explored the astral worlds of Nature in my book, *Stepping between Realities*, published in 2014. My latest book is *Entering the Secret World of Nature*.

SURVIVING AND LEARNING IN TASMANIA

When I emigrated at aged 26 with my late wife and 2 young children, I went from an arable farm in Cambridgeshire, England, to a beef farm in Tasmania, the island state of Australia. This was in November 1963. There is of course a huge difference between these two types of farming, in two very different countries with very different climates, but we were young and full of confidence, and the scale of this challenge was easy to dismiss at the start. This was our choice. What I did not choose was a plague of armyworm caterpillars that, like a swarm of locusts, crawled across my 354 acres on the foothills of Mt Arthur and devastated my pasture. My cows drank from water-holes that were so full of dead caterpillars that the living ones could crawl over the surface. Within

2 weeks, I was walking around my farm shooting my very sick, poisoned and starving herd of beef cattle. Quite a shocking and very sobering introduction to farming in Tasmania!

For economic survival, I became a reluctant dairy farmer. I will skip the many trials and tribulations I endured during the worst decade of farming of the twentieth century in Tasmania. But it was under this constant pressure that my new relationship with Nature and agriculture was born ... and grew.

What gradually hit me so powerfully was how poorly equipped and uneducated I was to change both my country and my farming practice in one move. And yet, it was this sheer lack of knowledge that pushed me in a very different direction. Realising how much I did not know, I turned towards my hitherto unexplored intuition. Intuition said that if I wanted to learn about pastures and cows, then I should ask them. Initially, I had trouble with this ... but I did it. I walked out into the middle of a 30-acre paddock and, sitting down, I did my best to attune with the land. I had little idea of what I was doing, so I focused on my farm, my cows and myself. In those distant days, I had no idea of a simple universal principle: *Where you focus energy flows, and connects, and creates.*

It took me a while to find a measure of inner quiet, but over a period of maybe a couple of hours or so, I suddenly became aware of having answers to my varied questions. This shook me. They seemed to come from nowhere, but the answers carried a fair degree of certainty. How was this possible? However, in good faith, I applied all that I had apparently learned to the problems I had ... and it all worked. All the deep insights proved to be valid and invaluable. And so a whole new education began.

My cows became my main teachers, beginning with one particular young cow. One of my dairy heifers had become paralysed as the result of birthing her first, rather overlarge calf. In the early 1970s, generally, if a cow was 'down' for more than 2 or 3 days, she would die. However, I noticed that no crows hung around her. My observations indicated that if the local crows attended a cow, she would almost always die, no matter how you treated her. So morning and night, every day for 10 days, I fed and hand-milked her, rolling her from one side to the other. On the tenth day, she struggled to get to her feet and, with my help, she managed. During this struggle for her life, we bonded, and she became my 'cow teacher'.

'Awkward' – as I named her because she now had an awkward walking gait – and I spent many odd hours as companions while she grazed. We would walk together, and when she lay down, I would sit leaning against her side. It was she who taught me most about the varying energies of the land. There were areas in a 50-acre paddock where my 100 milking cows would never lie down. Never. Based on no reasons that were visible, there were other areas they would congregate in. When I lay down where cows would not, I sensed a feeling of discord, out of harmony with the land. Not good or bad, or right or wrong, just a strange unsettling feeling of disquiet. When I lay – carefully – where the cows congregated, I felt fully at ease, in harmony with the land. Conclusion: never build a house where the cows will not lie down!

I was not able to talk with my farming friends about learning the varying energies of the land from a cow. I was already 'the Mad Englishman on the hill!' Nevertheless, when I sat with Awkward while she chewed her cud, I would go into a dreamy, half-meditative state of deeper consciousness and emerge into a very different world of energy. In this world, I was told that the paralysis of Awkward was not an accident. It was a test to see how I would respond to her situation.

I confess, many times during the 10 days of attending her I wondered why I was doing this. Every farmer knew that 2 or 3 days was the limit. Despite this, I persisted and I was rather proud of getting the cow back onto her feet. Now, I was learning that farming was all about the qualities I expressed as a farmer and the patience and compassion I had towards both the land and my livestock.

Under the tuition of this metaphysical aspect of Awkward, I learned more about cows than any book ever written could teach me. Certainly, books could and did teach me about the physical anatomy of a cow, but just as humans are not mortal body/personalities, they are immortal souls, so also a cow is far more than the physical anatomy. I learned to interpret the body language of all my cows from an intuitive perspective. I learned to *know* what it is to be a cow. I learned how the

herd is a group soul, with each individual cow an aspect of that. I learned that each soul as a part also held the blueprint of the whole ... and that separation is an illusion created by our intellectual beliefs. We do not think holistically.

Awkward showed me the energies of the land. To most farmers, soil is just soil, land is just land, good, bad, or indifferent. This is not so. Just as with all life, soil is living. By this, I do not mean only the micro- and macro-life teeming within the soil, I also include the mineral aspects of the soil as particulates. Everything is energy. If I viewed the soil as dead or half-dead, as a substrate that I had to somehow grow living pasture upon, then I would create my own opposition to this growth. Not only this, but I would unwittingly create the conditions that would support my belief that the soil is dead rather than living. Conditions such as drought, or excessive rain, or subsoil hardpans may all be collectively created by unwitting farmers. As I said earlier, it is all about energy.

Farming is more about the wielding of consciousness than almost anything else. We have not even begun to farm the land, we only think we do. Most farmers are like people attempting to follow a path with their eyes closed. This does not make them bad or wrong, but we do need to awaken to a new and vital era of more enlightened agriculture. I concede, however, that it is a huge leap forward. Bio- or organic farming was and is a wonderful first step, but this next quantum step is long overdue.

As a dairy farmer, I had a serious problem. I feel a touch of embarrassment to admit that even though I truly liked my cows ... I hated milking. It took me only 8 weeks to learn how much I detested the regular, monotonous work of milking twice a day, every day. Fortunately, I had no idea that I would spend the next 8 years milking them, but in hindsight, I realise that this was the perfect way to teach a person completely lacking in self-discipline, and this was something that I greatly needed in my life. My hate of milking meant that I was mostly bad-tempered in the milking shed. The cows picked up on my energy and liberally doused the whole milking shed in hot, green, liquid poo! They kicked and were continually agitated, making the process of milking far more laborious than it needed to be. As far as I was concerned, however, it was all their fault, not mine!

Only a few weeks after my association with Awkward started to deepen and develop, an incident happened in the milking shed that began a major change my life.

I brought the cows in as usual with my trained cattle dogs, and in a particularly bad mood, I commenced milking. One of my skittish, long-legged Friesians came towards the milking stall, and just as she entered, she kicked out at me. She caught me a heavy whack on the quad muscle of my thigh, the leg going instantly numb. As I struggled not to fall over, my rage boiled and I did something I had never done before. Picking up the leg-chain, I swung it in an arc around my head, before bringing it down towards her ribs as hard as I could.

It all went horribly wrong ... or perhaps I should say, it all went perfectly right!

As the leg-chain approached her ribs, she danced out the way and again kicked out. The leg-chain caught on her ankle, and she kicked again. Now, in a blur of speed, the leg-chain did a double arc and was hurtling towards my head. I automatically put up my arm to stop it. The next thing I knew was a terrible, agonising pain as the leg-chain wrapped around my arm. The pain was so bad I did not know whether to vomit or faint, but I managed to do neither. However, in that moment of intense pain, powerful words were forcibly and indelibly imprinted into my consciousness: 'I did this to myself'.

In that moment of agony, I *knew* that I was the cause of all the chaos and turmoil in the dairy. I *knew* that I was the author of my pain ... and in that moment, my consciousness changed. In what way exactly, I had no idea, but I *knew* I was changed. It was 4 days before I could milk again. My arm was black-blue and purple. It was 4 months before the bruise finally left the bone in my forearm and I was without pain. But the results were remarkable. I had changed.

Within myself, I *knew* I had changed. When I was able to recommence milking, every cow was quiet, no agitation, no chaos, no hot green poo all over the place. My frustration at milking, my anger, had vanished. It gradually dawned on me that every one of my hundred milking cows *knew* that I had changed. From then onwards, the mayhem of the previous 2 years in the milking shed ended because my anger had disappeared. The cows were aware of my changed state of

consciousness. Our shared consciousnesses, although very different as man and cows, were as One. It took me a while to embrace this.

However, among all my friends and even my family, only my wife knew that I had changed – not a single other person I knew. I mentioned the change to a couple of very close friends, and they even laughed at me. It was very sobering to know that humans with whom I shared consciousness were, in fact, far less conscious of this change than my cows. Eventually, I was to learn that humanity lives largely subconsciously, while all animals live fully in a conscious state. This is a huge subject that I will not pursue in these pages.

I later asked the metaphysical aspect of Awkward if she had anything to do with what had happened. What she told me was a shock. 'It is all about timing. Eggs hatch at the perfect time, and so do buds unfold. The bud of your potential needed a great shock to bring you to a higher level of consciousness'. I asked why. 'Because like so many humans you are into trauma and drama as a stimulant for inner growth. Pain is the usual supplier for this'. (I should add that I no longer use such techniques for inner growth!)

Most people are unaware of the energies of life. As I developed my ability to go ever deeper into the metaphysical world, so I learned that *Chaos – the engine that drives*, *Order – the stability of structure*, and *Balance – the place of highest potential*, are the energies that govern all life. For me, Chaos is a range of about a thousand shades of red. Each shade has a different energetic expression, ranging from a red of extraordinary grace to a red of extreme rage and on to pure wordlessness. I struggle to explain this as it is purely metaphysical, and for this, we have no language. Order, for me, is in the range of the colour black and also has a vast diversity of meanings. Balance is a flickering pure white, which has the greatest energy of all. I have named these energies Chaos, Order and Balance with capitals simply because these words are the best fit. I need to say that I experience these all on an emotional, not intellectual, level. They suggest to me that we are on the cusp of developing an emotional language that far exceeds our mental one, but this is all tied to our state of consciousness. Imagine you have a thick rope. You are twisting it to the right, Chaos, and your friend is twisting it to the left, Order. This twisting in opposite directions creates torsion in the rope. Too much either way and the torsion is out of balance. However, if the twisting is equalised, the torsion moves into Balance. In a way, Chaos and Order are in direct opposition with each other, yet from this comes Balance. As an example, a wildfire is pure Chaos with no Order, while a rock is pure Order with no Chaos. In a sick person, either Chaos or Order is dominant, depending on their condition. In a vital, healthy person, they are in Balance.

As you follow this, you may realise that this principle applies to every living organism, from the tiniest micro to the largest macro forms of life. As an ex-dairy farmer, let me give an example. A human crowd is utter Chaos. Not so in animal herds. Every cow in the herd has the Chaos/Order dynamic within her. Generally, the more Chaos, the more dominant the cow. This creates the 'pecking' order. The cows are quietly grazing in the paddock. Each cow is *always* standing in perfect proximity to every other cow in the herd. My cattle dogs move in and hurry all the cows towards the milking shed. The dogs are enthusiastic and the cows are being rushed. All is now Chaos in the herd. They reach the holding yard with the swinging gate, and every cow is in the wrong position with regard to the others. To the degree that they can, they head-knock each other into the right pecking order, but this is hampered by the gate and the cows being steadily taken into the milking stalls.

With the milking finished, the cows congregate either outside the milking shed, or wherever the farmer takes them. They lay down long enough to find their own Chaos/Order/Balance equilibrium before eventually moving away to graze once more in the proper order of dominance. A wise farmer allows time for the cows to rebalance their energy. It is essential for the well-being of the herd.

After completing my 8-year apprenticeship with the cows in the dairy, I reached a turning point. All my milk had until then been separated and some sold as cream. Then, the butter factory said it would only take whole milk to process themselves. So it was either 'get in deeper, or get out'. An easy choice for me! I had been breeding my own beef herd with Hereford bulls over my Frisian

cows. My bucket-reared heifers were put to the bull in their second year, not the first, so they were beautiful large animals ... and I really loved them. This was also a turning point in my whole relationship with the land and cattle, it was when I truly realised that ... I loved them. It was a time when my connection with the cattle moved to a new level.

I will share an incident involving my developing beef herd. All my ex-dairy cows now ran with my beef cows in one large herd of about 140 cows. I would walk among them almost every day, talking to them, stroking their backs and consciously connecting with them. And I use the words *consciously* with deliberation. I was not thinking of other things, my whole focus and attention was on the cow herd, and on each cow as I touched her. As I did this, I noticed that one of my large tame heifers was not *energetically* right. She looked perfect, but her Chaos/Order energy was out of Balance. As I focused on her, my intuition told me that her calf was dead inside her and that she had peritonitis.

Talking to her all the time, I walked her out of the herd and down the steep roadway to the creek. The idea was to cross the creek bridge and up the roadway on the other side to the farm buildings, where I would keep her and phone for the vet. Unfortunately, this did not happen. When we reached the creek, she turned off the roadway and followed the creek. Despite my efforts, I could not stop her. When she reached a narrowing of the creek, she deliberately laid down, effectively damming the flow of the water so that it flowed around and over her. For half an hour, I tried everything to get her out of the freezing cold creek, but she would not budge. Finally, I put a halter on her, and with my Landrover, I dragged her onto the bank. Then leaving her haltered to the vehicle, I walked to my house to phone the vet.

Returning to her immediately, I found she had broken the rope and was back in exactly the same position. I sat down in tears. Cows have their eyes in the sides of their head, so are unable to fully see you. Yet she fully looked at me, an invitation in her eyes. She then swung her head along her back and immersed her head under the deeper water caused by her body. As I watched this through eyes blurred with my tears, I *knew*, I even *felt* the pain she was in. Her calf was dead and rotting, and she was suiciding. Every book I have ever read about such topics says that only humans suicide, never animals. I *knew and felt* that the icy water was numbing her pain and that she was inviting me to metaphysically join with her in this conscious and deliberate process. Sadly, all I could do was cry as I helplessly watch a heifer I loved drown herself.

Metaphysically, all linear time occupies the same moment. Years later when I had grown in consciousness, I visited that moment again, and this time, I accompanied her as she transitioned from a herd-soul on a physical plane to a far greater and more wondrous herd-soul on a higher plane of consciousness. That was when I learned how our *conscious* human love can raise the consciousness of all animals. Even the farmer using animals for milk or meat can, by conscious love for his or her livestock, raise their consciousness. I will go as far to say that this is what it is to be a true custodian of livestock or of the land. By our good use or misuse, we raise or lower their or its consciousness.

My own personal evolution of consciousness took me away from farming in a way that I did not expect. My relationship with my cattle had been a very close one. One wild and wet night, I had been walking the herd because I knew that this was the weather they preferred for calving, and the old deep instinct of rain washing away the birthing smells from predators was still with them. Every cow so far had calved with no problems, but I knew there was one more to check on. When I found her around 5 am, there was enough light for me to see she had licked away and eaten all the afterbirth except for one thick piece on the face of the calf, covering its mouth and nostrils. I cleaned it away, but he was dead. Because he was still warm, I positioned him so that I could push onto his lungs while giving him mouth-to-mouth resuscitation. Just as I was about to give up, he took a deep shuddering breath and was alive! In that moment, I felt an incredible elation, joy, victory, a soaring of my spirit ... which came crashing down as I realised that in 10 months I would be sending him to the slaughterhouse.

That moment finished my beef career. I knew that I could not do this to animal Beings that I loved. If this sounds stupid or emotional, so be it. For me to continue growing in consciousness required that I follow a different path in my physical life.

GOODBYE TASMANIA ... HELLO ORGANIC FARMING CONSULTANCY

We sold the farm, and for a year, we travelled with our four children in a caravan on a glorious adventure. Settling temporarily in the Bellingen Valley in NSW, I spent the next several years as an organic farming consultant. I named my business Soil Sense Associates. My practical approach was to have the farmer-clients' soil tested in a laboratory, and the results I would then reconfigure away from the chemical recommendations into organic fertiliser terms. To fertilise means 'to enrich', not to chemically stimulate; a true fertiliser fills the soil pantry, rather than emptying it.

My all-important metaphysical focus was to be conscious of the Spirit of the Land and to communicate with it. In this way, I had a double-barrelled approach, with one foot in the physical and the other in the metaphysical, which proved to be very effective. It all really took off when, in the early 1980s, I gave a public talk in the Darling Downs grain growing area of Queensland. Billed in the local newspaper as the 'Prophet of Natural Farming', the local farmers were shocked to find their meeting hall full with 90 or so people, instead of the regular 10–15 farmers. I was no longer a joke.

It so happened that the Darling Downs was an area of very complex soils. Magnesium levels in the soil were higher than the calcium, which caused conditions of concrete-hard soil as it dried out, and clinging mud when wet. Local farming techniques were compounding the problem, which worsened each year. In the talk, I expanded on their problem using terminology that they understood, and even managed to get across some of the metaphysics of the situation.

I won a small number of clients from my talk. A few days later, I was with one of these clients, walking across a fallow field. He was a good farmer, progressive and open to change. He was also very talkative. I had tested his soil, but now I wanted to communicate with the Spirit of the Land. For that, I needed silence and preferably to be alone. Just as I was wondering how I could achieve this, his wife appeared in the distance ahead of us and waved. 'I'm wanted on the phone. I'll be back in about an hour', he said as he walked off. No cell phones in those days!

I smiled, I could now make the connection while he chatted and sipped his coffee.

As I continued across the loose fallow soil, it very strongly came to me that the pH was changing almost with each of my footsteps. I stopped, puzzled, but all I got was a stronger affirmation of this. I had with me a very sophisticated pH meter, worth about \$400, not your local store \$10 type. I knew it was very reliable. My footsteps were very obvious in the loose dry soil, so I retraced my path taking samples from the soil in my footprints. Sceptical and rather disbelieving, I also took samples 5 metres away from my footprints, and at 10m away.

The results gave me a considerable shock. The overall soil in this field was pH 9.5, very alkaline. In my footsteps, it dropped to pH 8.3, an absolutely huge and almost impossible drop. At 5m out, it was pH 8.9 and at 10m pH 9.4. I rechecked this twice, it seemed unreal, but the results remained.

From this, I learned much. Today, I know that the farmer is the very matrix of the farm. What affects the farmer, male or female, affects all the land. There is no exception to this. You may not see, or realise this, but it will be there. The farmers' mood, their anger or inner peace, their depression or happiness, their thinking, their positive or negative energy, their stress, their greed or generosity and *their love of farming* affected the whole farm. The farmer who truly loves their land and their farming, whether it be horticulture, arable or livestock, is the farmer who is leading the way in consciousness. To these people come the insights and intuitive leaps that most of them have the courage to follow. If you are in the most menial of work, and love what you are doing, love who you are with, and love where you are in life ... then you are a giant in consciousness among humanity.

If you love your farm and the act of farming, you affect the whole because you are the whole. This includes the billions of micro and macro soil life, the livestock, the pastures, the crops, all of it. Just as you are the One, so you are the All. Love reveals this.

I can assure you that no matter how this may *not fit in* with the rather restrictive beliefs of our current agricultural science ... it remains true. It is also true for a real gardener. By 'real', I mean this does not necessarily apply to the landowner who lets or leases his or her house and garden, or farm and farmland; it applies to the gardener or farmer who is intimately involved with the land itself.

During my few years as an organic farming consultant, I became aware that if the farmer, or whole family, were constantly sick, the land and livestock struggled to be healthy. Always, the farmer and his or her family were the hinge-pin of the conditions of the soil and the livestock. I also noted that so many farmers battled with Nature on a daily basis. For many, farming was about battling the weeds, the insects and the weather, along with the various political issues over which they held great anger, but could do nothing to control, other than verbally vent their wrath. With this negative energy, their troubles grew and multiplied.

My decade on the foothills of Mt Arthur had taught me that the farm was my meeting place with Nature. I took this very seriously. I considered myself as the student, with the Spirit of the Land as my teacher. This served me very well. I agree that knowledge from other sources has a strong place in agriculture, but I strongly contend that it should not be considered infallible.

When we regard the farm as a complex of energies, with the most complex – the farmer – as the matrix of the energies, we would be wise to understand and integrate these many energies into a compatible amalgam. Agriculture is always going to be a matter of *forcing growth* if we are unable to comprehend that the 99% of life that we cannot see is very deeply involved within our methods of farming.

I will share one last aspect of the metaphysics of Nature. I had given a talk in a country town in Victoria, Australia, when I was approached by a farmer. He told me that he had 1,000 sheep and 5 sheepdogs. His problem was the dogs. If let loose, they wandered off the property, and/or would work the sheep, so they were fastened on running chains next to their kennels where they would bark incessantly, driving him and his family crazy. What would I suggest?

I made the usual suggestions, and he had tried them all to no avail. Then, I asked him if his dogs were educated. He replied that yes, they were trained sheepdogs. I asked again if they were educated. This time he asked me what I meant. I asked him if he had ever actually told the dogs what he wanted of them, what they could, and should not, do? He had never even thought of such things. ‘They’re just dogs’, he said.

Because he was obviously full of anxiety and turbulent thoughts, I told him first of all to wait until he was quiet and calm in his head. When he was internally quiet, he should let the dogs off the chains and allow them to first run off their energy. Then, calling them to him, he should walk slowly around the boundary of his farm. All the time he should be focused, *consciously* telling his dogs that this is their boundary and they do ‘not’ cross without his permission. Next, he should tell the dogs that he does ‘not’ want them to work the sheep without his permission. As he walks the boundary with no stray thoughts at all, he should tell them that in return for obeying these requirements, they would no longer be kept on chains. They would be free, so long as they followed his rules. This, I told him, is yours and their education.

I told him that he was the creator on his farm, and it was his choice to make. He huffed a bit and puffed a bit, but we parted on friendly terms. About 8 weeks later, I received a letter from him. No email in those days! He explained that he had thought I was crazy, but he had nothing to lose by giving it a try. To be fair to him, he said it took 4 weeks to quieten his mind, but he managed it. He did as I had told him with the dogs, and with great trepidation did not chain them during the day. Only at night. He was stunned that during those 4 weeks, the dogs had not once strayed or worked the sheep ... and they had stopped the endless barking. Needless to say, he was very grateful.

Under my prompting, he changed his relationship with the dogs to a greater and more accepting one. By doing this, he changed the behaviour of the dogs to a partnership with him, rather than in opposition to him. In other words, he moved their energy from Chaos to a Balance with both him and the farm.

CONCLUSION

Every farmer has choices. It is far too easy to follow the crowd. Nature speaks to us, we are one energy, one consciousness, something which is outside of conventional thinking. Humanity has

forgotten how to listen to the world of energy. If agriculture is to have a viable future where farmers return to being custodians of the land, then abusive modern conventional farming has to end. The chemical approach is similar to beating a tired horse with a stick. It may well get a result, but it will only be a short-term one, and that term is now ending: our agribusiness land is in the final stages of erosion and death!

Agribusiness has no heart, no soul, no future. This world is right now going through major shifts, and the metaphysics of farming is in harmony with this change. It is timely now for a more enlightened approach to farming our precious land.

If you, as the reader/farmer, can embrace the reality that you are the very matrix of the land that you farm, you have a future. If you realise that your every thought and emotion stirs the holistic energy of the farm, affecting everything from the micro-organic life in the soil, every plant that grows, all the livestock, the whole caboodle, then you may one day be teaching other people how to manage the land. It is all about conscious connection. You need to know that farmers have the greatest responsibility of anyone; they are the caretakers of the land, of the living soil.

We are moving into new times. All that I have learned in my lifelong connection with Nature indicates that we have to lift our game. Or, it will be game over! Our perception of Nature is a stunted mockery compared with those living in Palaeolithic times. We have become lost in our clever, but stupid, intellects. It is time to return to the wisdom of conscious intelligence. To be innovators: to trust our intuition: to connect with Nature and to once again experience the Oneness of all life.

I am delighted that in our rapidly changing world of today, there are farmers who do see this new way ahead. It is ironic that the new way is a revival of the old way, yet it is a revival with new knowledge and a far deeper insight into the real quantum world of agriculture, offering all the many possibilities of this new perspective. In this quantum world, we should always be aware that the frequency of physical life is low and slow. Your thoughts and emotions are fast, on a far higher frequency, and despite a linear time lag, they will inevitably impact your land and all that lives on it. With this in mind, know that there is no higher energy or greater transformative influence than your ability to use the Power of Love.