

Appendix C – Endnotes

Endnotes to the main text of the chapters, which are collected here in this appendix, are referred to, in the main text of the chapters, in the following way: <Endnote C1\ New Paradigm>, and in this appendix, as <C1\ New Paradigm>.

C1\ New Paradigm

For a quick review of the physics used to justify this paradigm (spiritual-energetic), which I had studied during my Masters, see the American movie ‘*What the bleep do we know?*’ (Amtz & Chasse 2004). A review of the major explanatory perspectives, modern and traditional, of the nature of ‘reality’, ‘existence’, or ‘space’ within this paradigm of mind energy can be found in Tulku (1977) on pages 83-8. His own view is summarised in pages 110-114, 159-162, 283-286, 295-297, and in images on pages 183, 246 and next to title page.

C2\ The term ‘integral’

The historical background given on the website integralage.org (2000, now outdated) defined the term ‘integral’ as ‘*recapitulative*’, ‘*holonic*’, ‘*multi-perspectival*’ or ‘*aperspectival*’, as opposed to *postmodern relativism*, which ‘devalues all perspectives...except of course [one's] own’. Other, related terms are ‘(w)holistic’, global and ‘unitive’, but these are mostly a form of complex synthesis. Elgin (1997, p. 1, note 89, and bibliography), traces ‘what has been called an “*integral culture*”, [...] an idea that has been discussed... for more than 50 years’, to authors such as Pitirim Sorokin, Jean Gebser, Sri Aurobindo, Paul Ray. Currently, the foremost theorist of the integral paradigm is the philosopher Ken Wilber. The application as a research methodology – ‘Integral Inquiry’ – is expounded by William Braud (1998 chapter 3, summarised pp.256-8 – see <Extract F19\ Integral Inquiry (summary)>). One of its aims is to counter the tendency, in human sciences, to reject objectivity, and with it, intellectual and logical rigour, to the sole benefit of subjectivity and spirituality. Instead it synthesises them as multi- ‘complements’ (‘synthesis’ traditionally means 2-‘complements’).

C3\ Special experiences and the unexplained

- Unusual or special experiences are described by terms such as spiritual experience (Hart, Nelson & Puhakka 1997, Krippner 2000), insight, paranormal or parapsychological (Tart 1969, 1999), anomalous (PEAR 2002), synchronicity (Jung, 1973), transcendent, transpersonal, 'Exceptional Human Experiences' or 'Exceptional Experiences' (White 1995 & 1998), which transform one's life or not. Many of these names

'have multiple connotations and semantic baggage that are often at odds with the scientific process, but they are nevertheless in common use.' They describe [what is] 'beyond the limits of ordinary experience, of the physical world. The scientific body of precisely observed factual data about the world, and good theories that make sense of them, is useful, but constitutes a cultural heritage sociologists called *scientism*, when they realised that many scientists unthinkingly accepted many scientific *theories* as simple, unquestioned *Truths*, just like believers in any "ism". [...] This is a significant distorting factor, and these ['*Taste*'] Archives are an online journal performing the essential scientific function of full and honest communication of data in this badly neglected area.' (Summarised from Tart 1999.)

Tart and White established two different online databases to collect self-reports, and Tart advocates 'state specific science' to study these edges of normal reality, that is, with the scientist-observer being in the 'state' that is relevant to the altered states of consciousness being studied. The unusual experiences of scientists are rarely mentioned in research reports, and yet are a source of great interest to philosophers of science, for their role in innovation. Several scientists advocate for their being taken into account: Tart (1972, 1995), Krippner (2000a), and White (1998), who writes: 'All types of anomalous (out of the ordinary) experiences... do not fit into today's scientific theory, and our culture typically does not have a way to understand and deal with them.'

- Experience and events can also be empirical and yet unexplained (eg spontaneous healing Weil 1997), or the explanation may be controversial. This situation is widespread in medicine, particularly, for example, for small pain shifts from left to right or vice versa, bipolar patterns, and for the 'not well understood' or 'unknown' causes of many illnesses, or of the 'extremely healthy child'. These tend to be disregarded in both the clinical situation

and the literature (except the most specialised medical disciplines, whose knowledge is not accessed by most doctors and patients). Limits and anomalies are usually understood in terms of strikingly unusual phenomena, but they can also be found, with less intensity or no recognised pattern, in many little facts of daily life, which we tend to routinely ignore. For example, we value or devalue the sense of oscillating or of ‘stop-and-go’, and behavioural crises, blaming them on the individual (eg ‘midlife crises’, or in archaic frameworks the ‘dangerous’ nature attributed to the menstruating woman) or attributing them to some form of spiritedness. We also attribute them to various kinds of ‘not-self’ entities, whether spiritual, psychic, or collective (eg mob behaviour). Some we consider just luck (eg the child ‘full of energy’, or the ‘extremely healthy’ child – I was one–).

- In my research project, it is anything unusual or unexplained that is recorded, from prosaic small behaviours of daily life, mental (eg cognitive, perceptual) or physical (eg internal sensations or bodily behaviour) to more spiritual kinds of experience, to induced phenomena such as ‘spontaneous yoga’ and ‘nexial resonance’ (see <C8\ Spontaneous yoga> and <C9\ Nexial resonance>), to unexplained events, and to very subtle aspects of health that are not described in the medical literature (eg see <Extract F11\ Red>). For example, the gestures and postures connected with low blood pressure, such as crossing arms and legs or leaning, are psychologised and interpreted as ‘resistance’, or physicalised as ‘neurally mediated hypotension’, other related aspects being ignored (eg a chronic general low mood, a sense that being alive requires chronic effort, social marginalisation...).

C4\ Topology

What is in a name

Topology is defined in several different ways. As I first discovered it, topology is a discipline of *geometry* used in General Relativity physics, and the animations found in this discipline fit best the present work (some are included in the CD). Topology was originally known as '*geometria situs*', and this inspired part of the title of this thesis: ‘nexial’-topology is a *global* ‘*situation* modelling’ method. It took on a new name, '*analysis situs*', as analytical geometry was used to develop it into a descriptive tool to represent geometric

distortion. In the nineteenth and early twentieth centuries, it became the classic, *geometric* form of topology. The most common contemporary interpretation is understood, instead, as ‘*mathematical*’ or called ‘general topology’ (see second part of this section). This technique *could not* formalise what ‘native gauging’ can apprehend, and takes first-order ‘deployment’ as axiomatic.

The classic form topology manipulates ‘metric’ figures (measured), and could be termed ‘geometric topology’ (the option I chose in this thesis). It is this form that could help ‘formalise’ mathematically what I dubbed ‘nexial-topology’ and ‘native gauging’.

Geometric topology is a science of imaging the properties of *topos* (place), of shapes, figures, and forms *in general*, under ‘smooth’ deformation (no surface break). One popular name for topology is ‘rubber sheet geometry’. This is most useful to deal with phenomena at limits between ‘inside-outside’ or changes pushed to ‘the edge’ (the term ‘boundary’ fits both) – surface phenomena. An explanation of ‘topology for toddlers’ (Britton 2006) illustrates the ‘rubber sheet geometry’:

‘A simple trick illustrates topology: taking off a vest without taking off a coat, since (topological[ly]) the vest is outside the coat – in the sense that a paper lying on the bottom of a wastebasket is really outside the basket, not in it, since being in would require removal of a *boundary*. One puts an arm through one vesthole; pulls the coat through this vesthole until it is hanging on the other arm; then pulls the coat through that other vesthole, where it is obviously "outside”.’ (Britton 2006)



Figure 39.

Turning jacket: outside and inside are the two different values of a measure called parity

The taking off of a jacket *in reality* can be explained as manipulating boundaries in a *topologic space* rather than *real space* and this topologic space can be interpreted as a concrete, physical space, or as a ‘mathematical space’ or an ‘abstract space’ (philosophical). In this work, it is neither, and is defined as an undifferentiated ‘*global space*’ that has ‘non-local’ properties but which, in many of its expressions, affects thoroughly everyday life.

The basic and *purely geometric (animated)* form of topology that I use to formalise ‘nexial’-topology, appears to be used only as an inductive-intuitive tool by mathematicians, mathematical physicists, and possibly spiritual teachers (see <PPT2 Models collected\ slide 19> and <PPT4 Einstein\ slide 4>).

Geometric topology describes *smooth distortion* of forms, *without* tearing (no surface break), breakthrough, or hole, and the *approach* of boundary conditions, without ‘covering completely’. (‘Covering’ is an expression found in archaic texts, later deployed into notion such as veiling, robe covering the body, etc.)

Revisiting topology: contemporary topology

Contemporary topology, on the other hand, is ‘mathematical’, and seems to specialise in the opposite, as encapsulated by the following statement:

‘Absolute binary reciprocation distributes connection by unfurling projection that covers completely.’ (Tenen 2002)

Tenen’s paper is one of three examples in which the complex developments of mathematical topology are used for metaphoric description of spiritual creation and organisation, mind, sociality and spirituality: Tenen (1998), Cullinane (2002) and Dimitrov (1998). These confirmed to me that topology *could* be used to understand the archetypal notions of spiritual and archaic cultures, but also that it was not used in the human domain *but* in its complex and mathematical form.

The achievement of contemporary mathematical topology is to describe unpredictable phenomena such as the appearance or occurrence, or repetition of ‘boundary conditions’. These are critical phenomena of initiating, of periodical ‘shifts’ (explosion or collapse), of ‘tearing of the fabric of space’ (see discussion in chapter <Deployment of Perspectives>).

This is also making a 'hole' (hence chaotic and emergence notions of 'disturbance' of the nexial binding – see below)

This most common form topology, is rooted in point-set theory (eg open or closed sets, made up of elements, points, atoms, particles, etc.) and is the basis for the technical, detailed treatment of the notion of 'system' in systemic sciences. It is *calculated* rather than *measured*, makes use of statistics, probabilities, and numerical analysis. This is, I believe, what is called '*general*' topology, or a topology of 'general systems'. This is not used for nexial-topology, but the discussion of topologic deployment demonstrates that a 'system' is a fragmented or scattered understanding of the more basic notion of 'thing' rather than the 'undivided whole' that was originally meant by this term, and a generalising reformulation of concepts of body, object, subject, etc.

This highly specialised discipline is popular for the study of quantum physics, complex dynamical systems and potential/ risk. It uses complicated calculations to describe changes in spatial forms and real shapes *as time passes* – 'development' (eg the shaping and re-orienting of growth in crystals, living bodies, or cosmology, inferring growth rates of Neanderthal from tooth characteristics [Kelly in *Nature*, 29 April 2004], etc.). Numerical analysis is a sophisticated form of arithmetic (riding the calculator/computer wave, which it circularly enables). It produces *approximate* graphic representations (now taught in schools as an 'extension' of analytical geometry) of patterns or patterns of activity, and 'best-fit' models, in many specialised fields. It yields models of *discrete* 'shift' (in space, time, or timed-spaces), rather than a *continuous* model of *small* change in a topologic 'space' (classic topology).

Mathematical topology is used in physical sciences (physics, crystallography, physical paleoanthropology), and its complex developments support engineering-based theorising for sciences of complexity (eg complex dynamic systems), evolution and genetics, and computer-based imaging technology.

Eventually, the most advanced productions go straight back to *topography*, through the iconic images of ‘thick landscapes’ in theoretical models. (See references collected in <Appendix F7\ Landscapes stability>). These are generalised and called ‘*topologies*’.

These topologies – complex topographies – have uncanny similarity with archaic ‘models of the world’, which reduce and fragment a global context (eg splitting space and time from a ‘timed-space’ or ‘spirit’, dividing high and low limits of the world: skies). They are presented in this dissertation as their re-expressions, because they lead the generalisers (creators of these topologies) back to logically equivalent timeless concepts (eg ‘universe’ for ‘the world’, initiating animation) and to ‘core traditions’ based on archaic notions.

Few are those who notice, as Gould or Eliade did, the geometric similarity of the graphic models of theory or practice between various fields, and with medical and archaic models. These models are now habitually known only in linguistic form, as ‘metaphors’ in ‘myths’, or as ‘abstract concepts’ such as the ‘tree’. (See a selection of imaged models gathered in <PPT2 Models collected> from both natural and human sciences).

Primitive images such as the spring, concentric circles, or the snake, may also represent developments of an unfolding situation, or may figure a chaotic or critical event and describe creative or destructive ‘unfolding-enfolding’ (or refolding, for example in proteins, the ‘snakes going back into its hole’, or the eschatologic ‘end’ folding-in destruction).

The formal mathematical reConstructions of space-time and ‘patterns’ are the basis *only* for ‘advanced’ notions such as ‘redeploying’ and ‘redeploying again’, or ‘system’ (discussed in chapter <Development of perspectives>, and understood as surface/boundary phenomena in ‘nexial-topology’).

Australian Aboriginal symbols are known to often represent the conformation, configuration or topography of the land and its geography, and to give them meaning related to physical survival. This ‘flat’ geography of surface also describes global meaning, human transformations, through symbolic analogy. ‘Advanced’ topologies are very prone to recreating ancient perspectives and cosmogonies related to survival, but that of the mind or

‘soul’. Topography is to space and ‘the land’ what mathematical topology is to timed-spaces and self-world conventionalisation.

Classic ‘topology’: The dimensional orders of topology

As a highly abstract form of *geometry*, classic topology is also conventional, but in a different way. It images the properties of *topos*, a ‘place’ in the ‘spatial’ reality of the geometer, or in an abstract mathematical ‘space’. – That is, it describes properties of shapes *in general*, those of *generic* figures, and forms (hence its usefulness for the present work). The fourth dimension of such a space is not the time of physical space (which gives rise of ‘many dimensions’ models of space-time), but a different logical *order*. (A ‘meta-’analysis is a ‘second order’ analysis.) To describe deformation (progressive change) of generic forms, it uses sophisticated equations that summarise fundamental properties of *geometric* ‘dimensions’ (‘logical orders’) of a ‘general field’ or ‘continuum’ compacted into a ‘topologic space’. The algebra describes a conventionalised space *under small* deformation (not large or sudden shifts – this is often forgotten currently). This dissertation first details progressive deformations of particular perspectives using the language of words and names (including those of medicine and ‘health talk’) rather than numbers and measures. Then it describes the topologic nature of the geometric properties of ‘general perspectives’, understood at states of deployment of an undefined *global* ‘place’.

The modern name, ‘topology’, betrays the denaturing of *'geometria situs'* into a knowledge reduced to surface behaviour of ‘place’ or ‘physical space’.

Most often, topology is used this way, as a complicated form of topography that ignores the idea of ‘smooth’ change, without break. This distinction is of the same order as that of ‘ball’ and ‘sphere’ in mathematics (see <C10\ Mathematical ‘ball’> below), or ‘category error’ in logic, and has dire consequences (as well as creative benefits) for our daily living.

The role of nexial topology is to discern this difference. It is not ‘mathematised’: no calculation is performed, vertices or edges are not counted (although perspectival analysis does use a numerical parameter that goes up to 6 – there is no 0 or ∞), geometric images are

not measured. The shapes are simply 'named' geometrically (eg 'circle', 'vector') or, in archaic style, named using realistic imagery such as 'churning', 'flowing river', 'arrow', or 'sea' for a field).

C5\ 'Nexus', 'nexial', and nexialism

The word 'nexialism' was coined 'by the science fiction writer A.E. Van Vogt, who invented the idea of a "Nexial Foundation" where wholistic thinkers and scientists with the skills to integrate sciences, are trained' (NIa 2005). As a result, the name 'nexus' has come to mean integrative-generalist thinking, learning, or action, and is used by three organisations (NIa 2005, NIb 2005, ION 2005) whose approach is consistent with holistic, integralist, multi-perspectivalist, general-systemic, and New Paradigm worldviews. The word 'nexus' comes from the Latin *nectere*, to tie, to bind. This developed from the Indo-European root is *ned-*, bind, tie. It developed along 3 lines of meaning:

- (1) **nod-*, net (as in network or fishing net);
- (2) the lengthened *nodo-*, giving node, nodule, and the Latin *nodus*, giving *dénouement* in French (untie, undo, as in the mathematical 'unknot');
- (3) with re-formation of the root: the Latin *nectere*, to tie, to bind, giving connect, annex, and its past participle, *nexus*.

The term has another synonym: knot. The notion of 'nexus' is thus usually understood as connection between a node, knot, or tightly bound core, focus, fulcrum, centre, or 'small whole', that is coupled with or tied, bound to a 'big whole' – a general system. The binding is understood in the form of network. A further semantic development shifts the structural notion of binding into a *process* of tying into a knot involving interaction or resonant operations, and therefore action, motion. It then serves to justify observations of influence (at a distance or not): 'Emotions are the nexus between matter and mind, going back and forth between the two, and influencing both.' (Pert 1997 p.87-189)

I began using this word, 'nexial', during my Masters, much before I ever heard of these organisations or of advanced paradigms, to represent a notion of undifferentiate understanding (habitually formulated in the literature as 'generic'): the two novels (Van

Vogt 1945, 1946) had inspired my youth. The words ‘nexus’ and ‘nexial’ are not adequate for describing the ‘native gauging’ itself, but they are appropriate to describe the parameters used in the collective topology of general perspectives. These represent the deployments of binding and degrees of freedom, those of limitation and unlimited growth, those of opening constriction or constraint and bringing extremes ‘back down’ or ‘back in’. These words are also the best I could find, before I could picture these ubiquitous notions, to represent a ‘whole’ that is not a sum of parts, not an emergent entity, nor an ‘original One’, not a system, not large or small, etc., something (not a thing) that simply is not differentiate. Of the two most generic notions I found, which serve as parameters in nexial-topology, one has a clear general vectorial form – direction, or vertical axis, or *axis mundi* –, but the other has too many names. It is what physicists call physical ‘motion’ in general; in humanities, it is related to movements ‘of life’, vital animation and spirit in various localised forms; in the combined domain, it represents activation or deactivation. I therefore used ‘nexial’ to denominate the second generic parameter related to activity, (see chapters <Many perspectives> and <Nexial-topologic deployment>) before I recently discovered the longer name ‘*primus movens*’. These definitions make ‘nexial’ an appropriate word for the description of ‘deployment’ (both unfolding and enfolding) as a ‘process’, or operational ‘change’.

C6\ Core culture, ‘secret’ traditions and Kundalini

What I call ‘core culture’ is usually known as traditions of spiritual and religion, or symbolic thinking, and takes forms that have been qualified variously, including as archetypes that seem inherent in the human mind. It is rarely taken into account in academia.

‘Secret’ and arcane traditions: These traditions developed, on one hand, experiential practices (magic, mystical, psychic), mystic (eg EE experiences) (I differentiate ‘mystical’ from ‘mystic’ according to common use in the literature of the two kinds, psychic-perceptual and cognitive-philosophical). Their experiential teachings are ‘secret’ in that they are accessible only to initiates or students willing to pledge their life to a master. I was, therefore, barred from direct access to much of this domain of practice, but could infer its

knowledge contents from texts, and its experiential contents from published ‘EEs’ and from my ‘direct’ experiences. Some of these practices aim to trigger intuitive knowledge (eg Satprakashananda 1974). The idea of ‘secret’ is habitually justified by explanations of the dangers of playing with their techniques (dangers of chaotic ‘power’ thresholds in particular – see ‘*Kundalini*’, below). As a result relying on a master, teacher, guide or director, is considered a crucial necessity to avoid life- or sanity-threatening results. These experiences are extreme (eg requiring near-death states, or release after major extremes of stress) and are the ‘core’ of religious and philosophical mysticism. American transpersonal literature has popularised in particular the psychiatric and spiritual effects of yogic *Kundalini*.

‘Sacred’ and magic traditions: These traditions also developed systems of knowledge and use geometric symbols, arcane descriptions, and cryptic vocabularies (eg alchemy, Chinese inner alchemy, gnosis, sacred geometry, etc.). These systems are very complex, require advanced discrimination or abstraction to understand them, and are so diverse that the teachings of different schools are sometimes completely opposite (this was noted by Hippocrates, see Mattock & Lyons 1968, p.1-4). The cryptic language can be very confusing when no obvious realistic (human, societal) or naturalistic (physical, material) interpretation comes to mind. Interpretation can also produce far removed derivations that have given rise to eschatologies in both Western and Eastern cultures. It is this sort of vocabulary, that is apt to be explained with nexial topology – at least the un-derived form found in the most ancient myths and in first-hand texts rather than second hand texts about the teachings of sages that start with ‘he said’. Some notions drawn from these traditions are presented through quotations and text extracts (see appendices). These knowledges are the core of ‘sacred’ power or ‘mystical’ (power of the psyche) (see also <C7\ Spiritually ‘advanced’> below). They which gave rise to all sorts of magic practices based on numbers, words, and images (symbolic or not).

The reader might notice some degree of paradox in this *exposé*: this is due to the circularity between experience (or practice) and knowledge (or explanation) in the human and scientific forms. Practice and knowledge can also be combined in martial arts, in various ways.

Symbols, complexity of knowledge, and ‘advanced’ thinking are characteristic also of what I call here ‘advanced’ sciences (eg sciences of complex dynamic systems, theoretical physics, biochemistry based on topology, etc.). I found that the fundamental symbols, and shapes of the models produced, are the same in science and spiritual traditions, hence the general term ‘core culture’, which avoids focusing on any particular perspectival preference. The images also appear, as far as the literature suggests, to be the same all over the world. The non-locality of the imagery (see <PPT4 Einstein> presentation) has been explained as ‘collective consciousness’ in the context of dreams and visions, but not for cultural artefacts or body-brain experience. Nexial-topology can model how the geometric figures develop into realistic-naturalistic imagery and realities (see <Nexial-topology deployment>).

Kundalini: Experiential reports of the activity of the Kundalini indicate the existence of major psycho-physical changes in the experiencer’s bodymind, including visions (eg Edwards 2000), psychic ‘energies’ that rise along the spine (Muktananda 2000, Krishna 1975, Muni 1993, Narby 1998), perceptual changes (Krishna 1975), and physical motions or behaviours of the body accompanied with health benefits (Muktananda 1983). These changes are sought in traditional Kundalini yoga practice, although not necessarily to their extreme (Shakti Parwha Kaur Khalsa 1996). The ‘energy’ is now considered an evolutionary drive (Krishna 1971, Sanella 1979, Greenwell 1990, Kieffer 1998). In the West, it tends to be psychologised (Johari 1987) or physicalised (Bentov 1978). Like other health changes that are ‘not well understood’, it tends to be valued negatively in Western society and so a diagnostic name has been invented for it or conditions that ‘resemble’ it: ‘Kundalini Syndrome’ (Sanella 1987 & 1979, Greyson 1993, Lukoff 1992). The combination of psychic and physical effects fits well with some mid-extremes of psychiatry and psychosomatics. The global health effect is often neglected, although Sanella describes symptoms in the big toe that recall descriptions of gout arthritis (which he does not mention). The deepest question about Kundalini remains whether it is ‘real’ (Hills 1979), physically, in the terms understood by dominant culture (physical reality confirmable by the senses). Two other, related, phenomena are the male experience of the ‘white lady’ (see <Extract F14\

Mysterious Female>), and sensations of terrible ‘burning’, that recall the biblical ‘burning’ before it became ‘hell’, and for which medicine has little to say (see <EE17\ Burning Fire>). These constitute the only descriptions I could find of one state I observe in myself (‘irritation’-driven neural damage).

C7\ Spiritually ‘advanced’

In experiential forms of spiritual practice, physical or mental, certain capacities are described as appearing only at ‘advanced’ stages. This was confirmed to me for several of them, through conversations with practitioners who described them to me from direct experience, or from their teacher’s if they do ‘not yet’ experience them themselves. Yet some of them operate in me, without my having followed consistently any particular ‘practice’, some even since childhood – I do not for myself, consider them ‘advanced’, but rather innate. For example, ‘Da Mo’s eyes’ is a way of raising focused power wholistically in Tai Chi; but is the state I am thrown in when something upsets me fundamentally, and I feel pain at the deepest of my being (for example treating a child as an ‘unfinished adult’). ‘Spontaneous yoga’ is described as a final stage of yoga (see <C8\ Spontaneous yoga> below), but operates in me when I am peaceful. ‘Shimmering’ vision, and ‘seeing’ that ‘all is One’– both happened to me, for six weeks each, after a long period of extreme social stress and provided release. The simplest and most basic (in my view) way of ‘being’ that I call ‘looking in the vague’, is described by Tulku (1976) as a an ‘advanced meditation’ achievement. May be it is, for a busy mind, or for a man, or some other conditions, but for me, it is the easiest and quickest way to ‘undo’ activation and projection (or directive operations) and allow my body to stop using up the ‘internal resources’ that are plundered to sustain a stress state or an immune ‘defence’ state. (see <EE2\ Looking in the vague>). These descriptions may be valid in many cases, or even in most cases (I cannot judge), but if they are not adequate in the local case studied in this research (my case), may be generalising them to all humans is not entirely appropriate. Many such ideas from the domain of medicine have led me to challenging accepted explanations, whether they belong to dominant frameworks or alternative ones.

C8\ Spontaneous Yoga

This is a phenomenon of induced bodily behaviour, involuntary, un-willed, un-intentional, although quite conscious. One may choose to stop the activity if necessary, but I find that the conditions (a peacefully happy bodymind and lifeworld) rarely bring this necessity. It is 'spontaneous' but not reactive or dynamically bound to any cause or trigger in particular. Basically, the body starts doing things in the same way symptoms 'happen to me'. One could say, 'the body is playing up', but the behaviours result in correcting physical and physiological problems (and by consequence mind problems), and in healing. It is not described in modern medical literature. I found only one formal description:

'When, through such willful practice the vital force is intensified, one should lift mental control over the body through the relaxation of the bodily organs and limbs. If this is done properly, the intensified vital force is released. This is Pranasfurana, in which various physical movements occur spontaneously. Thus one gains entry into spontaneous practice ['spontaneous yoga'].' (Rajarshi 1993 p.170-171, my italic emphasis)

I do associate such spontaneous behaviour with a 'disconnection' of the 'brain-central-control' (see <EE2\ Looking in the vague> and <EE5\ Ease walking>), but the description, is inverted in one major element: In my case, the absence of mental control is *not preceded* by any willful bodily or mental practice, whether short term or long term; it occurs, instead, with a *reduction*, not an increase, of activity. The phenomenon occurs when I am in a defocused state and less active than 'normal'. The term 'relaxed' does not fit because in relaxation, my body loses all tonus; here, the body has no tension (nervous-tonic) but it is not limp, it does have tonus: it holds up easily.

The most detailed description I know of the spontaneous behaviours themselves can be found in Muktananda (2000 p.97, 98, 103-4, 107-9, 111, 117, 118-9, 127, 134, 147, 258). Rajarshi and Muktananda describe quite forceful bodily motions. Mine are much more gentle, but many are similar in shape of gesture. Muktananda does not seem to have experienced some of the bodily behaviours I underwent, but these I found them described in Dao Yin (De Langre 1971, Hayashima 1997), and in Qigong (Chia & Chia 1993 p.519, 548). For this reason, I prefer to think of it as 'Dao Yin', but the term is much less known than

'yoga'. Both Rajarshi and Muktananda consider spontaneous yoga a spiritually advanced phenomenon, but this does not fit my case (see <C7\ Spiritually 'advanced'>). Medical literature only describes 'unconscious' behaviours (unconsciously intentional?) that are either automatic or compensatory, and are corrective: '

'The seemingly useless nervous habit of people who bounce and wiggle their legs while sitting actually performs the important function of moving lymph up the legs.' (Marieb & Mallatt 2003, p.586) 'The beneficial effects [for low blood pressure, orthostatic hypotension] of sitting in knee-chest position or placing one foot on a chair while standing are comparable to squatting.' (Robertson, Low & Polinsky 1996 p. 322).

Spontaneous yoga is not automatic: adopting the same posture does not produce the same habitual compensation, but different motions each time. Many physiotherapeutic techniques are derived from such spontaneous phenomena and are often called 'intuitive' by the authors of the 'healing techniques' themselves, for example: Feldenkreis (1981 'functional integration'), Garbourg (1997 'Ring muscles'), Masters (1994 'muscular micromotions'), Alexander (Brennan 1996 'Alexander technique'). Yoga itself appears to be an ancient systematisation of such spontaneous experiences, turned into a formal system of practice that is taught (to those who do not experience spontaneous yoga?). There are two difficulties with this. First, such a 'practice' is intentional, requires mind-self-control, and so brain-central-control of the body – the very thing that 'spontaneous' motions 'undo', and so 'practice' beats the hidden purpose of 'undoing', and instead, pushes this control even further. Second, a certain practice is not necessarily adequate in a particular situation for a particular individual, as the many health accidents caused by them show. The good physiotherapist or yoga teacher is able to detect that. The practice most prone to causing damage is that of Kundalini yoga. Many powerful physico-psychic experiences that make little sense to normal thinking are explained in the United States, as a 'Kundalini syndrome' (see <C6 \ Core culture>). Extreme forms of such behaviours have been described in mystics or saints, but also in some girls in the medieval period (see <Extract F4\ Syndromes of instability\ 'Green sickness and exhaustion'>). Spontaneous yoga is governed by internal needs, which cannot be completely or adequately met by practices. I have observed some of the most

gentle spontaneous behaviours in my son and hypothesise that this could be a native ability for a human body not yet normalised and activated by puberty, and lost because of our ideas-governed and survival work governed lifestyles. In my case, nervous, hormonal, and immune defence activations prevent spontaneous yoga. Their deactivation allows it. In any case, the current general drift in health in Western societies would make this phenomenon an important one to study. Especially in children, it could prevent much low-grade chronic struggle from developing into chronic inflammation, illness and acute disease. This would require to abandon the devaluation of small behaviours that appear meaningless, particularly those that are not obviously corrective. Below are some of Muktananda's descriptions, followed by Rajarshi's definition of 'spontaneous yoga'.

- 'Now in meditation, I felt bliss and also a growing energy. At the same time, the pain in my eyes, ears, and the space between my eyebrows increased.' (Muktananda 2000 p.147)
- 'The red body is the experiencer in the waking state... The individual soul in this body is represented by *a*, the first letter in *Aum*. When the Kundalini Shakti is awakened, many different movements, or *kriyas* take place in the gross body. These *kriyas* are not meaningless; they destroy sicknesses and purify the *nadis*... Usually, many different *kriyas* take place, continuing over a long period and through these experiences, one's concentration steadily increases. (Muktananda 2000 p.98)
- 'Meditation at the red stage... is meditation in the gross body. As the red stage progressed... I was losing fat without any medicines. Sometimes I could feel a force moving through nerves of my hands. [...] I couldn't understand what was working so dynamically inside me. Sometimes my neck moved so violently that it made loud cracking sounds, and I became frightened. Was it because of some wind imbalance? I had many astonishing movements like this. Sometimes my neck would roll my head around so vigorously that it would bend right below my shoulders, so that I could see my back... But because I did not understand these *kriyas*, I was always worried and afraid. Later, however, I learned that this was a hatha yogic process effected by the goddess Kundalini, in order for Her to move up through the spinal column into the *shasrara*. Sometimes as my neck rotated, my chin would get fixed in the jugular notch below the throat. This is a divine hatha yogic contraction, or lock... As this *bandha* took place, there was another movement below - my anus would be automatically drawn in and then released. [...] All these movements [physical *kriyas*] happened spontaneously; I was learning about yoga through inner inspiration. (Muktananda 2000 p.103)
- 'Sometimes my head would fall back. Sometimes, my eyes were focused on the tip of my nose, and in this position, I breathed forcefully in and out, in the style of a blacksmith's bellows. Sometimes during this movement, all the breath was expelled. Later, I learned that this was a variety of *bhastrika*, a kind of *pranayama* that eliminates stomach sickness and completely purifies the *prana*.' (Muktananda 2000 p.103-4)
- 'My breath was expelled and my stomach drawn in, so that a small pit was formed. It felt as if air were being drawn up from the region below my navel. This *kriya* is called the *uddiyana bandha* and is given much importance in the hatha yoga texts. It is even said in these texts that one can conquer death by it. It purifies the *prana* and the *nadis*. When the *nadis* are purified, the gastric fire begins to blaze, and when the *prana* is purified, the mind stops wandering and becomes stable.' (Muktananda 2000 p.119)

A similar description exists in Qigong, called 'Empty Yin Force breath'. Also compare to:

- '1st dying' - 'not dying a second time' thanks to *asuniti* (conducted breath/ life/ vitality) (Miller 1974 p.144-45)

- 'When a sadhaka sits in the lotus posture and masters the prana through this position, he acquires the capacity to stabilize himself in the thought-free state.' (Muktananda 2000 p.118-9)
- 'Now I began to roar like a lion. My tongue came right out of my mouth. I went on roaring for forty-five minutes.' (Muktananda 2000 p.111) Compare to biblical stories of 'the lioness', and to war rituals in Pacific Ocean culture.
- 'Strong Prana is an asset for attaining success in spontaneous practice. Hence willful practice is very important for beginners. Pranopasana and Pranavidya are Sanskrit terms used for the spontaneous practice of Yoga, in which the vital force of Prana plays the key role. Before beginning such spontaneous practice, one should cultivate the intensifying of the vital force... The next step is the release of the vital force.... The third step is the raising of the vital force... along the path of the central subtle channel (Sushumna). The fourth step is the stabilization or conquering of the vital force in the frontal region. The fifth and final step is that of annihilation or dissolution of the Prana. Strong vital force is a must for an aspirant who intends to take up the spontaneous practice of yoga. Weak vital force cannot take one very far on the path. In order to strengthen the vital force one should... and practice willfully the Yogic exercises. When, through such willful practice the vital force is intensified, one should lift mental control over the body through the relaxation of the bodily organs and limbs. If this is done properly, the intensified vital force is released. This is Pranasfurana, in which various physical movements occur spontaneously. Thus one gains entry into spontaneous practice.' [...] 'Any of the following manifestations may spontaneously occur in an aspirant's body when the vital force is released. Performing various special Yogic gestures with hands and fingers. Leaning forward, backward, or sideways. Rocking or swaying in a circular manner from the wasit, or stretching and twisting the body. Shaking of the body or jerking of the limbs. Rolling on the floor. Spinning around on the buttocks while in a sitting position. Crying or laughing. Emitting meaningless sounds from the mouth. Singing or chanting holy Mantras. Getting up and beginning to dance. 'The above list of manifestations is only illustrative and not exhaustive. In fact, countless manifestations occur as a result of the release of the vital force. Moreover, apart from the gross physical manifestations, certain subtle processes are also experienced as mentioned below. Visualizing the inner light and various colours with closed eyes. Visualizing various angelic or demonic forms or fierce animals through the inner vision. Visualizing pleasant, frightful, or miraculous dreams during the relaxation caused by the release of the vital force. All these manifestations being of a subtle nature, are not visible to the external eyes but are perceived through the inner vision. In the initial stages the gross manifestations may appear to be more interesting, but as a matter of fact, the subtle experiences are more important for attaining the higher spiritual levels.' (Rajarshi 1993 p.170-171)

C9\ 'Nexial resonance'

Dynamics and resonance are the terms most often used to discuss 'fundamental' reality(ies) in 'advanced' explanations, whether human (eg H-duality and polarisation), or scientific (eg Sc-chaotic emergence, stochastic resonance, or a combination such as a quantic jump). What these words describe arises from the fundamental parameters (see chapters <Many perspectives> & <Nexial-topologic deployment>) that thinkers of all kinds come to consider fundamental to 'reality'. These parameters constitute the basis for the explanatory and experiential frameworks from which our cultures and civilisation derive. They create a world of interactions and connections, both splitting and binding. Paradoxically, they are used in spiritual *explanations* that aim to deconstruct both binding and division *experientially*, and in

the strategies that people use to seek freedom from both through certain special states. Dynamics and resonance, or duality and polarisation, are used in research attempts at explaining the paranormal and anomalies, yet ‘a full-fledged theoretical framework for the description of mind-matter systems is not available’ (Atmanspacher & Jahn 2003) The idea of resonance is an ancient one: in Chinese tradition (‘Kuan Yin’, Le Blanc 1985), Indian (praise song), and Western (the biblical Word). It is usually interpreted in terms of connection, interference, sound or shape. It is also at the root of some very negative archaic interpretations (eg behaviour getting out of hand, curses and jinx, the archaic fear of the menstruating woman).

The New Age view that ‘all is inter-connected’, and that the cosmos or universe is ‘resonant’ is a ‘turned-around’ notion, compared to what I call ‘Nexial Resonance’. Resonance happens both ‘within’ the self and body and ‘without’ it (‘in the world’, in ‘the environment’), and spirals-up’ out of control: into instability, or even ‘all hell breaks loose’. This manifests, in my lifeworld, into health crises, ‘brain storms’, social and economic emergencies, blown light bulbs, machine malfunction or breakdown (eg car motor, fridge, computer...), but the phenomena cannot be called ‘mind-matter effects’ because there is no intentionality, and because the effects modify the entire lifeworld, in any of its aspects. Repeating the ‘pushing’ (activation or direction) results in ‘endless’ states, damage, and ‘wasting’ (see *Conclusions*).

C10\ Mathematical ‘ball’ versus sphere

Some geometric distinctions concerning the words ‘sphere’ and ‘ball’ are source of much confusion in the use of topology:

‘Then n-ball, denoted \mathbb{B}^n , is the interior of a sphere \mathbb{S}^{n-1} , and sometimes also called the n-disk. (Although physicists often use the term "[sphere](#)" to mean the solid ball, mathematicians definitely do not!) The equation for the surface area of the n-dimensional unit hypersphere \mathbb{S}^n gives the recurrence relation... ‘ (Weisstein 2006)

There is a similar distinction between the inside curved surface of a bubble (concave), and its outside surface (convex). This surface is called a sphere. The union of this spherical surface and its interior ‘mass’ (a ‘ball’), is often called a ‘solid sphere’. In common usage, *however*,

the word *sphere* is used for both (summarised from Weisstein 2006). These definitions have deep implications for nexial-topology, for the use of topology (issue of ‘smooth’ deformation, or distortion without ‘tearing’) and are related to the basic understanding of intervals (see chapter <Nexial-topologic deployment>).

C11\ Non-algorithmic, non-linguistic, non-imagistic apprehension of ‘likeness’

Nexial-topologic imaging in its non-deployed form, can be qualified through ‘negative’ definitions (of what it is not) in a number of ways that demonstrate the limitation that words, numbers and images impose on apprehending how a situation ‘presents’, and to explain how conventions produce only RePresentations. Nexial-topology is not naturalistic or realistic, algorithmic or linguistic, and in Nersessian’s terms (2002), it is not ‘imagistic’ or ‘picture-like’. It is not quite ‘cognition’ either because it is not brain-based and related to sensory perception or activated emotions, nor is it ‘pure perception’ or ‘absolute objectivity’. It is not ruled by logics of reason, although it is far from lacking consistency, meaning or good sense. It models cohesion or integrity without circular self-consistency: it shows ‘being on track’ (which archaic thinking formulates as ‘straight’, and antiquity thinking as ‘upright’, and since then we use a derived word: ‘right’). The imaging can be called neither concrete nor abstract, neither physical nor mental, but it is very practical for the health of the body, lifeworld, and the collective ‘physical space of humans’, and yet it cannot fit the term ‘pragmatic’, nor any valuation. In its deployed form, nexial-topology makes use of flat (projective?) geometries to split ‘aspects’ as generic or modal, but it is not limited to reduced or split- schemas or symbol. It does not make use of hyperbolic geometries and their topographic reductions, landscapes.

Some rare mathematical physicists such as Roger Penrose and Steve Hawking, philosophers such as Spinoza, and mystics (eg Ou Wen Wei 1999 – see <PPT2 Models collected>), appear to use a source of knowing that is obscure to most. I seem to understand their images intuitively, with much more ease than most conventionalised complex works (which require much learning and analysis on my part). This suggests that they may be using the intuitive-

instinctive or ‘native’ form of nexial-topology to consciously ‘deploy’ it and develop models and theories. The closest descriptions I could find to ‘what it is like’ concern such thinkers: Henri Poincaré ‘never evokes a concrete image, yet you soon perceive that the more abstract entities are to him like living creatures’ (Poincaré quotations). A movie on Hawking showed Penrose playing, on a board in the park, with images that were meaningful to me, and a television show showed images of the ‘mysterious’ kind that Hawking is said to ‘see in his mind’. See also the images in the <PPT4 Einstein> presentation. The imaging is not a ‘creature’ or ‘entity’ nor is it abstract but is how ‘being aware, knowing, alive, and acting’ are ‘presenting’ the situation, or ‘showing-living’ a ‘likeness’ of it. The following extracts are aimed to demonstrate that nexial-topology fills a gap in our understanding:

- ‘The fact that there is some definable limit to the human inventory of “abstract” signs irrespective of culture would be an avenue well worth pursuing. It may imply that there is some cognitive mechanism which lies behind the generation of the visual form of such signs, behind the diverse meanings which the signs impart in various cultural settings.’ (Rudgley 1999 p.79)
 - ‘Embracing modelling practices as “methods” of conceptual change in science requires expanding... [to] forms [...] which cannot be reduced to an algorithm in application...’ (Nersessian, 2002 p.135)
- ‘In model-based reasoning, that the internal representations are iconic does not mean that they need to be picture like in format at all, but can be highly schematic... The conflation of mental imagery with pictures-in-the-head stems from the fact that we presently lack an adequate means for expressing the notion of a representational format that is neither picture-like nor linguistic.’ (Nersessian, 2002 p.140)
- ‘Is sensory experience fixed and neutral? Are theories simply man-made interpretations of given data? [...] In the absence of a developed alternative, I find it impossible to relinquish entirely that viewpoint. Yet it no longer functions effectively, and the attempts to make it do so through the introduction of a neutral language of observations now seem to me hopeless. [...] Our hope for such an eventuality still depends exclusively upon a theory of perception and of the mind.’ (Kuhn 1996 pp.126)
 - ‘No current attempt to achieve that end has yet come close to a generally applicable language of pure percepts. And those attempts that come closest... presuppose a paradigm, taken either from a current scientific theory or from some fraction of everyday discourse. And then they try to eliminate from it all non-logical and non-perceptual terms. In a few realms of discourse... [the] result is a language that – like those employed in the sciences – embodies a host of expectations about nature and fails to function the moment these expectations are violated. [...] Nelson Goodman makes exactly this point... “phenomena known to exist... possible cases...” No language thus restricted... can produce mere neutral and objective reports on “the given”.’ (Kuhn 1996 p.127)
 - ‘Alternatives to such misleading images exist,, but the unconscious hegemony of canonical iconography has generally prevented their consideration and the canonical icons have therefore continued to constrain our thinking, for pictures are such powerful guides to our theorizing. (Unconscious hegemony may sound oxymoronic, but such quiet and unobtrusive rule can be the most powerful of all. We all know, after all, that the administration of our offices is most effective when smooth operation remains unnoticed.)’ (Gould, 1995 p.66)
 - ‘It is the non-linguistic iconic dimension of these *illustrations* that [...], I want to argue, entangle[s] the reader’s mind and psyche in a whole web, [...] which cannot be seen. The apparent ‘naturalness’

of these icons needs to be dismantled if we wish to understand their impact on the common image of science.' (Hüppauf 2003 p.1 & 5)

- 'The gestures we use as we speak are integrally connected to both our speech and our thought processes. [In] this new scientific direction... [the] method is the comparison of matched gestures, which overlap in meaning with the accompanying speech, and mismatched gestures, which either complement or conflict with the linguistic meaning... The researchers observed children explaining their answers to piagetian conservation tasks (conservation of mass, number or volume when physical appearance is altered). Some children produce mis-matched gestures,.....say that "a tall thin container has a large volume" because it's taller, but simultaneously make a gesture indicating width. These children, it turns out, are the ones who are most ready to learn about conservation, either by instruction or experimentation. [...] The contrast between matches and mis-matches turns out to be a remarkable tool. Mis-matched gestures bring in another cognitive model besides that presented in speech. However, Goldin-Meadow argues that mismatches are advantageous. Mismatched gestures allow speakers to express models that are inaccessible to speech but also give listeners access to those models. Apparently conflicting mismatches often reflect different aspects of a potentially unified larger cognitive framework. Purely gestural communication, that of deaf children becomes language like informational...becomes conventionalised. She and her co-workers are currently researching such applied issues as the need to interpret children's gestures alongside speech in legal and psychiatric questioning.' (Sweetser 2004 pp.606-607, on Golding-Meadow's work)

- 'Different kinds of representations such as linguistic, formulaic, imagistic, and analog / iconic enable different kinds of operations. (Nersessian 2002.p.135) [...]

1. Operations on [linguistic and formulaic] expressions are rule based and truth preserving if the symbols are interpreted in a consistent manner and the properties they refer to are stable in that environment. Additional operations can be defined in limited domains provided they are consistent with the constraints that hold in that domain.

2. On the other hand, analog models, diagrams and imagistic representations are interpreted as representing demonstratively. The relationship between this kind of representation, which I will call "iconic", and what it represents is "similarity" or "goodness of fit". Iconic representations are similar in degrees and aspects to what they represent, and are thus evaluated as accurate or inaccurate. Operations on iconic representations involve transformations of the representations that change their properties and relations in ways consistent with the constraints of the domain... [which] can be implicit... [and they] enable simulations in which the model behaves in accord with constraints that need not be stated explicitly during this process.' (op. cit..p.135)

'My analysis of model-based reasoning has required adopting a... hypothesis: that in certain problem-solving tasks human reason by constructing an internal iconic model... that... can be manipulated through simulation... The task is made easier when the physical [object] is in form of the reasoner acting to support the structure in imagination. [...] – revision and evaluation are crucial components of model-based reasoning. In the evaluation process, a major criterion is goodness of fit to the constraints of the target phenomena, but success can also include such factors as enabling the generation of a viable mathematical representation that can push the science along while other details... are still to be worked out... [...] Concept formation and change is a process of generating new and modifying existing, constraints. This is accomplished through iteratively constructing models embodying specific constraints...' (op. cit. p.137)

'Other research indicates that people use various kinds of knowledge of physical situations in imaginary simulations.' (op. cit. p.140)

- 'Various anthropologists have created phrases to describe this mythic dimension of time: ... "pre-time"... "pre-temporal time"... "time that is not time at all"...and he concludes, 'Taking a loose, general consensus, then, we can view myths as having ... their own dimension of time – at once ancient and present [...] People from any culture, modern or traditional, who experience altered states of consciousness can encounter this mythic time, Great Time, in which a sense of ... timelessness... they can "look back to the very beginning" and go "where the world is born". [...] By using the Dreaming, [James] Cowan argues, the Aborigines [of Australia] were able to find in topographical features a 'profoundly symbolic language'... a topographic story elicited from a given landscape by a tribal member is not a 'just-so' tale but a demonstration of mythic data.' [...]

Dreaming is 'not a divine place... but a return to the source', whose meaning encompasses dreaming as a 'share of the secret myths... of *the old* or eternal *dreamtime*' but can also be 'summed up in the long-past time when [ancestors] introduced the tribal culture...In 1935, Levy-Bruhl acknowledged that "the mytic world and dreams have some important principle in common". [...] "because of some awesomeness of the surroundings, or some important incident or some hallucinogenic sound, waves waters, or wind, supplicants, any supplicants, could still "hear" a bicameral voice directly: [Jaynes says] [...] the Aborigines were able to find in topographical features a "profoundly symbolic language" [...] the land had a story to tell to mankind, a topographic story elicited from a given landscape.' (Devereux 1992)

C12\ Carson: An example of analysis based on nexial-topologic understanding of 'derivation' in language

'To sense this world of waters known to the creatures of the sea we must shed our human perceptions of length and breadth and time and place, and enter vicariously into a universe of all-pervading water. For to the sea's children nothing is so important as the fluidity of their world (Lear 1998: 4)' (Victorin-Vangerud 2003)

This passage from a 1935 text by the aquatic biologist and ecologist writer Rachel Carson, was originally called 'World of waters', and retitled 'Undersea' by editors. It pre-dates other texts titled: 'Under the sea wind' (1941, following 3 groups of animals), 'the sea around us' (1951, on oceanography), 'The edge of the sea' (1955, on patterns and rhythms of coastal shore habitats), 'Silent spring' (1962, about 'the' ocean as 'source of life'), 'The pollution of our environment' (1963). This series denotes an originally nexial-topologic approach ('waters' is an archaic term, used here for an undifferentiated world with its creatures also containing water in approximately the same proportion as the planet's surface). The language, and with it the general approach, is shifted to a physicalised 'undersea' by the editors. This orienting is also reflected in the next title, which denotes a 3-modal approach (3 groups of real living beings), with systemic boundary ('around') and a physicalised, objectified 'sea', and to a topographic and nexial mode (patterns and rhythms). Eventually, the abstract notion of 'life' emerges, with a final, covariant, concern for wasting (polluting the ocean kills creatures). The interpreter of Carson's work twists this development further, by psychologising it:

'We are geo-centric beings in our perspective' and Carson aimed to take us out of being 'landlocked' and 'understand ourselves within the household of life' (Victorin-Vangerud 2003)

Victorin uses Carson's scientific and activist work to 'bring theology down to earth, or perhaps... down to the sea' and build an ecothealogy' (ibid.). Her own words express a

topologic re-deployment that uses the vocabulary of medieval ‘inner’ landscapes but has lost grounding in the nexial-topologic undifferentiate and in the integrity of physical bodies.

‘in this short piece [‘world of waters’], Carson travelled from the coastal shallows, through the layers... down to the muddy, abysmal floor...[and showed] that the ocean is not a silent and empty void, chaotic and evil, but teeming with life, sounds, currents and communication’, the ‘life in the dark and dense “recesses of the deep” (Job 38:16).’ (ibid.)

Victorin-Vangerud then rephrases her explanation in an ‘advanced’ vocabulary that would befit modern science as well as the Old Testament:

‘She conveyed her own awe and wonder at the mystery of life... [and] held together a focus on the small, individual and particular, with the great, collective and universal.’ (ibid.)

‘The stem “eco” in the word ecology... meaning “house” or “habitation” (Paul Brooks quoted in Victorin-Vangerud 2003)

This progressive drifting deployment in perspectives is typical of the interpretation of many ideas and works in many fields, and denotes Carson’s struggle to express something that was not what others understood, right away, or eventually. The deployment of her work led her to fighting for the survival of the creatures of the watery world... and she died in 1964 of cancer and heart disease.

C13\ Etymology of ‘experience’, ‘explanation’, ‘empirical’

The following is a summary of one of my etymologic analyses.

‘ex-’: from Indo-European **eks*, away from, variant of *eghs*, out.

‘**Experience**’: from Latin *experiri*, to try, learn by trying,
 from Indo-European **per-yo*:
per⁻³, to risk, try, lead over, press forward,
 and *yo*- verbal suffix marking present tense

Compare:

per⁻¹, through, forward [nexial meaning: ‘going’, moving, passing through a ‘sky’ functional boundary]
 [imaging: tunnel, drilling through, twisting through]

per⁻², pass over, lead [topographic meaning: directional passing-over to the other side of structural boundary]
 [imaging: arrow, arrow head]

per⁻³, to ‘press forward’, ‘lead over’, risk, try [nexial-topographic meaning: risky]
 [topographic imaging: push], [nexial sensation: pressure]

‘EXPERIENCE’ represents a meaningful sensation: ‘under pressure’ or ‘peril’, interpreted as a strategy of risky ‘going out’, ex-traction, or ‘push-through’ (which nexial-topology can

model). This is translated into chronic adaptive learning and repeated trial & error.

‘Explanation’: from Latin *planus*, flat, level, even, plain, clear
 from Indo-European **pla-no*, suffixed form of *pelā-²*, flat, to spread
-no, suffix forming adjectives [shaping properties]

Compare:

pelā-¹, to fill [nexial meaning: make full, one, even]
 (derivatives: abundance, multitude) [imaging: ball]
pelā-², flat, to spread [topographic meaning: spreading flat]
 (derivatives: field, floor, flat land, palm of hand, -plasty)
 [imaging: surface, membrane, FlatLand]
pelā-³, fortified high place, citadel [nexial-topographic meaning: rising fortifies]
 [topographic imaging: mountain, ‘high place’]
 [nexial sensation: strong, fortified]

From the nexial-topologic viewpoint, ‘EXPERIENCE’ means pushing under pressure to direct, and risks the vicious-virtuous cycles of *adaptive learning by the hard work of repeated trial & error* – the harder way to live. ‘EXPLANATION’ means fortifying to flatten out, even-out difficulty, and is paid for by the difficulties of spelling out explanations in detail, according collectively accepted standards and convention, and gaining acceptance for the choices or decisions – the hard way to know what to do. A correlate is that ‘self-expression’ and expressing new paradigms, in science or humanities, belong to the same realm of drifting topologic projection: they make daily life living harder, although they have a useful power at helping us adapting to extremes and emergencies.

‘EXPLANATION’ represents a sensation: ‘fortified’, interpreted nexial-topographically as a tactic of ‘filling’ like a sphere (rather than a ‘ball’), or of ‘pushing’ or ‘raising’, to even-out, flatten out irregularity or smoothen instability. This is translated into detailing spatially (geographically) the workings of acutely timed-events – critical phenomena.

C 14/ Study of the I Ching trigrams and Elements

The 4 of directions in the Earth model is here doubled by *mathematical* combination of 2 and 3, producing 8 trigrams that can be matched to sets of *complex* correspondences. The meta-correspondences are: cloud (water, abyss, trigram *K’an*) & lake (*Tui*) [Water], heaven (also sky, *Ch’ien*), & earth (*Kun*) [Earth/sky, the Sun in later ‘onescape’ frameworks], thunder (also wood, *Chên*) & lightning (light, fire, *Li*) [Fire], wind (also wood, trigram *Sun*) & mountain (*Kên*) [Air/Wind]. [Wilhelm’s transliteration, 1989, p. 357]. The complex and simplifying ‘meta’-thinking behind this is visible in the fact that there are two ‘wood’

attributions in Wilhelm's translation (to *Chên* and *Sun*), and 'lake' (*Tui*) also corresponds to the uniquely Chinese element 'metal'. In a child's book, these 8 trigrams are given in a naturalistic form based on Western 4 Elements, as: water (*K'an*) & marsh (*Tui*), the sun (*Ch'ien*) & earth (*Kun*), thunder (*Chên*) & fire (*Li*), wind (*Sun*) & mountain (*Kên*). The 4 elements wind/air-water-earth-fire(or cold) usually correspond to East-West-South-North respectively. With South and Earth, usually comes the 'underworld', the 'sub-human' attribute, and the 'place' that is 'The Pit' or 'The Below'.