



# DuVersity 46 – Summer 2018

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Cut out drawings made by Leslie Schwing during a class on movements during the seminar  
'Language of Gesture'

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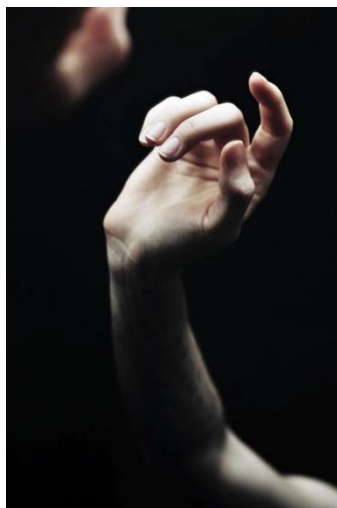
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## The Meaning of Gesture

Musings on the seminar 'Language of Gesture' (May 10-13, 2018).

**Anthony Blake**



The genesis of this program goes back to my time at John Bennett's centre in Coombe Springs in the 1960s when I first became exposed to the Gurdjieff movements. Coincidentally, I had become a practitioner of the Subud latihan, an exercise manifesting in spontaneous movement and energy (different for every person), just before encountering the movements. The joint experience of the movements and the latihan made me aware of a possible complementarity of movement from within and movement from without and gave birth to the question of how they might be united.

In later years I became aware of Gurdjieff's remarks on the nature of his movements, including his claim that they reflected an ancient form of language as precise and definite as in any book written today. There was even a suggestion that dance could incorporate a vocabulary and that, in some way, its movements provided instantiations or even a lexicon of them.

Nowhere, however, did I come across any descriptive account of such a lexicon, or even of any reading of any movement in concrete terms. There was an exception. Mr Bennett with sometimes comment on movements we were doing, and his remarks were often helpful to us in engaging with them more deeply. There were simple ideas of the meaning of extending the arms upwards, forward, downwards and to the side. He pointed out that the form of many movements exhibited three parts corresponding to the all-important Gurdjieff triad of thinking, feeling and moving centres. There were more hints, often forgotten the next moment.

Over the years, it seemed to me that people engaged in the movements regarded them solely as opportunities to work on themselves. They were not easy to do, at first. They required a splitting of attention into two or even three parts. Automatisms had to be broken.

The idea that the movements could be witnessed and read as if they were texts remained mysterious and unknown in practice. And nearly all movements classes omitted any chance for students *to see* – and practice seeing – the movements. There were movements demonstrations but these were *for the uninformed public* and not for the students themselves to see and to read them.

As time went on I slowly became more aware of the context in which Gurdjieff had worked, in Russia and in Europe, and realize the relevance or strong currents in Western culture to his own creative work. It seemed that he had assimilated a rich variety of music and dance in the East and then transformed this into works accessible to people in the West. His collaboration with the Russian composer Thomas De Hartmann illustrates the point.

Before coming to Western Europe, he had developed many kinds of dance. When in Europe he encountered gifted pupils of such systems as Dalcroze which were manifestations of revolutionary innovations in movement and dance stretching back to the 19 century and rapidly evolving still. Conversations and work with Wim van Dullemen introduce me to the riches of modern Western

dance. Wim had been a pianist for Gurdjieff's pupil Solange Claustres and then became a foremost movements teacher himself.

The ideas of John Bennett played a major part in my questioning of the meaning of the movements. In particular, he had distinguished three different kinds of language. According to him, there was a language of function, concerned with what we do; a language of being, concerned with what we are; and a language of will, concerned with what we mean.

Gesture was a language of will. But, also, *mathematics* was a language of will. The ramifications of this were wide and profound.

I gradually realized that Gurdjieff's idea of treating a dance, say, as a sort of text could be most misleading. The language of movement and gesture was very different from the language we use every day to describe, explain and instruct. It was made somewhat obscure because of the many movements Gurdjieff created that reflected prayers and rituals from various traditions and, therefore, brought with them elements of their original cultures. Contrary to often expressed beliefs, gestures are no more universal or intrinsic words are. And the idea that gestures preceded verbal language is not proven (and the supposition that Neanderthal man was non-verbal but only use gestures has now been largely abandoned). Gesture and verbal language probably evolved together. Some language functions are centered in the same part of the brain as those connected with active movements such as in throwing.

Perhaps the most important idea I have drawn from Gurdjieff is that the three kinds of initiative in us - moving, feeling, and thinking - were linked together so that any posture or gesture in one of them led to a posture in the second and thence one in the third: in the mechanics of the automaton we usually are, the three spin in a vicious circle. To generate awareness and thence freedom the circle needs to be broken. I take special note of the notion that even feeling and thinking have their postures. Significantly, in my perusal of the ideas of physicist David Bohm, I had come across his proposal that, just as there was a proprioception which informed us of the positions of our limbs in movement, so there could be a mode of proprioception of our thinking.

I could glimpse the possibility of certain movements might enable new kinds of thought. It might seem elusive but, at least in principle, one might be able to learn to *think in movements*. This would be radically different from looking for a meaning in gestures. No, *gesture would speak to gesture* in a way corresponding to how words speak to words in ordinary verbal language (note: words are defined in dictionaries by sets of words). An interesting perspective comes to mind is to consider a verbal language consisting only of verbs. We can actually find an example of such a thing in Spencer Brown's calculus where the sign  $\sqcap$  means both to indicate - it makes a mark - and to command - when it is called *cross*. When he writes  $\neg \sqcap =$  it means that one crosses and crosses again which means not to cross at all, or do nothing (doing nothing potentially contains an infinity of crossings). The term 'gesture' has the same dual character as 'cross', seeming to be both a gesture and to *make* a gesture, noun and verb.

Speculations involving mathematics may seem irrelevant to spiritual matters I believe they can play an important part in bringing us to understand the meaning of gesture as a language. As we

mentioned earlier, Bennett regarded gesture as a language of will but included mathematics in this kind of language. Gurdjieff's forms of dance that are numerical or geometrical are possible because, usually, the gestures that he uses are discrete and relatively simple. When asked by someone why he used such gestures, Gurdjieff replied: more honest! It has to be clear whether one gets the gesture right or not, otherwise a language is not possible.

The great pioneer of dance and movement notation, Rudolph Laban (see below), developed a system that can record any kind of human motion. This meant that people could accurately record a whole ballet, say, so that it could be performed exactly a century later. No previous choreographic system came close to being able to do that. What Gurdjieff did, however, was to create a style of movement the dancers could easily follow and remember the parts of. It was based on the articulation of the joints. Example, the rotations which were possible in the shoulders, elbows and wrists.

He highlights this in writing about the sacred dances he witnessed in the mythological Sarmoun monastery, where he describes young priestesses learning sets of postures by means of a machine that displayed the arrangement of the various bodily elements according to a programme put into it. Every joint can be set according to data inscribed and thus preserved on gold tablets. He then says that performances of the dances were made by older priestesses who had attained extreme precision and were watched by the senior monks. According to him, these monks were *able to read* the gestures made by the dancers.

The details of everything in this monastery, what it represented, and what was done there and how, I shall perhaps recount at some time in a special book. But meanwhile I find it necessary to describe in as much detail as possible one peculiar apparatus I saw there, the construction of which, when I had more or less grasped its significance, made a tremendous impression on me. When Prince Lubovedsky had become our second guide, one day on his own initiative he obtained permission to take us to a fourth court, at one side, called the Women's Court, to the class of pupils directed by the priestess-dancers who, as I have said, daily performed sacred dances in the temple. The prince, well knowing my great and absorbing interest in the laws of movement of the human body and psyche, advised me to pay special attention, while watching this class, to the apparatuses with the aid of which the young candidates for priestess-dancers were taught their art.

The external appearance of these peculiar apparatuses gave the impression, even at the first glance, that they were of very ancient workmanship. They were made of ebony inlaid with ivory and mother-of-pearl. When they were not in use and stood grouped together, they reminded one of 'Vesanelnian' trees, with branches all alike. On close examination, we saw that each apparatus consisted of a smooth column, higher than a man, which was fixed on a tripod. From this column, in seven places, there projected specially designed branches, which in their turn were divided into seven parts of different dimensions, each successive part decreasing in length and width in proportion to its distance from the main column.

Each part or segment of a branch was connected to the adjacent segment by means of two hollow ivory balls, one inside the other. The outer ball did not wholly cover the inner, so that one end of any segment of a branch could be fastened to the inner ball, and the end of the adjacent segment to the outer ball. In this way, these junctures were of the same type as the shoulder-joint of a man and allowed the seven segments of each branch to be moved in any desired direction. On the inner balls certain signs were inscribed.

There were three of these apparatuses in the room and beside each of them stood a little cupboard, filled with square plates of some metal, on which were also certain inscriptions. Prince Lubovedsky explained to us that these plates were copies and that the originals, made of pure gold, were kept by the sheikh. Experts had determined that the plates and the apparatuses themselves were at least four thousand five hundred years old. The prince further explained that, by making the signs on the inner balls correspond to those on the plates, these balls and the segments fastened to them could be placed in certain positions.

When all the balls are placed as designated, the form and extent of the given posture are fully defined, and the young pupils stand for hours before the apparatuses, regulated in this way, and learn to sense and remember this posture.

Many years pass before these young future priestesses are allowed to dance in the temple, where only elderly and experienced priestesses may dance.

Everyone in the monastery knows the alphabet of these postures and when, in the evening in the main hall of the temple, the priestesses perform the dances indicated for the ritual of that day, the brethren may read in these dances one or another truth which men have placed there thousands of years before.

These dances correspond precisely to our books. Just as is now done on paper, so, once, certain information about long past events was recorded in dances and transmitted from century to century to people of subsequent generations. And these dances are called sacred.

Those who are to become priestesses are mostly young girls who by the vow of their parents or for some other reason are consecrated from an early age to the service of God, or of this or that saint. They are given to the temple in childhood, where they taught and prepared for everything necessary, as for example, the sacred dances.

When several days after I first saw this class I went to see the performance of the genuine priestesses, I was astounded, not by the sense and meaning contained in their dances, which I did not as yet understand, but by the external precision and exactitude with which they performed them. Neither in Europe, nor in any other place where I have lived and have watched with conscious interest this sort of automatized human manifestation, have I seen anything to compare with this purity of execution.

*Meetings with Remarkable Men* pp. 161 ff

First of all, we can question why the monks had to see the data on which they were based in such a way. Surely, they could have learned to read the inscriptions themselves? We might speculate that when the different elements such as those determining the positions of head, forearm, hand, feet, et cetera was seen as a whole they convey something that could not be grasped by reading each part in turn as one would have to do starting from the inscribed tablets. If this was so, then the members of this elite audience would have to bring to the performance a special ability, combining thought and perception in a rare way.

Secondly, what kind of message is supposed here? Sometimes, Gurdjieff implies it is about real events in the past and sometimes that it is about cosmic laws. The former idea seems totally obscure. The latter is somewhat empty in the sense that any kind of dance must exhibit the laws of physics. What other kinds of laws are there?

Besides Gurdjieff, there were many pioneers of the 'science' of dancing and innovations of new forms of dance and movement. Amongst them I count Rudolf Laban (1879 – 1958) as a foremost example, some of whose ideas I was introduced to forty years ago by John Allen in his theatre workshops. Rudolph Laban had spiritual aims in his work on dance and notation but also a practical concern with how people could better move in life and work. He offered a scientific approach to understanding gesture. Gurdjieff forbade his students making notes of his dances so

that they had to rely on their body memories almost entirely. This was a powerful discipline for them but did not serve the preservation of the movements for future generations. Scientific work cannot flourish without free exchange and availability of information. The esoteric approach of Gurdjieff was completely antithetical to that. Real science *cannot be esoteric*.

*Basic Subdivisions Needed for the Observation of Bodily Actions*

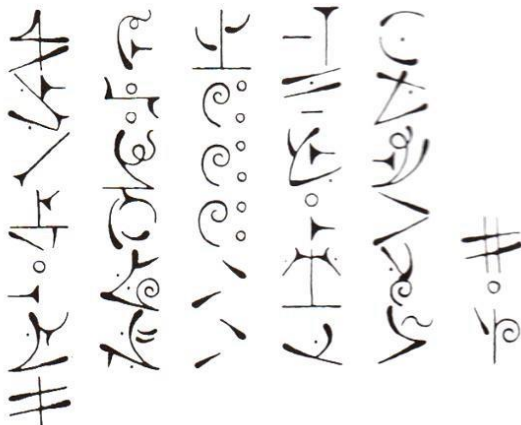


Figure 48 Rudolf von Laban: "Choreography," scale-notation in the so-called "Swallow's tail papers" (1926).  
SOURCE: Florian Noetzel Verlag, Wilhelmshaven, Germany.

Laban's approach to the notation of movement was detailed and subtle. He began with a system of glyphs that represented types of movement and made for a very beautiful script. He later developed a system of graphic signs that precisely delineated the position of every part of the body but also gave information on the style of movement, rhythm and much else.

If anything, Laban's system reminded me of the 'inscriptions' used in Gurdjieff's imagined monastery to programme the teaching machine used by the young priestesses. In the passage quoted from *Meetings with Remarkable Men* Gurdjieff is

speaking – whether or not according to some metaphor is not central here – of there being a way of exactly scripting the complex movements he describes.

Laban had a very deep understanding of bodily motion. Like the quantum physicist David Bohm, he had a sense of motion as *primary* and the *movement of bodies in space*, secondary. Space, bodies and movement were all one action. Bohm's word for this primordial condition was *holomovement*.

The thought occurred to me: perhaps the movement of enfoldment and unfoldment is universal, while the extended and separate forms that we commonly see in experience are relatively stable and independent patterns, maintained by a constant underlying movement of enfoldment and unfoldment. This latter I called the holomovement. The proposal was thus a reversal of the usual idea. Instead of supposing that matter and its movement are fundamental, while enfoldment and unfoldment are explained as a particular case of this, we are saying that the implicate order will have to contain within itself all possible features of the explicate order as potentialities, along with the principles determining which of these features will become actual.

Laban spoke in a similar way:

Our own movements and those we perceive around us are basic experiences. Forms of objects, as well as the shapes assumed by living organisms, wax and wane uninterruptedly. Yet forms of objects and living beings, when in quietude may suggest a “standstill” in the big unceasing stream of movement in which we exist and take part. This illusion of a standstill is based on the snapshot-like perception of the mind which is able to receive only a single phase of the uninterrupted flux. It is our memory which tends to perpetuate the illusion created by the “snapshots”; and the memory itself waxes, changes and vanishes.

Forms are closely connected with movement. Each movement has its form, and forms are simultaneously created with and through movement. The illusion of standstills creates an artificial separation of space and movement. Seen from such a point of view, space seems to be a void in which objects stand and—occasionally—move.

Empty space does not exist. On the contrary, space is a superabundance of simultaneous movements. The illusion of empty space stems from the snapshot-like perception received by the mind. What the mind perceives is, however, more than an isolated detail; it is a momentary standstill of the whole universe. Such a momentary view is always a concentration on an infinitesimal phase of the great and universal flux.

The sum of such snapshots is, however, not yet the flux itself. Cutting a film in pieces and heaping up the single pictures in a pile can never give the impression of a movement. Only when we let the pictures unroll does movement become visible. The unrolling snapshots can be shown in different ways. By mixing the snapshots in a higgledy-piggledy fashion, we shall obtain a fantastic picture as in a dream-world, full of unexpected jumps, breaks, gaps, overlaps and repetitions. The mind recognizes the unreality of such a film. A movement makes sense only if it progresses organically and this means that phases which follow each other in a natural succession must be chosen.

It is, therefore, essential to find out the natural characteristics of the single phases which we wish to join together in order to create a sensible sequence. We consider our snapshots separately only for the sake of analyzing the characteristics of the whole flux. Looking at single snapshots, we must always feel and comprehend both the preceding and the following phase. Often it is necessary to be aware of connections leading even further back into the past or forward into the future of the flux of which the snapshot is a part. (Laban, Introduction to *Choreutics*)

Laban understood that there were many subtle levels to the content of movements. It is too naïve to think that what one can *see* in the performance of a movement is the totality of what it is. Not only would the sensory acuity and speed of visual perception of an individual be limited but he would most likely not be aware of the subtle changes in muscular tension, breathing, etc involved in any movement, let alone any possible inner content to do with what we might call thought or feeling, and even less so with any intention or spiritual meaning.

There was and is a deep question about the relation between visible physical movement and inner states. It is quite possible – and in some of Gurdjieff's movements this is exploited – for the two to utterly contrast with each other. Yet, it is sometimes thought that every gesture we might make corresponds in some unique way with an inner state. The work of anthropologist Felicitas Goodman (1914–2005) centered on this possibility. According to her, specific postures to be found in old depictions carry impressions of an inner or spirit journey made by shamans. She has experimented with modern western people, getting them to adopt a posture and hold it in the context of ambient sound (drumming at a certain tempo). Often, they describe having visions or experiences that are very similar to each other.

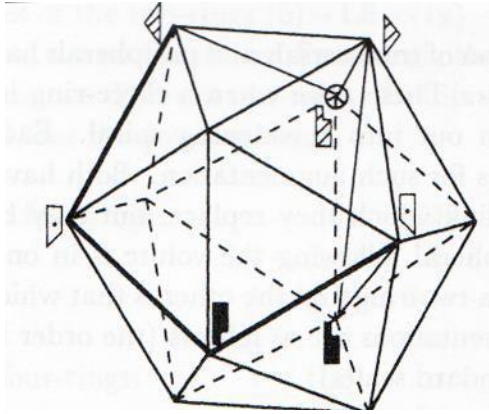
The contrast with Gurdjieff movements is extreme. In his dances many complex postures are held for a second or less. It seems unlikely that any inner experience could build up in that short time. Yet many devotees claim that every gesture has a definite complement in an 'inner state'. So much so, that any variation in the posture is claimed to eradicate the 'right' inner sense. I believe that what this does is simply motivate people to pay attention to every detail in a posture.

Few – in contrast to Goodman's practice – have ever *spelled out* any inner states matching definite postures from Gurdjieff's movements. It is another matter when we consider what the postures might *mean*. The word 'meaning' is subtle and complex in its usages, but it strongly associates with *intention*. The realm of meaning and intention is, to my mind, not to be identified with states, or images for that matter.

And it strongly resonates with Bennett's idea of a *language of will*.

This is quite different in nature from 'picturing' a posture, and I think that Laban was intuitively aware of this. He distinguished between recording movements in a 'realistic' pictorial way and recording them as they are done, that is as modes of action. This lends itself to abstraction and it is interesting to remember that Gurdjieff turned away from traditional forms of dance and ritual to become more abstract and geometrical in his series of movements (known as the 39) composed at the end of his life.





**A Form of Movement in Laban's Notation**

Since I have mentioned traditional forms, it is useful to reflect on the diverse sources of movements and postures which find their way into various forms of dance, including that of Gurdjieff. In the seminar on Language of Gesture, I chose movements from Gurdjieff that represented different sources:

Everyday movements such as getting up and standing (no. 31)

Skillful activities or work such as spinning (Spinning)

Gymnastic exercises (Gymnastique-Medicale)

Expressive performance (no. 25)

Symbolic narration (Canon of Seven)

In the history of dance there are many more sources, such as:

Forces of Nature

Movements of animals Collective worship Seasonal ceremonies

Combat and warrior training

Sexual display

Ecstasy

Trance

Philosophy and mathematics

Visual arts

and so on.



Of great interest is the vocabulary of prayer, particularly as they appear in the hands and arms. Most people do not realize that postures of prayer arise in different cultures and develop in various ways. They are not eternal. Example, the typical posture of prayer in the West 1000-2000 years or more years ago was the *orans*. Interestingly, as shown in the photograph here of Mr Bennett demonstrating part of The Great Prayer of Gurdjieff (in a class at Sherborne, 1973), this is exactly what he is doing.

Secular postures that are made part of ceremonies get adopted into religious usage. I traced the typical Christian posture of prayer his hands together and forward to the oath of fealty, which was last performed in the island of Sark in 1978. Prayer is also interesting because it focuses on the hands. The hands contain the greatest number of nerve endings in the whole body. They are literally and physically the organs of exploration. They are – as is obvious in many cultures – a feature of speech.

In thinking about the language of gesture we must focus on intentional acts. For the most part, however, our movements in life are unthought and simply a part of our routines. I tend to adopt a perspective in which I see the intentional as poised between the spontaneous and the mechanical. The word intentionality is used indiscriminately in philosophical discourse for any moment of consciousness. I want to keep its usage according to Bennett's discourse to refer to what is not mechanical.

Intentional acts need not require original movements (though they may be unique in a specific sense that has been described by John Bennett, as we shall see). This is obvious from the practice of litanies and other ceremonies, where people repeat series of movements of sometimes ancient provenance. Their task is to make the gestures intentionally. It is in that way that they can participate in the meaning of the ritual. There is, in principle, an equivalent reality in the worshipper following a ritual to what there is in Gurdjieff follower executing one of his movements. In this light, it is obvious that gesture is indeed a language and it draws on the community of indications. These are more than signs: they do something in and by themselves.

A gesture we make can reveal something inadvertently. This possibility refers us to the spontaneous, to what might arise of itself 'from within' as we say. It is manifest in the Subud latihan, but also in ancient and modern methods of inducing and releasing powers and knowledge from the body. A parallel can be drawn, of course, with the phenomenology of drugs and hallucinogens. All such things suspend certain controls or censors in our brains, allowing previously unframed experience to arise – that which has not been tamed and stereotyped.

In some reports of the experience of doing the movements it seems that there can be some release completely within the form of an intentional movement. This is sometimes described as the 'movement doing itself'. In speaking of this, Mr Bennett invoked the idea of a second or 'spirit' world:

There are other worlds than this bodily one—and in the first is the spirit of things or the essence of things. We must not be afraid of this world and we must try not to be doubtful about it. It is contrary to the ordinary way of thinking which simply divides the world into minds without bodies or other kinds of bodies. The "spirit of movement Number 13" is not some mind that is thinking of Number 13 or having a mental image of Number 13—it is something which is striving to be Number 13. . . .

There are three or four movements which are special in this kind of way. *Schadze Vadze* (Number 24) for me has the feeling about it that there is something wanting a body, that wants to be able to manifest and it is looking to us to be able to manifest. If you look at the movements in this way you may gain a different attitude towards them. The movements are not just something that somebody invented in the past and put on a piece of paper to remind them what they were, or something like that. They are something that wants to come into being, wants to be flesh and blood, and when the movement is done by us then it wants to be done rightly. When it finds a body that is doing it rightly, the spirit becomes happy and you yourself feel happy.

Michael swearing fealty to the Queen in 1978



The movement is just like “The Poor Thing” of Stevenson’s fable; it wants to be clothed in a man and it has the power to attract what it needs. The movements have power and people who watch them want to be doing them, to give birth to them in themselves. If we had enough people who could do the movements really well and if it were possible to show them, it might be a very powerful way of attracting people. Almost in spite of themselves they would want to come and enter into this work. *Way to be Free*, p.53

Let me emphasize something: intentional movement must appear to be artificial. This evokes a comparison of art with spirituality. Spirituality can be regarded as ‘art plus’. It is supposed it is beyond the sway of egotism, entertainment, even of beauty. The classical triune of higher values – truth, goodness and beauty – can remind us of the highest criteria of value in human experience. For a totally committed follower of Gurdjieff’s ideas, the movements do manifest truth and goodness.

But is that really there in the movements themselves? Or is it merely just in the devotional will of the adherent to the Gurdjieff ideal? Where does the authentication come from?

Gurdjieff’s pupil, the avant-garde musician Pierre Shaffer, reports:

He would walk amongst the dancers, straightening a row here, bending a torso there, correcting the position of an arm or leg and then moving on to the following line, making it do the next figure so that when all were once more in motion the exercise moved on from line to line, like a wave. Never mind about your bodies, it’s your state that counts. You are nothing but the hieroglyphs of an inexhaustible language that I shall continue to speak through you and whose secret I shall guard with my life. Though you may be clumsy, slow and lifeless, go on, write, write in your muscles, in your heads and, if possible, in your hearts. These are texts to be deciphered inwardly; only those who transmit them can understand them. You are living ciphers.

Many of his movements are based on the simple mathematics of the recurring decimal  $1/7 = 0.142857 . . .$  Which is nothing special in itself but some regarded with awe as expressing the mysterious workings of the universe! Numerical patterns abound in music and dance throughout the centuries. It is also well known that practitioners of dances or audiences of music can be totally unaware of their mathematical basis. The technique of incorporating hidden patterns in texts, music and dance has been widespread. It is just a technical matter. Why is it sometimes, as in some Gurdjieff circles, made mysterious or profound?

There is a nearly obvious sense in which we can claim that anything someone regards as sacred can in time manifest as such. All highly regarded gestures are derived from elements to be found in everyday life or customs. Meaning comes into operation through conscious repetition and shared practice. In this way, gestures can become things in themselves. They may be taken up into a language of violence we speculated about earlier, such as they enable us to contact and realize basic acts such as praying, wishing, striving, receiving, et cetera.

Bennett, following up on his early intimations of will as triadic went on to spell out a whole menagerie of laws (forms and types of will). But I believe he felt that the movements contained an alternative vocabulary to his mathematical combinations and their verbal interpretations.

Going back to some of the 20<sup>th</sup> century pioneers it is important to understand and appreciate the

theories and visions of such people as Schlemmer and Craig, as well as Laban. They detached themselves from the limitations of the human body, seeking a form that was impersonal and 'unnatural'. Whereas the 20<sup>th</sup> century was most important in terms of developing and releasing organic sexuality and sensory awareness, it's another more artificial ideal that brings us closer to another meaning of authentication. The main inspiration for this approach was a seminal text by Kleist called *Master of the Marionettes* in which the marionette or lifeless puppets was held up as a *superior* alternative to a sentient human being, just in the fact that they were unconscious! The resonance of this for me is in the major insight Bennett had of will, that it was *beyond consciousness*. The impersonal dancer can only be a pattern of will. *He does not exist*.

Let me finish by quoting from Bennett's *The Dramatic Universe* (Vol. 1) on the language of will.

Every gesture is unique. Bearing its own meaning, it requires neither interpretation nor intuition. Different gestures may be similar and similar gestures may be repeated, but the uniqueness of the gesture remains its dominant characteristic. The gesture is not taken out of the context but made in the context.

For better for worse, every gesture is an act that determines the future course of history. The scale of the act may vary greatly. Sometimes it will be very small and the consequences hard to discern. At others it may be so great that all human experience is changed by it. A gesture is eternal—that is, timeless—and yet it reverberates both in time and in space. It is never repeated and yet it recurs.

The uniqueness of gestures corresponds to the uniqueness of understanding. The understanding of one situation cannot be transferred to another. Understanding is always new because it is always an act of will, and the language of understanding must itself be an act of understanding. In the language of gesture, no word, no act, ever means the same thing twice. It is the language of the whole man, and it can be used only by a man who is himself a fully structural whole. The 'gestures' of ordinary men are no more than the automatism of their functions. The meaning of such gestures does not belong to those who make them, but to the universal processes into which they are merged.

We must therefore not be misled by the fact that a gesture is sometimes a sign or a symbol. *The Dramatic Universe* Vol 1 p. 91

### **Coda on Triadic Method**

Someone coming to the Gurdjieff movements for the first time may find them traumatic. This is because they often demand the performance of movements by different limbs in different rhythms or contrasting in some way that makes it next to impossible to do them automatically. Eventually, of course, people can adapt and then might feel that they 'can do it' – which means in fact that they have established another automatism.

It is just between one state of automatism and another different configuration, that we are so to say 'plastic' and capable of a learning that penetrates our being. A skillful instructor will be sensitive to what is happening in the student and adjust the demands made upon them in new ways to keep them open and, one might say, *vulnerable* to learning.

While there are two contrasting demands on us, a gap can be created in our being. This can feel like chaos. It is interesting to note that the word 'chaos' originally meant *yawning gap*, and it was

the prelude to creation. In our ordinary state we identify with where our effort lies. If there are two directions for this, identification weakens. There might be panic, of course, or at least frustration and irritation and a big part of the practice of movements is concerned with understanding how to manage these emotions which flood in to fill the gap.

The splitting of attention into two makes it possible for a third to arise. This is always new. A new arising is not possible without the death of the old. The material of the old is taken into a different form and is 'resurrected'.

The clash or frisson of two physical elements generate an *emotion*; then the arising of a third element is the advent of a *new kind of thought*. In this way, we can postulate that the movements can lead to new thinking.

A requirement for this to proceed is *containment*, a principle well noted in psychoanalytic circles. Containment is a matter of keeping together elements that, mechanically, would exclude each other. An important example is containing contradiction, or sustaining yes and no *at the same time*. One cannot help associating this with recent discourse in quantum mechanics on what is called *superposition*. In this mode of existence, we can have yes and no or one and zero at the same time, allowing for multiple possibilities at present being researched for the design of quantum computers.

Associations to quantum mechanics are suspect because the theory of it is not understood and much in dispute. However, they afford a glimpse of a way of describing the phenomenology of movements outside the classical framework which largely holds sway. Perception is not Newtonian and the centres are not fixed engines. Awareness changes what we are aware of. But most discourse on Gurdjieff's methods remain rooted in nineteenth century physics. Whereas the movements in themselves might transform how we understand thinking, feeling and moving.



Gurdjieff movement *Spinning* in seminar 'Language of Gesture'



Gurdjieff movement *Canon of Seven*

## MY STORY

**Arleta Ford, October 21, 2011**

I was born in Poland, left it almost 30 years ago, living first in Sweden, and then moving to UK where I live now. My professional background is in mathematics and philosophy. I have been working with David Bohm who had a deep influence on me; this included involvement in his dialogue groups for several years.

Concerning my “inner life”, in my twenties I began to practice Zen Buddhism. The practice stopped when I began to understand what Jiddu Krishnamurti - whom I met through David Bohm - had been trying to say. After some years of immersing myself in Krishnamurti’s “non-teaching” including his work with David Bohm, I have reached a saturation point. I could no longer learn anything more and gradually drifted away from both of them. The familiar notions began to nauseate me. Rather disillusioned with human attempts to reach the unreachable I turned away from these kinds of undertakings concentrating almost exclusively on a highly abstract mathematical work for the next few years.



Paradoxically, in the middle of this spiritual desert a series of very unusual events began to occur in my life. It was like breaking through of another order of reality into my normal everyday life. Some of the events called to my attention the name of Gurdjieff of whom I did not know anything. Because of bizarre nature of the events - I decided to look at Gurdjieff’s and related material. Eventually, I contacted Gurdjieff Society in London and began to work with them.

What is the Work for me and what it has been from the very beginning is, in the first place, a series of inward experiments in which new dimensions or levels of reality and of my own being are discovered. I say discovered because at the moments of meeting, or contact with these new dimensions, there is an overwhelming feeling present, that they are always “there”, and it is I who am not.

The Work for me is a kind of an inner research laboratory with tools and instruments - some of

them inherited from the tradition, some developed by myself and others who are engaged in a similar (re)search process. In this process whatever is being discovered becomes a stepping stone enabling me to see how to make the next step. I learn how to work while working. In this sense, the Work itself becomes the main teacher.

This, at the moment, is the most important aspect of the Work for me, though obviously, there is more to it.

I cannot talk in a meaningful way about the future of the Work. The Work, if it takes place in me at all, is always taking place now. Its future is unknown.

In my experience, to be “in the Work” means essentially a precarious labour of subsiding in Truth.

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What I said belongs to the aspect of the Work, which I would call “communicating with myself”. The next step is communicating with others. It is often emphasized that the Work is essentially an oral tradition. The challenge is, not only to be in truth with-in myself, but also with others.

I doubt I can build bridges to the Higher unless I learn to build bridges, first, within myself, from the “known” to “unknown” parts of myself, and then - to other human beings.

The proper order of steps on the Jacob’s Ladder appears to be:

Individual community (created by communicating with myself) Collective community (created by communicating with others) Wholeness (created by communicating with the Higher)

To communicate with others is a state, but not a state of an individual, though it includes it. It is a state of a twoness, a threeness etc. of individuals, a collective state. When we communicate there is always something else present, a collective higher being body, as it were, of which we feel ourselves to be individuated aspects. One may experience oneself to be a tool, a device or an instrument of understanding. It does not matter then who is saying what, because it is something else that speaks. It is possible to observe it - in oneself - with awe. To communicate is indeed a sacred act.

Communication is an enactment of self-remembering, its collective correlate. But the self of this self-remembering is not mine, it is that of a group, and the remembering refers to impersonal attention of the group.

To communicate – means to make, create, establish something common or in common. What is it that is made common in this way? My self and your self become “common”. The self becomes common, it ceases to be entirely mine or yours. One can feel the infinite sadness of being one-self. I can only be my-self. But then the “self” may go beyond being “my”.

Communication is a labour at the frontiers. It is a destruction of established orders. It is difficult and painful both outwardly and inwardly. Communication engenders suffering.

We talk as long as there is a misunderstanding present. If we talk long enough, the talking will eventually subside. If we endure silence then we may begin to communicate with each other - in truth.

The Tower of Babel myth is about the general malaise of not being able to communicate. The Tower is a symbolic dragon. The dragon is there on purpose. It is guarding a treasure. The treasure could transform us into something of immense significance.

To commune, to be in truth with others while communicating, is a possible future for human

beings. As it is now, we exhort, react, associate, exchange and arrange words, but the human speech in the service of communicating is as yet almost entirely absent.

As this by no means exhausts what I wish to say, I am asking Czeslaw Milosz for help:

### *On Prayer*

You ask me how to pray to someone who is not.  
All I know is that prayer constructs a velvet bridge  
And walking it we are aloft, as on a springboard,  
Above landscapes the color of ripe gold Transformed  
by a magic stopping of the sun.  
That bridge leads to the shore of Reversal  
Where everything is just the opposite and the word 'is'  
Unveils a meaning we hardly envisioned.  
Notice: I say we; there, every one, separately,  
Feels compassion for others entangled in the flesh  
And knows that if there is no other shore  
We will walk that aerial bridge all the same.

## **HARMONIC ORIGINS OF THE WORLD**

from the Preface of *Harmonic Origins of the World* by Richard Heath, Vermont: Inner Traditions 2018. Copyright 2018 by Richard Heath



My own findings regarding planetary harmony lacked a proper context until I came to understand the work of Ernest G. McClain and collaborate with him under the auspices of Duane Christensen's Bibal group, many of whose members were Ernest's highly various friends and longterm collaborators. Ernest sought to write his version of this book, then called Brave New World. Instead, there was a period of acclimatization and analysis as to the deeper implications within his diagrams and his methods of working. Out of the blue I wrote him a program ([www.harmonicexplorer.org](http://www.harmonicexplorer.org)) through which anyone can survey his views of the harmonic domain, while that domain and his friendship started to change how I perceived it.

Previous books of mine have also drawn on bodies of work not generally accepted by academics and hence were published to a more general audience, those interested in Earth mysteries and sacred numbers. A prominent influence was a leading author, John Michell, with whom I corresponded largely about ancient metrology. Michell and his friend John Neal provided me with the content for a self-propelled education in the now suppressed science of measures, which has been crucial here in analyzing sites such as the Parthenon, Marduk's ziggurat, and the Mexican city of Teotihuacan, as to harmonic codes built using ancient measures.



I wrote my first book (*Matrix of Creation*) after a decade of calculation. This work was initiated by my brother Robin Heath, and it focused on how the megalithic probably studied astronomy through their monuments and geometrical methods, then stumbling on the harmonic ratios crucial to this book. My purpose became the work of writing and researching a number of mystery areas with an eye to the story of their human development, a story not sought by historians who ignore fringe subjects. My writing resonated with the interests of long-term friend and occasional mentor Anthony G. E. Blake, on how media journeys enable an implicit order to emerge.

## On the Harmonic Origins of the World

*First published in New Dawn, No. 168, May-June 2018*

After the ice receded, late Stone Age people developed the farming crucial to the development of cities in the Ancient Near East (ANE). On the Atlantic coast of Europe, they also developed a now-unfamiliar science involving horizon astronomy. Megalithic monuments were the tools they used for this, some still seen in the coastal regions of present day Spain, France, Britain and Ireland. Megalithic astronomy was an exact science and this conflicts with our main myth about our science: that ours is the only true science, founded through many historical prerequisites such as arithmetic and writing in the ancient near east (3000- 1200 BC) and theory-based reasoning in Classical Greece (circa 400-250 BC), to name but two. Unbeknownst to us, the first “historical period” in the near east was seeded by the exact sciences of the megalithic, such as the accurate measurement of counted lengths of time, developed by the prehistoric astronomers. With the megalithic methods came knowledge and discoveries, and one discovery was of the harmonic ratios between the planets and the Moon.

The idea that the planets were gods had been born before the ancient world, through the data of megalithic astronomy and this megalithic idea was the basis for the religious ideas of the East. Megalithic astronomy and Near Eastern religious and harmonic ideas have both been written out of our history of civilization, leaving us with enigmatic monuments and ill-defined religious mysteries. How this slighting of our real history happened is perhaps less important than our discovering again the purpose of the megalithic monuments and of those religious ideas that sprang from the discovery that the planets were harmonically related to life on Earth.

### **Is human history lacking something fundamental?**

*The Harmonic Origins of the World* first explores this alternative late stone age, the megalithic, as more culturally significant than the advent of Neolithic farming. But ironically, the megalithic culture has been eclipsed by the history-building developments of the middle-eastern civilisations, all because intellectual histories could only start when written records began within the civilizations. Writing did not make people literate and they still relied on an oral tradition of storytelling which had descended from the stone age. But writing did record the oral stories which became our texts.

Subsequent civilisations changed the civilized soul, through contact with the material cultures necessary to support urbanisation: written records, accountancy, religious ideas, reason and most recently our own science and technology. To get closer to the meaning of the megalithic enterprise, one must recognise that its primary cultural norm was astronomical. Numbers were sublimated as counted lengths, these representing the duration of celestial cycles where days were counted using small standardised units such as a digit or inch. This counting of time, to form a length where

numbers were then implicit, enabled the geometry of the right triangle to also sublimate the multiplicative and trigonometrical functions used, in our mathematics, to calculate. Today's methods for studying astronomy are therefore completely different to those of the megalithic: we don't look to the horizon, count lengths or use geometry to compare. Therefore 20th century science has vastly underestimated the scope, sophistication and significance of megalithic astronomical knowledge.

### **Why was Religion astronomical?**

The religious thoughts that subsequently emerged in the ANE were mainly based upon the celestial heavens; where the planets, sun and moon were gods responsible for the creation of the world. Our word religion expresses the notion of a human effort to *reconnect* with a cosmic world above our heads. Ancient religion had a sacred basis that was kept secret from the ordinary man and this established the division between the secular and the sacred which still exists today. The most direct way of explaining why ancient religions sought to connect with gods, literally in heaven, is to see in it the product of a prior age in which the heavenly world was intensively studied so as to understand the behaviour of the celestial bodies within a heavenly *world of time*, as where something divine is happening. This work must have predated the earliest historical civilisations. No written record of megalithic astronomy has ever been found so that only the monuments can speak of it, if we understand their astronomical language of number and proportion.

By 3000 BC, the Sumerians had inherited fully developed *astronomically-based* religious ideas in their oral traditions (such as Gilgamesh, then fortunately written down on cuneiform tablets.) Thus, whilst the megalithic was reaching a zenith in Europe, the great historical civilisations recorded beliefs that could only have evolved from their concrete astronomical knowledge of the heavens, an activity brought uniquely to a high level of sophistication by the builders of the megaliths. But why were astronomical truths used as a basis for religious thought? To understand this requires we re-interpret the megalithic record, a record largely concerned with discovering the time-patterns of the sun and moon.

### **Astronomical Ratios are the Matrix of Creation**

The pattern of time formed by planets can be found within the stories and symbols of the historic period, but the techniques for finding this pattern only existed in the megalithic period as it must have been based upon measuring ratios between time periods. Planetary time ratios naturally lead to a pantheistic insight; that the planets are gods, instrumental in the creation and maintenance of the world. The megalithic established the ratio (between counted lengths) of the lunar to solar years, as the basis of their astronomy, and this approach was then crucial to understanding the musical pattern of time formed by the planets to the moon (as per figure 1).

The moon was formed after the collision of a proto-earth with a smaller Mars-like planet, as the inner solar system was coalescing its solid matter into the present inner planets: Mercury, Venus, Earth and Mars. Billions of years later, the moon achieved an orbital distance from the earth that made the lunar year (of twelve lunar months) musically resonant with the three outer planets. The lunar year formed a tone (9/8) to the synod of Jupiter, a diatonic semitone (16/15) to the synod of Saturn and a chromatic semitone (25/24) to the synod of Uranus.

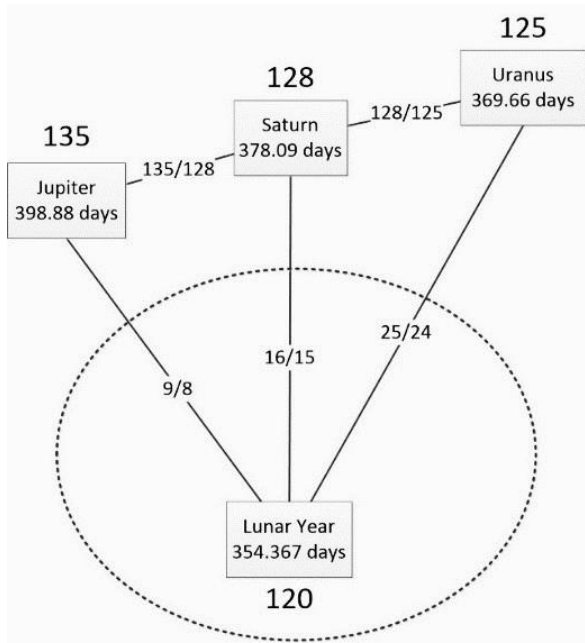


Figure 1 The synods of the outer planets based upon the earth's orbit make it possible, numerically, for the lunar year to evoke three of the most significant musical intervals. Earth's orbit and the Sun's illumination of the Moon have achieved the required lunar year length of 120, where twelve is the number of semitones in an octave, and notes on a keyboard.

For the ratios of these outer planets to relate to the lunar year requires the ratios of their synodic periods to already have the possibility of achieving this musical resonance, when viewed from Earth's orbital year. Figure 2 shows the situation within which the synods of the outer planets are themselves expressing lesser-known musical intervals between each other. Saturn is the

common factor of 128 units of time in length to Jupiter's 135 units and to Uranus's 125 units. It is these numbers in ratio that enable the lunar year to achieve a duration of 120 units and, since the lunar year is made up of 12 lunar months, these units of time are one tenth of a lunar month long or 2.953 days.

### Forming the Cosmic Octave

The optical discovery of Uranus in ancient times is dubious, but we can assume that the synods of Jupiter and Saturn became known to a megalithic astronomy which, as already stated, specialised in measuring time periods and in comparing these to other time periods, using trigonometrical triangles.

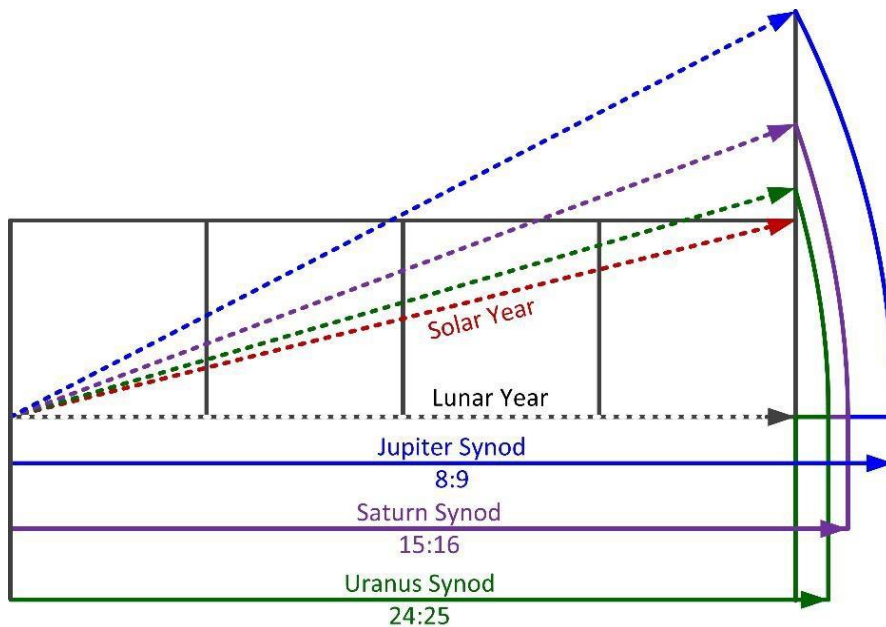


Figure 2 The harmonic ratios between the nearest three outer planets and the lunar year. The four-square rectangle with long side equal to the lunar year gives, geometrically, the solar year as its diagonal length. The outer planetary synods are longer since the planets have moved ahead of their last opposition to the sun, at which time they appear to perform a loop amongst the stars.

Figure 2 shows how megalithic use of triangular comparison would have revealed the common

factor, of  $1/10^{\text{th}}$  of a lunar orbit, between the outer planets, namely the Jupiter synod is 13.5 lunar months, that of Saturn is 12.8 lunar months (and that of Uranus is 12.5 lunar months.)

### The Gods of the Ancient World

This was the principle discovery on which ancient speculation, that the planets were gods, was based. These same lords of time were celebrated in the New World, after the Bronze Age collapse of 1200 BC in the Old World, firstly with the Olmec and subsequently the Maya and Aztec religions of Mesoamerica. Passed on from the Ancient Near East, Olmec religious ideas contained elements soon suppressed in the Old World. Numerical tuning theory was closer to its astronomical origins before 1200 BC so that, the fantastic information placed into mythic stories could still be read with regard to the harmonic numbers referred to in stories. These numbers could be abnormally long ages or reigns, the numbers of things, the number of syllables or stanzas, and so on. Ancient myths hold many astronomical and harmonic allusions which have long puzzled scholars unable to find the missing link in the megalithic.

A couple of seminal books on this subject emerged simultaneously with similarly challenging proposals. In *Hamlet's Mill* (1969) the Precession of the Equinoxes (and of the earth's Poles) was shown to be a common theme within myths and; in *The Myth of Invariance* (1976), Plato's tuning theory was shown to be "the tip of an iceberg" of ancient harmonic allegory: both books implied there had been a near world-wide oral tradition that had incorporated such matters in their epic works.

For example, the Bible has a flood hero called Noah, reused from those of Marduk in Babylon and Indra in the Rig Veda. Precession was considered the creator of world ages, that is, of History itself; and the great numbers of India expressed time as a harmonic ceiling for an octave, such as 8,640,000,000 – a number which turns up in many traditions, for example the Edda's final battle of the gods, and the design of Angkor Wat. The Bible significantly starts with a smaller number, the first man is called Adam, whose name in letter-number equivalence is  $1 + 4 + 40 = 45$  when added whilst in place notation he is 1,440, which is  $32 \times 45$ . This takes us back to the Moon.

### Music from the Moon

If one wants to generate a harmonic ceiling for the lunar year and outer planets, whose numbers are 120, 128 and 135, Adam as 45 must be doubled twice to 180, the age at which Isaac, son of patriarch Abraham, dies. This implies that the lunar year lies within a harmonic system of 18 lunar months, which is exactly the time period of the Olmec and Maya Supplemental Glyphs, sometimes added to their Long Count marking upon stela (engraved standing stones) as if these cultures had derived from the megalithic. The Olmec appear to carry forth parts of the intellectual life of megalithic times otherwise lost to the historic record. The Bible writers were evidently privy to this harmonic tradition which seems to have travelled alongside an oral tradition, lost though cryptically recorded by the genuine literacy of Plato's age, in texts and secret Pythagorean groups.

If one factorises the numbers 120, 128 and 135, one can place them according to the presence of prime numbers 2, 3 and 5, since it is these primes which form the musical intervals *between* tones:

Cycle	Powers of 2	× powers of 3	× powers of 5	Total
Lunar Year	8	3	5	120
Saturn	128			128
Jupiter		27	5	135

One can see that the lunar year and Jupiter synod both have the factor 5 whilst they *differ* in two ways; by 9 (3 x 3) and by 8, hence the interval 9/8 between them. Saturn differs in three ways from the lunar year; by 16 (128/8), and by both 3 and 5, hence the interval 16/15 *between* them. The writers of the Bible raised Isaac up from 180 through reproductive doubling to 360 (x 2), then 720 (x 4) to reach the fullest extent of Adam's name, namely 1440 (x 8), meaning we must multiply these planetary numbers by 8 to become 960, 1024 and 1080 – numbers which have rich meaning in ancient number symbolism. They can be viewed on a mountain made of increasing powers of 2, 3 and 5 under the 1440 limit (figure 4) and this mountain uses units one 80<sup>th</sup> instead of one 10<sup>th</sup> of a lunar month.

One 80<sup>th</sup> of the lunar month of 29.53 days is 0.369 days, which times 1000 is the synod of Uranus (starts 4<sup>th</sup> row), the air god Enlil, who launched floods to cleanse the earth of human wickedness. The Bible replaced him with YHWH and the seven planetary gods were removed from the week, numbering weekdays rather than deifying them as of the god, as per; "Thou shalt have no other gods before me". And yet, the harmonic doctrine still lay behind the outer biblical narrative, secretly informing it.

This situation is repeated in many ancient texts and in many different ways. The widespread insertion of harmonic numbers within literary texts gives three rows of darker notes around D a special capacity to form musical scales. In this case the gematria limit for Adam of 1440, gives him the ability to play five modal scales, some of the notes having these planetary numbers.

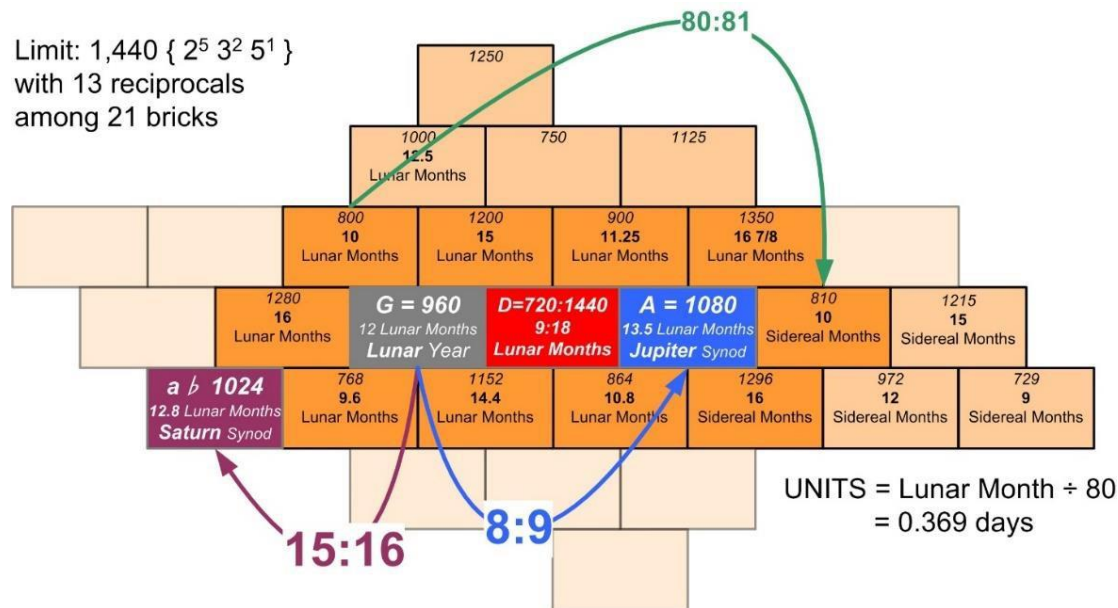


Figure 3 Adam becomes 1440 and shows where the outer planets are, harmonically. Such mountains were used to tell a story that maintained the harmonic doctrine whilst providing cultural and religious stories. (<http://harmonicexplorer.org#1440>)

This type of work was originally deduced from some of Plato's dialogues, seen as a codification of the ancient methods by Ernest G McClain, who wrote *The Myth of Invariance* to illustrate its widespread use in the ancient world. I have continued in this rich vein whilst connecting McClain's work with my own work: on megalithic astronomy and discovery (in 2000) of the musical intervals between the lunar year and the outer planets.

## Bringing it all together

*The Harmonic Origins of the World* is the latest exploration of this domain, revealing some famous figures in ancient myth, through visualising their “holy” mountains whilst introducing how practical musical scales work on these mountains. The significance of McClain’s work is deepened through the restoration of an important missing history which can explain why our oldest texts, often religious, are peppered with harmonic numbers. And part of that missing history is that harmony between the lunar year and outer planets has arisen relatively recently, alongside the modern humans of the last 200,000 years.

*FURTHER INFORMATION: my online magazine [numbersciences.org](http://numbersciences.org) has more information as well as my author site [richardheath.info](http://richardheath.info).*

## PUSHING OUR LIMITS: INSIGHTS FROM BIOSPHERE 2

**Mark Nelson, University of Arizona Press, Tucson, AZ (February 2018)**



*This is a new book about Biosphere 2, the radical experiment of modelling Biosphere 1 (Earth) built in Arizona between 1987 and 1991. The author, Mark Nelson, was one of the original ‘biospherians’ who lived with seven others for two years enclosed in the construction that was hermetically sealed and had to provide them with all their needs of food and air. I was proud to have edited the very first book Biosphere 2 – the Human Experiment written before the enclosure started, but the story of what actually happened is obviously of greater importance. There have been various books published on the subject but this, I feel is the most authentic, fair-minded and informative about the science. It is a remarkable document, embracing all aspects of the ‘experiment’. Here is an extract,*

*summing up the holistic approach Biosphere 2 was conceived through.*

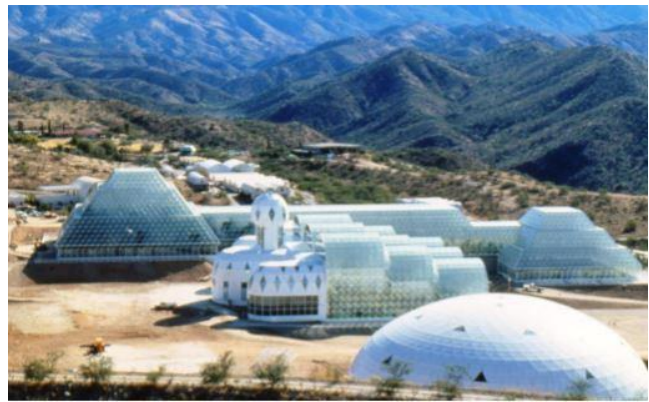
The endeavor of science is expansive: understanding the material world, nature and the universe. Students though are often taught only one approach: a hypothesis tested in an experiment to determine if it is true or false. That only describes one type of science. It notably does not include observational sciences. Darwin had his insight about natural selection and evolution on a round the world expedition where he carefully observed the plants and animals he encountered. Science through observation includes naturalist ecology, Earth systems science, geology and astronomy. These and other sciences can’t reduce what they are studying to a few discrete variables or make experiments.

Biosphere 2 was built using integrative holistic, system approaches and a lot of detailed, analytic science. Some of the controversy the early closure experiments aroused was due to the unfortunate chasm between analytic and systems scientific approaches. At present, the far stronger faction is the analytic or reductionist scientists. This approach has yielded enormous advances in its study of nature at very small, fundamental levels. But many question whether this approach alone is adequate for ecology, where complexity is extreme and multiple vectors and scales of organization are inherent. Analytic scientists tend to be dismissive of systems approaches. They often don’t

recognize that multiple approaches to science are needed with each yielding their own insights and understanding.

H.T. Odum noted in “Scales of Ecological Engineering”: “When journalists asked establishment scientists, most of whom were small scale (chemists, biologists, population ecologists), they got back the small scale dogma that system-scale experiments are not science...Some people recommended Biosphere 2 be used as they have used growth chambers for 60 years to study small things with many replications, relate trees to carbon dioxide, study species dynamics etc. How do you explain to people whose lives have been dedicated to organismic or population scale that what is more important on an ecological mesocosm scale is the whole self-organizing process? The real world of Biosphere 1 and Biosphere 2 has several scales of size all interacting together... A priori, all scales of science may be of equal importance, but there have been large research funds for the small scale and very little for experiments at a large enough scale to be relevant to the global atmosphere...There is no sure way to test theories and models of mesoscale self-organization except by seeding and running mesoscale systems. Science at one scale cannot validate that at the next scale.”

The bias towards analytic, small-scale science and against holistic studies limits science’s relevance to global biospheric challenges. Add to this the difficulty of implementing truly interdisciplinary research needed to comprehend the Earth. Jim Lovelock, co- founder of the Gaia theory, called it “academic apartheid”: institutional barriers which prevent scientists of different disciplines working together.



To design Biosphere 2, we brought scientists and engineers together as well as researchers from many different scientific fields. This needs to be part of a new paradigm in science to make it of more use in assisting our transition to a healthy relationship with the biosphere.

John Allen in his talk at the Linnean Society made the argument that complex ecological systems need to be studied with a variety of approaches. “Four basic ways uneasily co-exist in science to deal with understanding complex systems: [1] prolonged naturalist observation, description of observed regularities and classification of parts... [2] analyzing component parts of the object of study, formulating restricted hypotheses, and then, holding all else other than the chosen part as constant as possible, measure changes produced by measured impacts...[3] accept complexity as an irreducible element, and then to search for the organized structure that enables us to examine the entity as a whole, to ascertain its specific laws or regularities...[4] Put into an operating model a synthesis of these three approaches, together with test principles of engineering, to test the validity of the existent thinking’s predictive powers, and to provide a fecund base for new observations. This full interplay of observation, analysis and structuring to make a working apparatus in order to test and extend our knowledge of biospherics is the approach we used to create Biosphere 2. This interplay of all four scientific approaches is required to study Earth’s biosphere, the most complex entity yet encountered.” Personally, I found it painful to visit Biosphere 2 in the late 1990s. Maybe I was still too emotionally bonded with its life systems. I could feel Biosphere 2 was suffering from a lack of tender loving care. It looked forlorn and neglected. Some of the biomes looked distressed. As

Roy noted when he looked back at our extraordinary experience inside: “The crew members were able to prevent ecological catastrophe in a style known as ‘adaptive management.’ The 2-year experience inside Biosphere 2 fitted rather well into Odum’s definition of ‘ecological engineering’ as ‘light management that joins human design and environmental self-design so that they are mutually symbiotic’...the crewmembers looked at Biosphere 2 as ‘our baby’...When I exited the enclosure in 1993, Biosphere 2 was a luxuriant paradise of plants, albeit with extinction of some species, a phenomenon commonly observed with self-organizing islands.”

I was struck by the symbolism that one experiment in “flow-through” era Biosphere 2 was a test of how long piñon pine trees took to die in containers in the facility. This may be an indication of unpleasant news ahead in a climate change warmed U.S. southwest – more droughts and less rain. The trees were not watered and died faster in the hotter, drier desert and slower in the cooler, moister rainforest. Scientists took careful measurements and studied the trees as they died.

Rebecca Reider tracked down John Allen and others of the original team because she was curious why the early history was being concealed. Her book on Biosphere 2 discusses how “mainstream science” (Columbia University) received a free pass with little critical media scrutiny from the moment they took over the facility. The originators of Biosphere 2 were perceived as outsiders (despite our esteemed consulting scientists and institutions) and resented for going past traditional barriers and paradigms of establishment science. . . .

“‘Science’ could be performed only by official scientists, only the right high priests could interpret nature for everyone else...‘Science’ was separate from art (and the thinking mind was separate from the emotional heart)...‘Science’ required some neat intellectual boundary between humans and nature; it did not necessarily involve humans learning to live with the world around them. Finally, ‘science’ must follow a specific method: think up a hypothesis, test it and get some numbers to prove you were right”.

Some of these notions go back deep in the evolution of mainstream modern science, like the divorce of “experience” from “experiment”. There were a few voices, like H.T. Odum, who weren’t fazed by the controversies:

“The original management of Biosphere 2 was regarded by many scientists as untrained for lack of scientific degrees, even though they had engaged in a preparatory study program for a decade, interacting with the international community of scientists including the Russians involved with closed systems. The history of science has many examples where people of atypical background open science in new directions, in this case implementing mesocosm organization and ecological engineering with fresh hypotheses”. The antagonism has thankfully finally died down. Columbia University left in 2003. The University of Arizona stepped in a few years later to take over management and evolution of the facility with generous financial support from Ed Bass. Now there is real acknowledgment Biosphere 2 accomplished important ecological research during its early years.

*Mark concludes with the need for ‘new stories, new myths’*

It’s important to not heed those ready to give up the fight for a better future, as though we’ve passed some irrevocable tipping point. Artists and writers, poets and dreamers amongst us have a critical role to play. We are in great need of new scripts, new storylines, new epics, new mythologies and



teaching stories for humanity as we forge a renewed respect and moral compass for our behavior towards the natural world in the Anthropocene.

Many of the old myths deeply embedded in our cultural consciousness have sobering tales to tell: expulsion from the Garden of Eden, Gilgamesh cutting down the sacred forest, the ever-receding “golden age”, paradises gained but lost.

William Burroughs spoke at the 1980 I.E. Planet Earth conference. After listening to a weekend of reports on global challenges, he rose to sardonically say that he’d found a title for his next book: “Earth, the place of dead roads”. Burroughs saw we need to replace the tired old scripts with a new mythology where we will again have “heroes and villains judged by their intentions towards the planet”.<sup>401</sup>

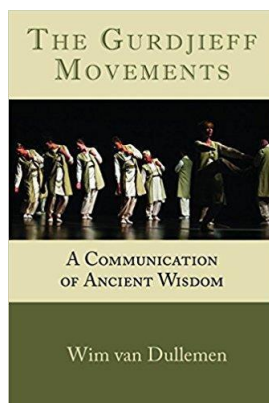
Out-dated mythic baggage, narrow bounds on science, economics which exclude human and natural values help feed the strange separation of humans from their rightful roles as participants in the biosphere. Many people think the environment is something outside of themselves, rather than understanding the truth that we are inseparable from nature, from our biosphere. These old paradigms are wrong, dispiriting and harmful.

The first step on the Buddhist path to “awakening” (Buddha means the awakened one) is Right Understanding, Right Vision. You have to change the way you think. You have to see the world the way it is, not as we want or are conditioned to see it.<sup>402</sup> The future need not be a march into collapse as extrapolated from our current assault on the biosphere. Beware self-fulfilling prophecies, they are delusional.

We need to awake to our reality and what a glorious one it is! Virtually everything I’ve said about the biospherians in Biosphere 2 is equally applicable for us living in the Earth’s biosphere.

I gave a talk on ecotechnics and Biosphere 2 at the Dallas County Community College Earth Day celebrations. Improvising at the end, looking out at a sea of young faces, I found myself saying: “we’re all looking for our soul mate but we already have one, it’s our biosphere.” Evolutionary biologist Stephen Jay Gould made a similar point: “We cannot win this battle to save species and environments without forging an emotional bond between ourselves and nature as well – for we will not fight to save what we do not love.”

## **The Gurdjieff Movements: A Communication of Ancient Wisdom** **Wim Van Dullemen, Hohm Press, June 2018**



Scores of books exist about the life and teachings of the Russian spiritual visionary G.I. Gurdjieff (~1866-1949), yet few devote significant coverage to “the Gurdjieff Movements.” These several-hundred precise and mostly asymmetrical gestures, arranged into detailed choreographies for groups of practitioners, were designed by Gurdjieff himself. This new book reconsiders the eminent role of the Movements, revealing them as a vital yet often-neglected component in the transmission of Gurdjieff’s legacy. Van Dullemen, whose first Movements’ teacher received her instruction from Gurdjieff himself, is in a unique position to offer background, theory and first-hand experience about this subject. He is a professional musician

and a long-time practitioner of the Gurdjieff work who trained in these Movements and served as a master accompanist for the practice for over thirty years. “No book can teach the Movements,” the author clearly asserts. And, he makes no such attempt here. Far from an instruction manual, *The Gurdjieff Movements, A Communication of Ancient Wisdom*, offers invaluable insight into and greater understanding of the whys and wherefores of this fourth arm of the vast teaching that comprises Gurdjieff’s complete communication: his books, his oral teachings, his music and finally his Movements. Along with fascinating stories of his own journey of discovery, van Dullemen has skillfully integrated: – autobiographical descriptions of the master Gurdjieff – interviews with direct pupils of Gurdjieff – diligent research within a wide range of firsthand sources – descriptions of the scientific, cultural and social climate during Gurdjieff’s time, and – the relationship between these and his teaching.



The book is also a rare accomplishment. While highly authoritative, it is nonetheless written in a direct style with clear language, making it accessible to the public at large who may have interest, but little background, in this esoteric science and practice.

*This text is taken from the book listing on the Amazon site.*

**Win van Dullemen with partner Christiane Macketaz**

## **DYNAMICAL ORGANIZATIONS THEORY: OPENNESS, SYNTHESIS AND EMERGENCE**

*This is a paper that is related to Knowles’ presentation to The American Society for Cybernetics on August 7, 2017 Salem, MA: A Brighter Future for Managing, Leading, Changing Dynamical Organizations*

**Richard N. Knowles, Ph. D.**

In your quiet moments have you ever thought about how great it would be if people could come together to find better solutions to the complex problems we all face? Do you ever dream about bringing it all together so people can work on the important things? We can do it!



We have very tough political issues, business issues, environmental issues, and cultural issues swirling around everywhere. The anger, polarization, misunderstanding are rampant. Power struggles, name-calling and bullying are not getting us anywhere near to finding the workable solutions. In many places trust and interdependence are missing.

Think about how frustrated you get in trying to force people to change, to do what you think is best? Have the people in your organization just dug their heels in to resist what you think is a new and better approach to improving the business or solving problems? As people push back have they formed cliques that fracture the organization and keep people apart blocking communication? Do different parts of the organization isolate themselves into subgroups and fight with other subgroups? Do the stovepipes of finance, research, production, marketing, sales, etc. create solid boundaries to keep others out of their territory? Have the bullies and other harassers created all kinds of problems?

Over the years Knowles became deeply frustrated by these sorts of behaviors in his own organizations. He tried all kinds of ways to overcome these problems. He tried to become a better manager and read lots of books about that. He studied leadership but most of what he read has been about being more charismatic, dynamic and more able to influence the people. He hired expensive consultants to no avail. A lot of all this has been about how to sell the ideas and get the people to do what he wanted them to do.

All this reading and studying with all their shoulds and oughts left Knowles feeling very inadequate and wondering if he could ever measure up to their standards. What was he to do to become a better leader and manager? The management process that he had learned over the years from many higher-ups in the big chemical company in which he worked was to work harder, know everything that was going on, micromanage and kick behind and take names. This worked a little but it was brutal and unsustainable for me and everyone else.

It does not have to be this way! We can choose to stay where we are and fail, or we can choose to take a different path, talk together, listen, learn and seek the best solutions for all of us. This approach vastly improves our chances for a brighter, more hopeful future in all our organizations whether it is in government, business, education, families and even in our own personal growth.

About 30 years ago he was finally frustrated enough to try to find out for himself how to become more effective in helping the people in the organizations for which he was responsible to become the best they could be so we could be more dynamic, more humane, more profitable, and safer both physically and psychologically.

He has made lots of progress and found some important answers to share.

## **Knowles' Adventures**

Knowles moved off the beaten path and began to study the Systematics of John Bennett (1985, 1996). He also ventured into the study of chaos and complexity theory. After years and years of study and observation he realized that the most powerful, rapid change process he had ever experienced was a real crisis like the fire that occurred in his chemical plant. People immediately stopped the dysfunctional behaviors he has written about at the start of this paper and became a high performance team in just seconds. They worked quickly with vigor and focus to put the fire out and restore production.

In thinking about what had happened for a number of years, Knowles came to realize that the behaviors the people showed in the crisis were like what he was looking for in order to help to create a superior, sustainable, more productive and humane business. People already know how to work this way. Years after the fire the operators, mechanics and supervisors talked about how

satisfied they felt in the way they had worked together talking, listening, making decisions; everyone trying to be their best. They liked working this way; it was fulfilling, exciting, stimulating and produced the results they wanted.

In your own experience in times of crisis you may have experienced a similar, rapid shift to high performance of your organization? This shift to high performance in times of crisis seems to happen just about all the time.

But there are three problems with this change process:

1. We can't have a fire or other crisis every six months to feel good.
  2. We generally do not know how to sustain the crisis level of performance so people fall back to the old ways.
  3. We can't sustain the high level of energy expended in a crisis like the fire for more than a few weeks.

However, through the years of observation and study, he has found an approach that helps organizations to learn to work at high levels of performance and to sustain very high levels of energy and creativity at the same time. It is basically the same process that unfolds in a crisis, but it is slowed down.

- Everyone can see the patterns and processes emerging,
- understand them,
- learn to use them,
- pace themselves at sustainable energy levels and
  - achieve the high levels of performance that are needed for the business to thrive and grow.

Knowles calls this approach "Dynamical Organizations Theory: Openness, Synthesis and Emergence" and has used it very successfully to help many organizations around the world transform themselves, moving to much higher levels of robust, resilient, sustainable, humane, business performance. The process of leading, using this approach, Knowles calls "Partner-Centered Leadership".

### **Dynamical Organizations Theory: Openness, Synthesis and Emergence**

The open flow of information and energy into, out of and throughout the organization is fundamental. The synthesis of various complexity theory concepts intertwined with focused, disciplined dialogue using the information leads to the release of powerful energy and the emergence of new information, new ideas, a clearer vision of the whole system and opens new potential. This Theory opens up the understanding of fundamental processes for change.

The new synthesis of complexity theory concepts enables us to see and understand how organizations actually work. These include:

- a complex adaptive systems (CAS) based approach to organizational change that is practical and proven in many organization,
- the work of Ilia Prigogine on dissipative systems (1996), (far-from-equilibrium systems that are open to the continuous flow of energy and information in, out and through them),
- Kevin J. Dooley's (1997) discussion of complex adaptive systems,

- Jeffrey Goldstein's (2011) discussions of dissipative structures and self-transcending constructs,
- Per Bak's (1996) ideas about self-organizing criticality,
- John Bennett's Systematics (1966 & 1985) and
- Richard N. Knowles' Process Enneagram (2001, 2002a, 2002b, 2013). (The Process Enneagram is not related to the enneagram of personality.)

Change is co-created and emerges from focused, disciplined, bounded conversations using the Process Enneagram©, a tool to guide the dissipative conversational process, and is sustained using the co-created Process Enneagram Map, a dissipative structure, that enables the organization to live far from equilibrium, and to guide and focus ongoing conversations as the people and their environment continually evolve. Arising out of this openness and synthesis, emerges the capability and will for the people and their organization to transform themselves, joining the business and human sides of the enterprise, and the development of a highly effective, more humane and sustainable workplace.

The energy that drives these processes is released in the purposeful, focused, disciplined, and sustained conversations about something that is vitally important to the people and for the success of the organization. Most people have a lot of energy to talk about things that are important to them. Self-organizing criticality explains the powerful role that the conversations play in building the energy for organizational change. The Process Enneagram is the tool to guide and map the conversations in this dissipative process. The completed Process Enneagram Map is the dissipative structure, the BOWL, the attractor, that holds the organization far from equilibrium near the edge of chaos.

The Process Enneagram©, created and developed by Knowles, provides a structured, facilitated, dialogic process tool to help the people to move through the SOC process and create the attractor for the emergence and cohesiveness of high performance work teams helping them to move to higher and sustainable levels of performance. The use of the Process Enneagram by the people, reveals the attractor that helps the organization to achieve both the order and focus for the organization and the freedom for the people to make the appropriate decisions for their own work at the edge of chaos.

### **Self-Organizing Criticality**

Self-organizing criticality (SOC) is a natural phenomenon that occurs widely in the physical world. The SOC theory was first introduced by Per Bak, Chao Tang and Kurt Wiesenfeld (1987). SOC is a property of self-organizing systems that, at their critical points, can suddenly shift to a new order. Examples of these phenomena are sand piles, earthquakes, mass extinctions, stock market fluctuations and traffic jams.

Bak's first examples were sand piles like the one in the bottom chamber of an hourglass. (Bak,1996). As each grain of sand falls onto the pile, the pile gradually gets higher increasing its potential energy. At some point, one that is not predictable, the next grain of sand causes the pile to experience a shift, a landslide releasing some of the potential energy. As more sand is slowly added to the pile, it builds up again until the next slippage occurs. Most of the shifts are small ones

that happen frequently. Some of intermediate sizes occur less frequently. Large ones occur even less frequently.

SOC is typically observed in self-organizing, non-equilibrium, metastable, dissipative systems where extended degrees of freedom and high levels of non-linearity exist, such as near the edge of chaos. SOC is a fundamental guiding principle that reveals order from disorder, making visible the invisible and providing stability to the system.

Bak showed that the sizes of these landslides followed a power law. The graphical plots of the logarithms of the frequencies of events versus their sizes results in a straight line. He extended his investigations showing that earthquakes, volcanoes, and traffic jams also follow power laws. He believed that SOC accounted for how order emerges from disorder and describes how, in turn, the most enduring structures can unexpectedly collapse.

In this Dynamical Organizations Theory, Knowles extended the SOC concept beyond physical systems making this the first, known application in social systems. He defines organizations as 'complex, adapting, self-organizing networks of people'. Since organizations are self-organizing the SOC process takes place within them.

Instead of watching grains of sand building up on each other, visualize a myriad of focused conversations in the organization building up potential energy over time. No one knows when the next conversation will be significant and shift things. The challenge for organizations is the optimization of SOC for collective output and organizational gain. Understanding how to reveal attractors that influence SOC is important in solving complex problems and holding the "living" organization at the edge of chaos. The organization's attractor provides order for the organization, a boundary and space within which the organization can hold together, yet allows the freedom for the people within the organization to make the best decisions possible about doing their own work at the individual level.

Using Per Bak's ideas and extending them to organizations is a very useful way to see invisible patterns and attractors, and to understand how change occurs.

### **In Pursuit of Safety Excellence (An Example)**

Most organizations are trying to grow and improve their safety performance and earnings. Many people in traditional management positions want to maintain a high degree of control so that their people do what they are supposed to do to make the organization more successful. These managers want to maintain the status quo seeking reliability, predictability, stability and control. They see organizational challenges through a machine-like lens using reductionist thinking and linear tools like project planning, cost benefit analysis, root cause analysis and training to fulfill the expectation that the people will work safely and do what the rules require.

These command and control cultures often suppress the creativity and energy of the people leading to the unintended consequences of the people feeling cynical, frustrated, confused, fearful of and resisting change and often angry. Improvements in performance, safety and production are difficult, slow and hard to sustain. When decisions are made at too high a level in the organization and the people are expected to unquestioningly follow these decisions, unintended as it may be, unproductive behavior often results. Information flows are constrained and restricted, trust is low

and managers lack the capacity to help the people to develop the collective purpose and identity of who they are and what they are trying to accomplish. The gulf between the work-as-imagined by those at the top and the work-as-done by those doing the work is unrecognized and huge.

For many managers this complicated, machine-like approach is seen as the proper and responsible way to lead. The roots of this go all the way back to Frederick Taylor's (1911), *Principles of Scientific Management*, and are further influenced by Max Weber, A. M. Henderson and Talcott Parsons (1947) in *The Theory of Social and Economic Organization* who refer to layers of hierarchy, rigid status and structure, rules, and the role of experts. This way of leading is seen as conservative, efficient, low-risk and repeatable across many levels of the organization. This is often okay for standardized systems and processes like payroll and a simple production line. But when these ideas are applied to the people, the results are usually unsatisfactory. It is what most managers have always done. They see the organization as if it is a machine, but, people and organizations are not machines; they are much more like living systems such as flocks of birds or schools of fish.

When managers shift their thinking and approach to their organizations, seeing them as complex, full of non-linearity, feedback loops, and iterative processes, new opportunities open up for the organization and the people to become much safer, more effective, productive, profitable, robust, resilient, and better places to work. The cultures in these organizations become more vibrant, resilient and alive with the people feeling hopeful, having a sense of urgency with clarity of purpose, and openness to change and new possibilities (Knowles 2002b). Energy and creativity flow abundantly. People embrace the changes they create. Resistance to change almost disappears. The huge waste of the typical dysfunctional behavior disappears.

While this is a new and different place for most managers, they can develop the confidence to become significant change management leaders, learning to live with the certainty that previously unseen properties will emerge enabling them to reach higher, more sustainable levels of safety and business performance with their teams.

To do this, though, requires an awareness and receptivity to the notion that human experience has evolved with SOC as a basic property behind the actions and thoughts of people. This is one reason the author understands organizations to be complex, adapting, self-organizing, networks of people. They are dynamical, dissipative systems with energy and information flowing in, out and through them with changes occurring in both time and space. These networks are resilient and robust with information flowing freely throughout the networks in myriads of conversations. They can operate far from equilibrium near the edge of chaos.

In addition to many conversations building up over time, a key for organizations to thrive and grow is the identification of SOC strange attractor that holds the people and the organization in this dynamical space. The hidden patterns behind the visible patterns of behavior are difficult to discover. However, once revealed they provide a region of order among the chaos as well as a space for freedom in which the people make the best decisions they can for their own work.

Knowles discovered a methodology to reveal the strange attractor that enables SOC to be a positive force in the organization realizing that the strange attractor enables the organization to have sufficient stability to live in the ambiguity at the edge of chaos. He discovered the Process

Enneagram© tool to guide the dissipative conversational process that leads to the co-creation of the Process Enneagram Map. This behaves like a strange attractor and helps the people to discover and reveal the hidden patterns that allow creativity and energy to emerge while, at the same time maintaining order and focus for the organization and the freedom for the people to make the best decisions for the work-as-done as well.

Knowles calls the strange attractor, the BOWL. It is a basin of attraction made up of the vision, mission, principles and standards (of behavior and performance) and the ideas that emerge from the people co-creating their own Process Enneagram Map. The BOWL reveals how SOC can work collectively for the people and the organization by providing order and a boundary in which the people can co-ordinate and co-operate, yet also enabling the people within the BOWL to have the freedom to make the decisions that are appropriate and best for their particular work. As people see the need to do something they have the freedom and support to step forth to address this need and in doing so the organization becomes “leaderful”. In a leaderful organization when someone sees the need to do something, improve something or fix something, they take the initiative to begin to do the work getting help and guidance as needed.

**The Process Enneagram©**

The Process Enneagram is a tool for dealing with complexity. An enneagram is a Greek word for a 9-term figure. This figure was introduced by George Gurdjieff to his study groups in St. Petersburg, Russia in about 1915. Where he discovered it is unknown. The Process Enneagram as developed by Knowles builds on this figure and is focused on the patterns and processes taking place in organizations. Knowles identified the unique nature of each of the 9 points, the way they interact, and the nature of the inner lines. Patterns for three leadership processes as well as for personal and organizational transformation were discovered. The use of this tool in a guided dialogue enables people to see who and what they are as well as discovering how and why things happen as they do. The business and people sides of the organization are reconciled and brought together resulting in the release of creative energy and commitment. In the course of the dialogue the people develop practical solutions to solve complex problems, make the connections with other people that they need to help them to do the work and, in the course of the dialogue, energy and commitment emerge. They co-create their living strategic plan.

Beverly G. McCarter and Brian E. White (2013) in *Leadership in Chaordic Organizations* suggest that the Process Enneagram© provides the missing link between complexity theory and practical application.



Figure 1  
The Process Enneagram©

The Process Enneagram©, Figure 1, guides and informs the conversations that are needed to move towards excellence in all aspects of performance. A breakthrough in developing the Process Enneagram© was Knowles discovery that Bennett’s (1986, 1985) systems could be placed around the circumference of the figure.



- Point 1 The Monad renamed as “Intention”
- Point 2 The Dyad renamed as “Issues and Ambiguities”
- Point 4 The Triad renamed as “Principles and Standards”
- Point 5 The Tetrad renamed as “Work” (the actual, physical things going on)
- Point 7 The Pentad renamed as “Learning and Potential”
- Point 8 The Hexad renamed for “Structure” (the internal structure of the organization) and “Context” (the external environment in which the organization exists.)

Points 0, 3 and 6 were renamed from Function, Being and Will to “Identity, Relationship and Information”, the three elements required for self-organization. These are the visible manifestations of Function, Being and Will.

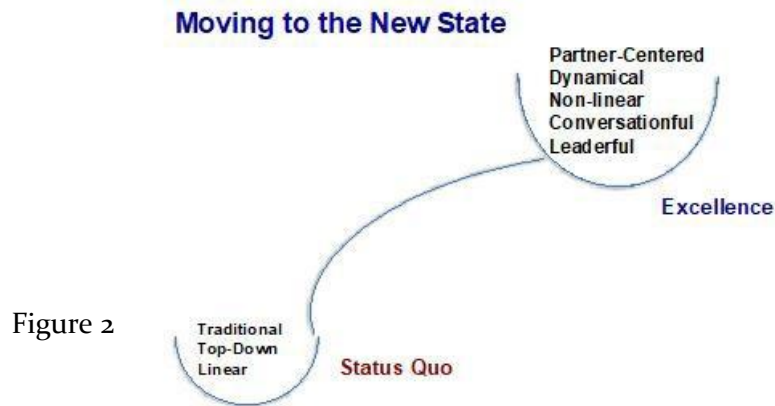
In the course of the dialogue with the Process Enneagram, a map is co-created by the people in the organization. David Byrne and Gill Callaghan (2014), in *Complexity Theory and Social Sciences, The State of the Art*, point out that people from all organizational levels, including the managers, need to be involved and engaged in the dialogue for it to be effective in the complex system of the organization. The voice of the system needs to be engaged. The dialogue process begins with a question that is important and compelling to the people like “How do we improve our safety performance?” This is followed by dialogue at each of the 9 points, writing onto the map the people’s ideas and comments as they emerge. This is an enlightening process of self-discovery for the people who realize that collectively they have a lot more knowledge than they realized, and together they learn from experience and come to understand how SOC can work collectively for them.

The Process Enneagram Map that the people co-create is their attractor and it is then posted on the walls of their meeting rooms. It is constantly discussed each time they meet, asking each other about their experiences since their last meeting, making revisions as things change, and decisions are made. The co-created and shared Principles and Standards need constant attention as they are a key part of the whole process. As the people work together in this dialogue at each of the 9 points, the organization becomes conversationful around their core work. These ongoing conversations keep the Process Enneagram Map alive allowing the people to make constant adjustments as the world changes and to sustain their work processes.

An important role for the leaders in the organization is to create the conditions for change by constantly maintaining the ongoing conversations about their Process Enneagram Map, fully sharing information by going into their organization, listening to and talking with the people, learning together and helping them to see the importance of their contributions for the success of the whole organization. The Process Enneagram Map reveals the strange attractor (the BOWL) and is refreshed continuously ensuring the cohesiveness of the work and sustainability of performance.

In the hundreds of workshops that Knowles has led, the people shift from their old, traditionally led, low-energy organizational basin of attraction to their higher energy, more effective and efficient, self-organizing basin of attraction called their BOWL. This shift often happens in just a day or less. Then the leaders sustain the process through the ongoing conversations and dialogue each time the people meet.

This is illustrated in Figure 2.



The Process Enneagram is fractal and can be used at any level of scale. It begins with the starting question of importance. The opening question can be narrowly or broadly focused. The ideas, developed as the Process Enneagram map is co-created by the people, are guided by the nature of the question. A narrowly focused question develops a Process Enneagram map with a narrow focus and a broadly focused question develops a more broadly focused Process Enneagram map.

The completed Process Enneagram© map, co-created by the people, becomes their living, strategic plan and is updated constantly as conditions evolve and change. This is their strange attractor, their BOWL enabling them to live at the edge of chaos, adapting, thriving and growing by providing the stability and order to hold everything together and the freedom for the people to learn, grow, make the best decisions possible and create new opportunities. Many of the changes they make are small, some of the changes are bigger but less frequent, and occasionally the organization reinvents itself. The organization is much more resilient as the people constantly make adjustments to improve things. By engaging the people from across the system in the Process Enneagram dialogue an adequate variety of people and thinking is brought together to address their complex problems.

In using this approach when Knowles was the Plant Manager of a large, DuPont chemical plant in Belle, WV the earnings rose about 300%, injury rates dropped by about 98%, emissions dropped by about 88% and productivity rose by about 45%.

### **SOC – Purposeful use of a Natural Phenomenon**

In Figure 3 pathways are shown for the two choices that a leader or manager can make each time he/she is faced with a complex decision. The lower, command and control pathway is followed when the manager is working with routine systems and processes like running a payroll. Sometimes, when non-routine problems arise, the manager thinks that she/he has the answers and imposes them upon the organization. This pathway choice usually feels quicker for the manager and if the people just follow the instructions, things will be just fine. But many times things are not just fine because when the manager imposes his/her will onto the natural tendency for self-organization, the people in the system begin to pull back and shut down. Information flows become weak and blocked up. The energy dissipates. The levels of trust between the people in the organization and the leaders get broken, all sorts of dysfunctional behavior spreads, like the way people form cliques and resist change. The hidden elephants grow. People self-organize around the

kinds of behaviors that drag the organization down and suck the energy out. Nothing basically changes; the culture is quite dysfunctional, the network breaks down and the organization gradually dies. The energy of SOC is drained from the organization.

This lower pathway is appropriate for managers to run standardized processes like a payroll or supply chain or a production line. It is also appropriate for solving simple and complicated problems. These processes need to be stable and controlled to maintain productivity and quality demands. But these management processes can be pushed too far and drag people down by suppressing the flow of information and creativity. Complex problems can't be solved using these linear processes.

The upper, SOC pathway in Figure 3 is taken in the crisis situation. There is so much happening so quickly that the manager can't control things and people clearly see the need to step forward to help in the crisis. The people become a high performance organization instantly, putting aside the dysfunctional behaviors, self-organizing and doing what it takes to overcome the crisis. It is an exciting time, but once the crisis passes, everything falls back to the old way because no one knows how to live at the edge of chaos.

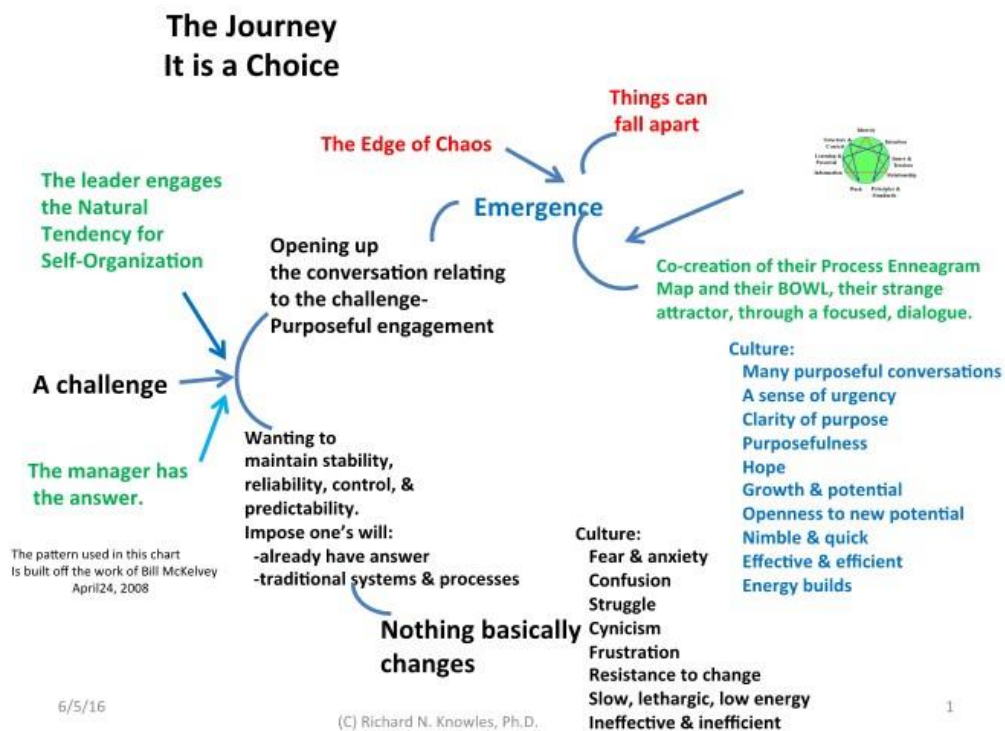


Figure 3

However, when the leader intentionally slows this crisis process down and follows the upper pathway, engaging the natural tendency of self-organization, he/she is now consciously using the natural phenomenon of SOC; this is the pathway of Openness, Synthesis and Emergence and the Partner-Centered Leadership process. As the conversations open up and the energy builds, the organization moves up along this path. New ideas and possibilities emerge; the elephants get rooted

out, information flows freely enabling the network to better know itself. The excitement and interest in the work build. People become more creative, energized and leaderful. The organization moves towards the edge of chaos where it is most dynamic, creative and healthy. The people co-create their shared future learning to work together in new ways using the Process Enneagram thus enabling them and their organization to hold themselves successfully far from equilibrium at the edge of chaos becoming a highly functioning organization with a positive, sustainable, strong culture. The small changes at the beginning of the change process enable the people from all across the organization to learn to live and work together without causing a big mess as they learn, make mistakes and grow.

The Process Enneagram Map records and reflects the elements of their strange attractor, the BOWL, the dissipative structure that the people create enabling the organization to live effectively at the edge of chaos. The leaders and others maintain the BOWL, which provides order and focus. As the people's understanding broadens and they continue to learn together, people discover that they can work within the BOWL and make the decisions they need to make to do their work more effectively and safely. Walking around among the people, learning, listening, talking with each other is one of the processes to sustain the BOWL. The BOWL is the strange attractor that enables the organization to live and work successfully at the edge of chaos and for the people to do their work most effectively and safely. A number of case studies showing completed Process Enneagram maps are in Knowles 2002b.

Here are some real examples of new things that happened in organizations near the edge of chaos. The initial, small changes can be easily overlooked so it is important to pay attention and keep track of the changes beginning to happen.

- Many small changes occurred like when one member of the City of Niagara Falls, NY Leadership Team offered a truck with another group, and another Team member provided temporary clerical help to another group. These kinds of sharing behaviors are rare in Governmental organizations.

- Some intermediate sized changes occurred like eliminating \$700,000 a year in wasteful truck handling procedures in just two months. The operators at the Belle Plant did this after first-line supervisors had been removed from the shifts. The operators saw the need to eliminate the congestion caused by all the empty trucks just sitting around so they stepped in, got the trucks removed and solved the problem.

- Occasionally a large change occurred like when a new leader at the DuPont Niagara Falls Plant came into a dysfunctional, failing organization that was not able to run. He declared that "failure was no longer acceptable" and opened up the conversations to smoke out the elephants. Change happened quickly and the operation is still productive and profitable 25 years later.

- Another example of a major shift occurred in the CSR Invicta Sugar Mill in Ayr, Australia when the people cut their number of serious injuries from about 35/year to zero in just 3 weeks and sustained that performance for the next 9 months.

- Another example of a large change occurred at the DuPont Belle, WV Plant when 16 different conversions of chemical process control systems were made without building the control

processes in parallel to be sure that the new processes would work before the old ones were shut down. Every one of the conversions worked, enabling the organization to cut the time and costs of these conversions by about 50%, saving millions of dollars of investment and months of time.

- Another large shift occurred in improving the productivity of the chemical operations. There were several products made in campaigns (one production sequence run after another) where the same equipment was used. All the piping, valves and reaction vessels had to be meticulously cleaned so that there was no cross contamination between the products. The time for these change-overs was reduced from about 7 weeks to about one week as everyone worked more closely and interdependently.

The people at the DuPont Belle, WV Plant, where Knowles was plant manager, leading and using principles of the Process Enneagram from 1987 to 1995, built the processes and learned to sustain this high level of work for 17 years, even though subsequent plant managers failed to follow through, retreating into their offices and themselves. Then things gradually fell apart when the BOWL was not sustained and the SOC process broke down, in this case, to the point where a man was killed in 2010 in a preventable accident 15 years after Knowles had been reassigned and had left the Plant.

Continuous dialogue and conversations along with the use of the co-created Process Enneagram map keep the BOWL alive. They are the keys for leading the organization to moving it through SOC and thriving in highly energetic, creative, effective, productive, profitable and safe ways of working at the edge of chaos. The future is built one conversation at a time! Organizations ultimately ignore this at their peril. This is the Dynamical Organizations Theory in action.

### **Additional Thoughts**

Self-Organizing Criticality may be the basic, widespread property of the way massive shifts occur in historical pacification and civilizing processes. Steven Pinker (2011) in *The Better Angels of Our Times, Why Violence Has Declined*, describes major shifts in the way violence and cruelty have decreased in human history. For example, widespread conversations throughout society built the energy to eliminate the evils of burning witches occurred well before the practice officially ended. He has many examples of the frequency of war, violence and homicides showing similar decreases. Extensive conversations through the societies about the evils of these things took place leading to the decline of the frequency of these events. It is quite possible that a significant reason that the Berlin Wall came down is because of the thousands of conversations over years and years in kitchens and bars building the energy to condemning it. The pressure for change developed, the energy built and then it just seemed to come down.

The small and medium sized shifts discussed in the previous section are much more easily observed in discrete organizations like the City of Niagara Falls Leadership Team and the Belle Plant than in more massive societies. However, many small and medium sized shifts probably occurred in the examples discussed by Pinker.

### **Summary**

Dynamical Organizations Theory: Openness, Synthesis and Emergence is energized by the free flow of information and the important conversations throughout the organization, facilitated by the Process Enneagram in disciplined, focused, continuous conversations that are open to the free flow

of information and energy; this is a dissipative process. During the course of co-creating the Process Enneagram the conversations are recorded onto the Process Enneagram Map creating the attractor or BOWL that provides both order to hold the organization together and the freedom for the people to make the best decisions for their work. This is a dissipative structure.

The map, co-created by the people with the Process Enneagram tool, reveals the strange attractor for the organization helping the people to move up the SOC pathway and hold themselves at the edge of chaos. Constant conversations facilitated by using the Process Enneagram© map, the constant revisions needed as the environment changes and the emergence of new ideas and potential, keeps the organization high on the SOC curve near the edge of chaos, and its people sustaining their work. Their Process Enneagram© map is their living strategic plan.

The Dynamical Organizations Theory: Openness, Synthesis and Emergence reveals the patterns and processes that are so critical for successful change and improvement. This Theory has proven powerful and useful for many for-profit and not-for-profit organizations in many countries around the world. In using this Theory, a better and brighter future is available for everyone.

Mark Twain once said:

“Coming together is the beginning. Keeping together is progress. Working together is success.”

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## Shakespeare

### Michael White



“Life’s but a walking shadow; a poor player,  
That struts and frets his hour upon the stage, And then is  
heard no more; it is a tale  
Told by an idiot, full of sound and fury, Signifying  
nothing.” (*Macbeth* V,v, 24-28)

There are special times in history where something new is born, a new art form, a new way of thinking, a new understanding of our place in the world. At these times the greatest minds, the people with the most genius are drawn to these new art forms.

When something new arrives on the scene it is the essence of creativity and as such those people with the most creativity are drawn to it irresistibly. We can see this happening down through history, in fourth century BCE Greece there was an explosion of new thinking in philosophy, drama and in politics and out of it we got Socrates, Plato and Aristotle, along with the birth of democracy and the flowering of Greek theater. In Renaissance Italy there was an explosion of artistic energy and we got Michelangelo and Da Vinci. In the last half of the 1950 and the 1960 a new kind of music came up out of the Mississippi Delta and got electrified and we got Rock-n-Roll and when it hit England we got the Beatles and the Rolling Stones, and at the same time the Beat Generation came along with Kerouac, Burroughs and Ginsberg and there was an explosion of literary activity all across America. At these times there is a confluence of genius and when new art forms arise it brings immense social changes in its wake.

The birth of theater in England from its start with the creation of the first theater in 1576 until the Puritan government closed all the theaters in 1642 was another such burst of creativity. And out of it we got the modern theater and the genius of Shakespeare leading the way, creating the archetype of the modern personality. In 1576 the earliest English theaters opened for business with, for the first time in the history of English theater, an amphitheater type venue. Before this time there was some theater performance but it consisted of traveling troupes who went from town to town performing Mystery Plays mostly related to the Church holidays, acting out scenes from the Bible illustrating some of the most famous stories in the Old and New Testaments. Some

performances took place in Inns in the courtyards or inside some local community space. The local schools and universities also put on plays, typically in Latin as a didactic technique to study Latin, doing performances of famous plays from the history of Italian theater.

The first English theater was outside the walls of London and was built along the lines of the popular bear baiting arenas, roughly rounded with standing timbers that formed the frame for a couple of tiers of galleries that surrounded a staging area but it was the archetype for an explosion of theatrical activity.



This first theater was named the Red Lion and was completed in 1567. It was built by James Burbage's brother-in-law John Brayne and gets the honor of being the very first theater in a permanent structure in England. Burbage observed the process and while it was a bit ahead of its time and was not a commercial success Burbage used the basic design and built his own building, a three story amphitheater which he name The Theatre. It was open to the sky in the center with three tiers of galleries, with the galleries covered with a thatched roof and room to stand on the ground around the stage. It opened in 1577.

Burbage leased land just outside the city gates of London in order to avoid any interference from the powers that be in the city. Burbage's name, The Theatre, was created from two Latin roots, coining a term that was then applied as an antecedent to all the venues that followed. This time it caught on in a big way and within a few years another similar venue opened nearby named The Curtain. The City Fathers in London fought against these until 1583 when the Queen gave her sanction to the players and the City Fathers reluctantly gave up their efforts to stop the theaters. Within a couple of decades there were six theaters around London and in 1609 the first indoor venue opened at the Blackfriar and soon after another indoor theater opened. These provided a theater culture that quickly became famous all over Europe and lasted until 1642 when the Puritans took power.

The City did manage to pass a law outlawing the production of plays in the courtyards of Inns inside the city limits in 1595. In this time a flowering of theater was experienced in London. Shakespeare showed up in London in the 1580s and was there for the first generation of the birth of theater in London. Theater was the most innovative and exciting art form to be born in London. As such thousands of plays were being written and acted and the public responded enthusiastically. When this type of environment develops the most talented young people flock to it and seek to find new means of artistic expression. The English theater was a new form of media and it sweep through London like a storm. By 1600 up to 60% of the population of London attended the theater. And the greatest of the geniuses to come out of this exciting time was, of course, William Shakespeare. When an art form is new it draws the people of genius to it with an opportunity to express themselves with a new art form that gives full reign of their genius. From the beginning of



1599 to the end of 1600, Shakespeare completed five plays, any one of which would be hailed as a masterpiece in anyone else's career. He finished *Much Ado about Nothing*, *Henry V*, *Julius Caesar*, *As You Like It* and capped it off with *Hamlet*.

Shakespeare, the more you read his works and the continuing flood of commentary and research, he seems to be everyone yet no one. He uncannily occupies every personality and yet to find him is an impossible task. Was he humanist or nihilist or both, was he Protestant or Catholic or both, was he a monarchist or an anarchist or both, was he happily married or estranged or both, was he heterosexual or bi-sexual or both? He is all in all, he contains everyone, you cannot get outside him and thus he remains unknown to us, while containing us all. Literarily he owes much to Ovid, to Montaigne, to Chaucer, to the Bible and to Marlowe and Kydd but then he surpasses them, contains them, encircles them as a subset of something larger. In the plays it is seek and you will find, whatever you are, is there and commentators fall into the trap of finding themselves in Shakespeare and then believing he is them and reflects their values. It is a marvelous discovery, a self fulfilling prophecy, each believing they have solved the mystery of Shakespeare's personality, of his religion, of his politics, of his sexuality. Not realizing that he goes beyond their concerns and conceits and yet contains them in an albatross, a witch's brew of powerful alchemy that is more primal, more aboriginal, more all encompassing than their own little world.

## BRAVE NEW WORLD

**A DuVersity Event – Nashville, Tennessee – October 25-8, 2018**

### **Preliminary Announcement**

*O brave new world that hath such creatures in it!*

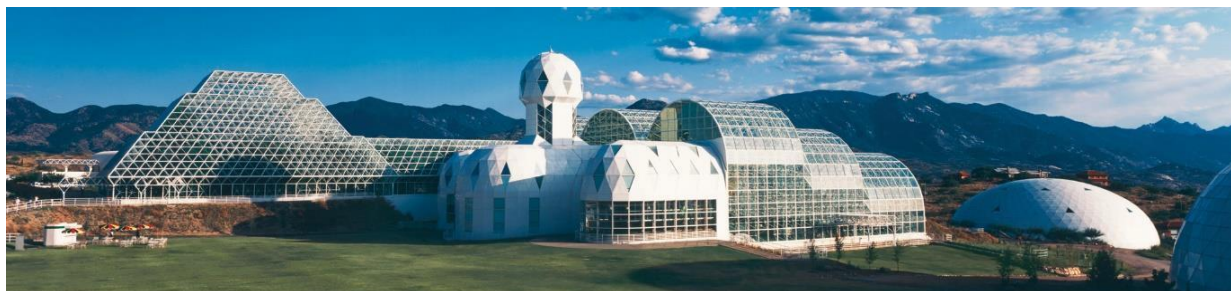


Miranda's words in Shakespeare's last great play *The Tempest* are chosen to reflect our hopes of the future: seen as a new epoch it suggests there might be a providential history that guides us on. The present crisis in democracy, fuelled by leaders who are incompetent, ignorant and short-sighted, coupled with threats of environmental changes disastrous for life and human civilisation and the instability of global capitalism suggest otherwise. And a new species of intelligence is growing in

strength – artificial intelligence - that can be regarded both as our saviour and our nemesis: is it the 'higher intelligence' that John Bennett spoke of or a false idol?

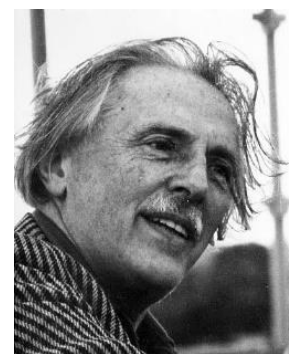
Our seminar is to take a look at our *experience* of these times and what people are making of them and in previous periods of crisis. One of the tools we will use is the *social dreaming matrix* devised by the late Gordon Lawrence. You can see Anthony Blake in conversation with him at <https://www.youtube.com/watch?v=geyZSvfShKo>. The dreaming matrix was brought into the canon of DuVersity methods more than a decade ago.

Presentations will include the Total Systems Science of Biosphere 2 delivered by Mark Nelson, one of the pioneer biospherians who spent two years in a self-sustaining closed (materially) system. His book *Pushing Our Limits – insights from Biosphere 2* is recently published (see in this issue).



We will also have presentations on self-organisation in business and the portrayal of Providence in Shakespeare's plays, coupled with illustrative performances.

Anthony Blake will lead a discussion into the historical ideas of John Bennett, especially his view that we live at the beginning of a new *synergic* epoch. This will range into a vista of *prophetic intelligence*, one that will embrace the role of dreaming.



Music and dance will play an essential part in our process and we hope to involve participants in dramatic performance. As far as we can, we will bring modern technology into our experience - such as virtual reality – and illustrate what is known as *techgnosis* (a term used by writer Eric Davies) – the way technology echoes the occult.

## Events in 2019



The DuVersity plans to mount three events next year. The first of these will mark a new venture, the study of *Sacred Images*, a subject that John Bennett considered of foremost importance for our understanding of religion and transformation. This will take us into the deep processes of visualisation but also into the power of the Word, or Logos.

The second will be a sequel to the 2018 seminar on the Language of Gesture – to be called simply *Gesture 2* – and aims to go more deeply into the universality of gesture and the structure of the will. We plan to make this an innovative event with participants involved in the creation of dances and finding connections between Gurdjieff's movements and the pioneering work of Rudolf

Laban and Rudolf Steiner. It will highlight the nature of Christianity as supremely a language of gesture rather than meditation.

The third event, whose title is not yet decided, will involve us in the nature of *understanding*, exploring and questioning the ideas and methods of Gurdjieff and Bennett. There will be a big emphasis on dialogue.

## ON READING

### Out of "An Evening with Doris Lessing" Winter 1998

Goethe, at the very end of his life, said, "I have only just learned how to read." He was a very old man and one of the great intellects of Europe, a great poet, so it is unlikely that he meant he had only learned how to use the ABC or put sentences together. He said he'd only just learned to read and what did he mean? Here, in his diary, is a description of what I think he meant and what I think reading should be, and it's not how we teach it. He says—and I have to say the prose is a bit cluttered, but I don't think that can be Goethe's fault:

"Hence it is everyone's duty to inquire into what is internal and peculiar in a book which particularly interests us, and at the same time above all things, to weigh in what relation it stands to our own inner nature and how far by that vitality our own is excited and made fruitful. On the other hand, everything that is external, that is ineffective with respect to ourselves, or subject to a doubt, is to be consigned over to criticism, which, even if it should be able to dislocate and dismember the whole, would never succeed in depriving us of the only ground to which we hold fast, nor even perplexing us for a moment with respect to our once formed confidence."

I need to repeat that phrase, "What is internal and peculiar in a book which interests us and at the same time above all things, to weigh in what relation it stands to our own inner nature and how far by that vitality our own is excited and made fruitful." Now that seems to me what reading should be and what should be taught to children. What Goethe meant was that you should not bring your own agendas to a book. You should not be looking for your political messages, your own ideas. On the contrary, you should be rather passive. You should allow no barrier between yourself and what the author is saying. It should be a kind of transparency. Now this in fact is rather hard to achieve because our minds are always full of some agenda or other, and it's very hard not to put that into the book.

### Out of "A History of Reading, by Alberto Manguel"

Cf. Goethe (quoted in Umberto Eco, *The Limits of Interpretation* [Bloomington & Indianapolis, 1990]):

"Symbolism transforms the experience into an idea and an idea into an image, so that the idea expressed through the image remains always active and unattainable and, even though expressed in all languages, remains inexpressible. Allegory transforms experience into a concept and a concept in an image, but so that the concept remains always defined and expressible by the image."

Throughout his life, Kafka read with the feeling that he lacked the experience and knowledge necessary to achieve even the beginning of an understanding.

According to Kafka's friend and biographer, Max Brod, religious teaching at the gymnasium was very poor. Since the Jewish students outnumbered the Protestants and Catholics, they were the ones who remained in the classroom to be taken through a digest of Jewish history in German and the recitation of prayers in Hebrew, a language of which most of them knew nothing. Only later did

Kafka discover in his own notions of reading a common ground with the ancient Talmudists, for whom the Bible encoded a multiplicity of meanings whose continuous pursuit was the purpose of our voyage on earth. "One reads in order to ask questions," Kafka once told a friend.

According to the Midrash — a collection of scholarly investigations into the possible meanings of the sacred texts — the Torah that God gave Moses on Mount Sinai was both a written text and an oral gloss. During the forty days Moses spent in the wilderness before returning to his people, he read the written word during the day and studied the oral commentary during the night. The notion of this double text — the written word and the reader's gloss — implied that the Bible allowed an ongoing revelation, based on but not limited to the Scriptures themselves. The Talmud — composed of the Mishna, a written collection of so-called oral laws supplementing the central five books of the Old Testament or Pentateuch, and the Gemara, its elaboration in the form of a debate — was developed to preserve the diverse layers of reading over many hundreds of years, from the fifth and sixth centuries (in Palestine and Babylonia, respectively) to modern times, when the standard scholarly edition of the Talmud was produced in Vilna in the late nineteenth century.

Two different ways of reading the Bible developed among Jewish scholars in the sixteenth century. One, centred around the Sephardic schools of Spain and North Africa, preferred to summarize the contents of a passage with little discussion of the details that composed it, concentrating on the literal and grammatical sense. The other, in the Ashkenazi schools based largely in France, Poland and the Germanic countries, analysed every line and every word, searching for every possible sense. Kafka belonged to this latter tradition.

Since the purpose of the Ashkenazi Talmudic scholar was to explore and elucidate the text on every conceivable level of meaning, and to comment on the commentaries all the way back to the original text, Talmudic literature developed into self-regenerating texts that unfolded under



progressive readings, not superseding but rather including all previous ones. When reading, the Ashkenazi Talmudic scholar commonly made use of four simultaneous levels of meaning, different from those proposed by Dante. The four levels were encoded in the acronym PaRDeS: *Pshat* or literal sense, *Remez* or limited meaning, *Drash* or rational elaboration and *Sod* or occult, secret, mystical meaning. Therefore reading was an activity that could never be completed. Rabbi Levi Yitzhak of Berdichev, one of the great eighteenth-century Hasidic masters, was asked why the first page of each of the treatises in the Babylonian Talmud was missing, so that the reader was forced to begin on page two. "Because however many pages the studious man reads," the rabbi answered, "he must never forget that he has not yet reached the very first page."