

Perspectival observation

Topology has various definitions. The discipline referred to, here, is a form of geometry that describes small or progressive changes of geometric shapes (see <Endnote C4\ topology>); most readers will not be familiar with this field. Rendering the images, with their variations, in words (think of the texts written by the ancient Greek philosopher-mathematicians) as well as what these mean, to the specialists (mathematical topologists, users of topology and philosophers of science) takes some work. Moreover, trying to ‘explain images’ and how the varying images have ‘similarity’ (rather than being analogy or metaphor) to the issues discussed in any kind of explanation, description, and research, is a daunting task.

In producing a written explanation that is a ‘continuous series of explanations, it is equally impossible without arbitrariness to distinguish... stages’, but ‘we are forced however to start [with one of the terms] for fear that too much will obscure the research’ (Piaget 1961 p.287). The description given in chapter <Nexial-topologic deployment of perspectives> takes such a form: it describes ‘stages’ of ‘deployment’ and is also split into a series of sections. This is an artifice to present a number of properties and their manifestations in various aspects of our realities, in our varied ‘perspectives’.

Among the modal mosaic of all the parts of this dissertation, some of the latter are reviewed through maps such as analytical generalist taxonomy, and a typology of graphic theoretical models (in <Many Perspectives>). ‘Classes and species [are] necessary but... depend as much on the free choice of the classifier as on the data classified’ (Piaget 1961 p.287). The findings associated with nexial-topology are broader, and model this bias, but they are more difficult to explain in words. The format of this dissertation constitutes an attempt to represent our views in general (what I call our ‘perspectives’, on anything), through texts,

pointed quotations, images, and animations. It seems a good idea to begin the *exposé* with some clarifications about the vocabulary I use, and with the most important of the presentation: the animated imaging. We say, ‘a picture is worth a thousand words’.

In this chapter, the reader is asked to view animations, read text with images, and to perform two experiments. The aim is to provide, before launching into abstract explanations, an immediate sense of the formation and deformations of the perspectival way of viewing by investigating summarily the process of observing. How it is used to ‘frame’ both experience and explanation gives a sense of their ‘deployment’ and of the globality of the implications.

Representation and the ‘likeness’ of what ‘presents’

The meaning I attach to these images and their variations is explained, but there may be some repetition and reformulation. These are unavoidable because there is overlap between various perspectives, which are projections and representations. What nexial-topology ‘shows’ is not a rePresentation, but a similarity, a ‘likeness’ of a global situation – particularly the ecology of health, as it ‘presents’ to the understanding (a global impression, or a sense of what is ‘lived’ and ‘acted’). The entirety of the work laid out in detail in this thesis is still only a re-Presentation¹ of this ‘likeness’. It is limited, among other things, by the choices I made regarding which issues to mention, those most significant in my research (its background in particular) and for the problem of low-grade chronic illness. Importantly, however, the images used and the texts should not be considered as partial views of a ‘whole’ or of a ‘larger’ view. In chapter <Nexial-topologic deployment>, I will show that such a ‘whole’ and a ‘complete view’ representation are not equivalent to the presenting situation because they involve a topologic ‘tearing’. The interpretation of ‘partial views’ is perspectival and would make it difficult, at times, for the reader to relate the different aspects presented. The geometric shape of the iconic projections depends on the property to be conveyed. A single ‘aspect’ of reality can have several properties, and a

¹ Sometimes in this dissertation, a letter or two inside a word are set as capitals. This directs the reader’s attention to a fundamental difference between this word and another, both of which being related through etymology. Here, ‘rePresenting’ signifies that a representation involves a further deployment than a ‘presenting’ situation.

property can be displayed in many forms in various aspects of reality. For example, the images and views are not ‘parts’ that can be added up to form one big image, like a reductionist puzzle. In this statement, ‘adding’ can also be understood, in a different context, as ‘multiplying’, or ‘spreading’, and these are ‘projections’ of a nexial-topologic property of ‘swelling’. If a bubble ‘swells’ up, its surface spreads and expands (as in visible growth), the number of ‘points on the surface’ multiplies, and the ‘size of its mass’ can be considered as adding more separate parts. These ‘projections’ (geometric meaning) of the property of swelling can be formulated very differently in various, limited contexts or aspects of reality: for example, growth of a foetus, prehistoric expanding migration of humans on the face of the planet, or multiplication of our modern theories and philosophies and technological objects. Yet, they are merely ‘projections’ of a single global situation (eg how we apprehend being an ‘alive’ human on planet earth). [By ‘global’ I mean undifferentiated, not localised, rather than a spherical whole] Nor are the views and images like an integrated harmony that could be split into single harmonics which, played all together, form the harmony. Each image, or aspect explained, is just one way to show a property and its implications, in the most convenient way to make a point. Different ideas require different geometric projections out of the same situation, and that situation may be projected in different ways, geometrically, to highlight different remarks. For example, two opposed triangles symbolising a perspective on ‘origin’ and ‘end’, might be viewed, in another order of dimensionality, using nexial-topology, as two cones or as a line going through two points (figure 1). The aspects presented in this work sometimes cannot be compared, integrated, or transformed one into another, without an important loss, and that is the very reason why the nexial-topologic imaging of generalities and specifics is useful. It models how such transformations or transfers alter not just the representation but also what is being represented. This is the case for the ‘whole’ and ‘complete view’, and in particular for the ‘whole’ we call ‘body-mind’ (see also <Conclusions>).

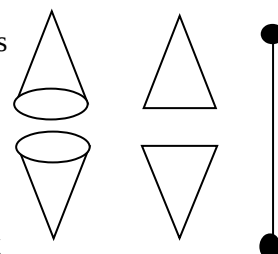


Figure 1. Dimensions of ‘origin’ and ‘end’

Animation: Trefoil

First, an animation will give a sense of the limitations of our normal ways of viewing things through perspective. The animation <1 Trefoil> is included in the accompanying CD, or the reader might prefer to view it at the website: _

<http://www.westmont.edu/~dhunter/tref/trefsm.mpg>

The point of watching this animation is to get a direct impression of the cognitive processes involved in ‘observing’ (or constructing reality in understanding or experience). This was one of the objects of the research project. The animation operates a zooming-in and zooming-out that brings the trefoil inside the box into focus and out (figure 2). There are three ways of learning from this animation.

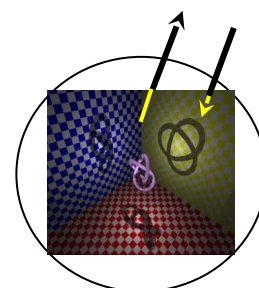


Figure 2. Observing the trefoil in a box

Three ways of viewing this animation with perspective

Objective view:

The playing of the animation is equivalent to an observer focusing on an object of observation – the observed –, and then² relaxing this focus. This corresponds to the traditional way of expressing the process of objective observation through a dual distinction: observer-observed. Only, the observer is not included in the field observed: the observer is outside the box and invisible. The ‘observing’ is equivalent to developing a line of vision.

Subjective view:

The direction of animation might be inverted. In this case, I might imagine myself to be the trefoil (eg my mind is, or my body, a ‘human instrument’ of observation), inside the box (as part of the world observed). Then, the self-body is at the ‘centre of the world’, which includes both trefoil and box. What I observe is the ‘entire field’, the ‘whole’ of reality, from my subjective viewpoint. I can see ‘all’ (including ‘myself’) ‘from within’, but what I see is biased: I am at the centre of the world, and can only see from that viewpoint. This is a common viewpoint in antiquity, when cultures and civilisations represented their own

² The term ‘then’ can be interpreted as a temporal sequence, or as two aspects of the same ‘process’. It is used, here, more often to mean a logical separation by distinguishing arbitrary ‘aspects’.

country or capital city as the origin of all that exists. In this observing ‘position’ (a term used in Neuro-Linguistic Programming), I can only *imagine* what ‘world’ another body-self might see. The sense most akin to such a process is hearing, but the heard includes what is happening inside the observer. For example, when too thick inner ear fluids start to flow again, there is a slight noise superimposed on sound, that appears to ‘come from the world’ (This is related to more dire perceptions such as tinnitus but does not fit symptom descriptions). The previous dual distinction (observer-observed) is still operating, albeit in a different way: There is a baseline sound, a ‘local noise’ that alters what I see or hear of ‘the world’. This noise is akin to the theoretical assumptions we make in research and to the baseline of experience that we consider the most ‘primary’ (for example a chronic low-grade stress we call ‘normal’ or ‘natural’ – see also <PPT1 Body\ slide 7>).

Modal view: geometric framing

If one adds up the ‘object’ or ‘human tool’ (trefoil), and the ‘process’ (in-out of the box), the totality may be considered a ‘whole’ or a ‘complete’ field of reality. Now, the process of observing consists in ‘framing’ the ‘whole’ as (a) an observed (trefoil object or subject), (b) the observer’s frame of reference (box), with a reference point or ‘centre of projection’ that is external or internal, and (c) a moving or operational process (in-out observing) that can also be apprehended as connecting (a) and (b), or binding them, or (re)integrating them.

This wholistic framing can be construed in many different ways, including as a ‘Middle’ between ‘in’ and ‘out’, or ‘up’ and ‘down’, or a ‘balance’ between ‘left’ and ‘right’ (to see this, turn the image of figure 2).

Centre of geometric projection and ‘framing

More simply, the framing is also a geometrical

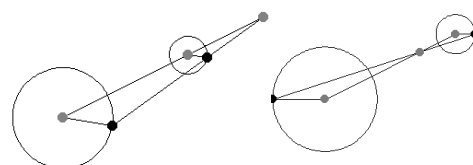


Figure 3a. External centre of projection Figure 3b. Internal centre of projection

projection. The notion of centre of projection is easy to apprehend visually. The animations <6 Homothetic centre External> (figure 3a) and <7 Homothetic centre Internal> (figure 3b) demonstrate the two Scientific-‘positions’ for observing, which correspond respectively to

the most popular Human-positions, objective and subjective positions. The more inclusive modal framing makes a different and more refined distinction than these normal ways of observation. It discerns 3 modes of ‘observing’: (a) an observed, (b) process of observation, and (c) observer. The relevance of this to the study of physical illness is expressed in Furth’s introduction to her study (medical anthropology) of medieval medicine in China:

‘Many social historians and anthropologists try to relativize post-enlightenment scientific understandings of the body without rejecting the knowability of a natural world, including a corporeal body, to which the language of health and disease refers. Thus Charles Rosenberg prefers to say that culture “frames” disease rather than “constructs” it.’ (Furth 1999 p.13)

These three types of description of ‘observing’ correspond to three fundamental modes that we use to ‘project’ geometrically both our experience and our explanations, through sensory perception and interpretation (which I call ‘sensate’ and which can give rise to complex mental imagery). These modes correspond to familiar abstract or concrete triads such as objective-subjective-direct (observation), structure-function-connection, left-right-middle (a number of examples are given in the next chapter). They are well known in mathematics (each mode gives rise to a different logic and a different set of techniques). They are also fundamentally dual (with built-in symmetry, this will be described in the next chapter). These three dual modes are the basis for all the ‘perspectives’ we derive from ‘observing’: all are dependent on the localising centrally a ‘human observer’ and on the use of the senses. Vision and hearing, our preferential sensory modalities (this is known in philosophy of science), and wholistic attention or perception, produce varied images that I named ‘general perspectives’ (see below), because such geometric projections give us ‘perspective on’ the conditions we observe outside, inside, or both. The perspectives are general because they are used for understanding any aspect of human ‘reality’, of the ‘natural world’, and of the ‘physical world’ that humans experience. They also manifest in the ‘normal’ sensations of living and of acting. These are our basic ‘ways’ to explain and experience what we tend to think is all that ‘exists’, and we differentiate them further into many diverse views and specific perspectives in particular contexts.

'Placing': localising, extension, 'deployment'

Perspectival framing can also be considered a relative 'placing' of an 'observer' (eg outside or inside, or on a beam travelling in between), of the box, and of an observed. This is a Sc-'localisation' of all 3 elements of 'observing'. The development of an objective line of vision, and its inverted version, a subjective hearing-like expansion in three dimension or H-'extension', can be viewed as a wholistic process. It can be reversed by paying attention to new aspects of reality (as done in human science), or by including all perceptions (as done with a naturalist or radical-empirical stance). This reversal, however, requires attention to detail or small clues, together with a re-integrating, and can be characterised as a tracking of special-relative aspects brought by framing or placing. The terms 'placing', 'localising', and 'extension' can be formulated as expressions of one property of 'deployment', which topology can model. Nexial-topologic deployment can model, 'show' or help to 'see' – with or without using the senses – the several ways in which 'perspective' can be derived from the 'presenting' situation. Hence, the perspectival way of 'observing' by framing is not the only way to know. If one does not distinguish or even discern 'all' the 'aspects', or does not discern 'in the first place' the 3 fundamental modes (or just 2), and if no central 'observer', thinker, self, or 'witness' is defined, then what is 'seen' is a 'global field' that is undifferentiated, without genus or species, real objects and subjects or natural 'things'. It is just the 'situation'. The images and animations used in this work are an indirect 'seeing', attempting to 'show' what the global field 'looks like'. In themselves, they therefore can only be also representations of the findings of this work. The technique used for this, topology, has not been used before in the humanities, as far as I know). This is why an intuitive apprehension of images and animations by the reader is a crucial complement to this thesis. Nexial-topology, can be understood by using topologic imaging to explain 'deployments' into 'perspectives', but the nexial-topologic apprehension itself is non-deployed, unlike this thesis, and requires the reader's 'apprehension. The dissertation only aims to suggest that the non-deployed form is a native capacity of 'gauging', and that 'nexial'-topology can model what it 'shows' (which is not deployed but 'presents'). This

native capacity can be explained through a first-order deployment, as a ‘nexial’ apprehension that does not separate the properties into perspectives (see below).

Two experiments to introduce the ‘native gauging’ or ‘nexial’ apprehension

The modal view described earlier is an integrative, framed, view that binds and connects objective and subjective views, and unifies the qualities. There is a less differentiated, way of viewing that I believe corresponds to what we habitually consider primitive, generic or lacking individuation: the ‘native gauging’ or apprehension. Instead of seeing the ‘whole’ as integrated, connected, interactive, binding, or even ‘glued’, as many current works on complex systems or special relativity do, it sees it as an undifferentiated globality (or topologic ‘field’, ‘space’, or ‘continuum’). It apprehends the global situation ‘like a ball’ in the mathematical sense: the ‘inside’ of a sphere that *has* no limiting spherical surface. (It is not ‘open’ as opposed to ‘closed’, or boundaried – see <Endnote C10\ Mathematical ‘ball’>). The word ‘nexial’ is not used in the same way as what the proponents of wholism mean by a ‘nexialist’ approach. (See <Endote C5\ Nexus, nexial and nexialism>; refer also to the remark above, concering parts or aspects and wholes). The modal, integrative, or ‘nexialist’ view is a combination and, being inclusive, produces an objective-modal-subjective set. ‘Nexial’³ apprehension replaces this modal set of observing positions, by a non-positioning way of ‘looking’ without framing or placing. The nexial view does not discern modes or positions.

In order to get a sense of what ‘nexial apprehension’ is, the reader might like to perform two little experiments. Please refer to the appendices:

<B1\ Lever experiment> (figure 4a) and

<B2\ The 3-stars experiment> (figure 4b).

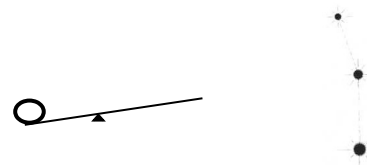


Figure 4a. Lever experiment
 Figure 4b. 3-stars experiment
 (See Appendices B1, B2)
 Lever experiment

In the ‘lever experiment’, the fulcrum of the lever works in the same way as nexial apprehension. The ‘3 stars experiment’ allows one to compare the orienting directions produced by the objective, subjective,

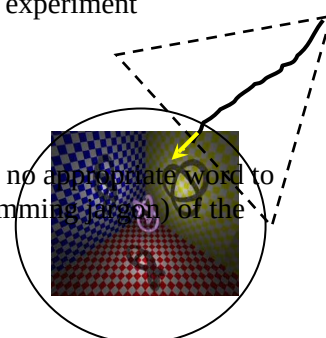


Figure 5.
 Motions of observation

³ The words ‘nexialist’ and ‘nexial’ are confusing, but I could find no appropriate word to describe the cognitive ‘position’ (I refer to Neurolinguistic programming jargon) of the ‘local observing’ in the ‘native gauging’.

and nexial modes of observing. The main characteristic is that the directions cannot be made to match. This had been a major difficulty in my early attempts at reconciling all the perspectives I found in the literature, modern and ancient, into a ‘big picture’ into some kind of less complicated and more inclusive understanding. (an attempt I eventually abandoned, shifting instead to topologic geometry). It is also a major source of dissent between academics and spiritual schools alike, as well as between people in daily life. One typical example is that ‘correspondences’ in ancient frameworks of the Elements, never completely match (a source of much confusion). The nature of these disagreements can be apprehended by using the geometry of perspectives to ‘see’ how the three modes transform into each other (see <Many perspectives> and the Power Point presentation <PPT3 Geometry of perspectives> [slides]). Using topology, as explained below, allows us to ‘place’ these modes geometrically with respect to each other and to see how deformations or distortions lead to the various sets of correspondences. The geometry of perspectival projection rests on two fundamental parameters (see <Many perspectives>, further addressed in <Nexial-topologic deployment>), which are derived from the geometric consideration of observation. They can be approached as two generic notions that are the basis of all the general models, ‘advanced’ sciences of subtle details in specific context, and arcane philosophies. They also have a rather primal meaning in the realm of the human physical being, of internal sensations (as distinguished from sensory data – see Appendix <D\ Research materials and techniques> and Appendix <E\ ‘EE’ special experiences>).

‘Primus Movers’ – a general notion of N3p-polarised activity

Vertical ‘Axis Mundi’ – a generic notion of N2d-dualised direction

In the animation <1 Trefoil>, the imaged ‘motion’ corresponds to the ‘process’ by which we observe the world. In Western culture, it is conceived as the activity of the senses from which the brain-mind ‘receives’ perceptions. In India, it is more likely to be regarded as a ‘motion of the mind’, which ‘grasps’ at or pays attention to a particular object (figure 5).

In both cases, the activity, physical or mental, is polarised. This is an expression of the general parameter symbolised by “N3p-“ (‘p’ for polar). In natural sciences, this is associated with physical movement of bodies, energies, and their related variables, and is often called ‘motion’. This can also be construed in terms of activation (priming, initiating, or ‘starting’ activity) — and deactivation (unpriming, stopping, or ending). In medicine, this is used in ‘activation’ (eg of hormones, brain-based control, or of immune system defence). In humanities, this polarised activity is often thought of as induction, tendency (a new term is ‘enaction’ in Arco [2006], a reformulation of the archaic notion of ‘Life’ or of vitalism). In general, philosophical models of reality, the activity parameter is sometimes called ‘*Primus Movers*’ – the ‘primary’ polarised activity that induces ‘life’, ‘existence’, and ‘creates’. Vitalism and animism are derived from this (Bose 1902), as are emotion, spirit, the Chinese ‘*ressort du monde*’ (Ch’i, ‘spring of the world’, ‘life energy’ or ‘breath’), and the archaic ‘churning’ of ‘the sea’ (the world). Expressed in the body, it produces the sensing or detecting of ‘signals’ and fluid motions, and the movements of the object-body as a whole or its sub-systems (eg muscles). In the context of nexial-topology, N3p- also represents harMonics (eg sounds, words, monads, holons...) and harmonies. In global or ‘nexial’ attention, it is a less sophisticated sensing of ‘noticeable activity’ (of any kind) (symbolised by “N3”). For my purpose here, “N3p-” symbolises any sort of ‘activation’ (polarised activity).

In animation <1 Trefoil>, the in-out direction of observation (eg line of vision) distinguishes observer from observed, or puts them in symmetric positions, as a pair, with respect to the edge of the framing box (figure 6). This is an example of duality (or parity, in topology), an expression of the generic parameter symbolised by “N2d-“ (‘d’ for dual), which is associated with direction. This can manifest concretely as a vectorial orientation (‘directionality’ in the jargon of the human domain) such as intent to observe or direction of the attention, targeting a goal, or direction from which a cause effects visible consequences, and other related notions. It can be also abstracted into more general, dual notions such as

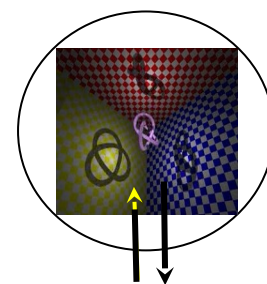


Figure 6.
Direction of attention

self-world, in as the experiment with the trefoil demonstrates. Without the duality or symmetry, it is a mere line without direction (symbolised by “N2”), an axis which, however, may *become* oriented.

A still image of animation <1 Trefoil> can be turned upside down, and the observer placed at the bottom (figure 6) or ‘below the world’ that is observed, or which seems to ‘come to existence’. In this case, the observer appears to be in a ‘primary’ position. The ‘line of sight’ then becomes a ‘vertical’ axis of ‘creation of the world’ perceived, conveniently in the same way as a human body standing straight or upright on the ground does, and significantly unlike most non-human bodies (animals). These last remarks have major implications for medical views on the health of the ‘human’ body.

Eliade (eg 1954 p.12) has found expressions of this vertical axis, in the core of culture and the artefacts of civilisation. Archaic houses were built with a central pole, and in general religion, ideas such as ‘going up to heaven’, or the tower to reach the sky or God are common. He called it by a general name, the *Axis Mundi*.

This vertical axis is ubiquitous in culture (eg the ‘up’ direction of evolution or growth), in anatomy (eg the spine, up to the head), and its reverse in medical treatment (eg entraining brain or mind control over the body, down).

In most minds, the spine constitutes this ‘vertical axis’ of the ‘body’ (the body-brain tandem).

It is a major element of medical models of the human physical being, opposing the body to the brain/mind/head, or making them complementary and a whole. The ‘spine’ is often conceived as a tube of vertebrae containing the core of the ‘activation’ property, the spinal cord, itself conceived as a ‘conduit’ for nervous impulses originating in the brain (eg neuromuscular) or ending in it (eg perceptual impulses and pain signals). These ‘common sense’ topographic notions (structural tube, functional conduit, operational nervous flow of the ‘reticular activating system’) are well suited to interpretations based on the most common form of topology, *calculated* topology. The most well-known ‘vertical axis’ in physiology is related to the activities of the H-P-A axis (Hypothalamus-Thyroid-Adrenal, sometimes in

more complicated variations that include gonads, thymus and other glands). As the limbic-hypothalamus-thyroid-adrenal axis (LHTA), it fits perfectly with the mind-governed perspective ('mind over matter', mind over body) of 'psychoneuroendocrinoimmunology' involving emotion and self. Some of the slides in <PPT1 Body> represent this pictorially. As a natural consequence, the head is viewed as a complex little tree that drives, governs or leads the entire body (or a cauliflower shape that highlights the role of the surface we call neocortex). Many metaphors for this are used in technology, politics and business. Another element of this vertical axis is mostly ignored: the cerebrospinal fluid that bathes both the spine and brain. It is only recently is becoming the object of research because of its role in immune reactions and pain. Its role at surfaces does not seem to be researched, although surface and 'film' behaviour of water is quite peculiar, and suited for topologic treatment. The vertical axis is also associated with the vagus nerve that modulates vital functions, but has been rather neglected in the past twenty years of medicine, although prehistoric 'female' perspectives on body and behaviour would relate to it. Vital functions are those interrupted or reduced in a state of stress or strain, or increased to cope or respond (hence the calming or re-enlivening action of acetylcholine is neglected to the benefit of its cognitive effects on memory). It seems little meaningful to medicine that some of the organs do not seem innervated by the autonomic system, which cannot, it seems to me, disconnect certain 'responses' by any action of the mind, will, or directive brain. Several health 'EE experiences' relevant to this discussion of the body's vertical axis are related in Appendix E <EE collected> (EE7, EE10, EE16, EE 17, EE18).

Another, related, form of the vertical axis (in the 'up' direction) exists in representations of bodily operations drawn from the core tradition, that of the 'chakras' in yoga and 'tan tiens' in Chinese Qigong (see some of the slides in <PPT1 Body>). This developed into models of stages of consciousness in medieval Chinese inner alchemy (as steps up a mountain) and Indian yoga (expanding spheres and 'rising' of Kundalini). The vertical axis is also a major element of internal sensations (eg spinal posture, projection of heat to the head) and in the

languages of the human domain (eg the integrity of being ‘upright’, or ‘standing’ one’s ground).

Expressed according to perspectives, N2d- produces patterns and ‘signs’ (including those of internal sensations), that can be represented in terms of binary information. In the context of nexial-topology, N2d- also represents ‘synMetrics’ such as symmetry, complementarity, parity, direction, and vectors. Global ‘nexial’ attention is less sophisticated and detects nexial ‘orienting’ (development of a ‘line’, irrespective of direction).

Dual polarisation: ‘primary’ conventions and ‘primitive’ apprehension

Combining the notions and motions of both parameters, for example, as pattern of activity or active patterns, or motions and directions, produces complex representations such as sensory-mental interpretations, or the computer reconstructions. Computers reconstruct 3D spaces that are directional (mathematically ‘oriented’ – see <Endnote C10\ Mathematical ‘ball’>); they are viewed on a one-sided surface. Their images are binary (N2d-bits), and use *measured* kineMatics⁴ to represent kinetic activity (N3p-). In abstraction, the two parameters produce ideas such as ‘effective causation’ (Piaget 1951) or teleology. In health, the N2d-N3p or N3p-N2d combinations (or permutations) produce the objective ‘symptoms’ (sets of signs and signals), and topographic distributions that change, become distorted, or deformed. These are related to expansion or shrinking from or to a ‘core’ (such sensations can be clearly felt, but are not a recognised as part of ‘normal experience’, although they are reflected in language).

These two parameters are the basis that is used to build or construct all our explanations, descriptions, interpretations, as well as our experiences – our perspectives (see <Many perspectives>), including sensory construction, physical sensations and ‘exceptional experiences’. They are a means for naming, measuring, or rePresenting with images, according to ‘conventions’. Conventions are the normal ways of parametrising to describe (eg spatial place, whether in a mental space or a physical one, or sequence, whether temporal or causal). N2d- and N3p- are ‘primary’, used for fundamental explanations of the existence

⁴ The capital in KineMatics implies that kinematics is a description of measured kinetics.

of the world, of things, as well as our own. In experience, they are considered 'primitive' and associated with our animal nature. For example, animal-like instinctive behaviour is 'activated'; reaction to danger is directed, even in animals. It is these constructions and conventions that I have organised into analytical 'maps' of perspectives (based on words) and geometric 'flat maps' (four are provided: figures 30, 31, 42, and 43). Such representations based on the N2d- and N3p- parameters are limited

The native apprehension of what 'presents' is not perspectival, constructed or conventionalised, and this causes a problem in validating the 'existence' of such apprehension and the 'reality' of the undifferentiated 'space' it apprehends (see <Extract F9\ Deep confusing questions>). In the particular context of health and sanity (including medicine), this means, that some propensities or tendencies a person notices, and which affect their body but also their life in general, or their 'whole world', are of a topologic nature, such as 'twisting'. This cannot be discussed in the clinical situation without differentiations and 'valuings' (scientific measures and thresholds, human evaluations of the improvement/optimisation value, etc.) that interfere with a less fragmented understanding such as the patient can obtain 'locally' (but without physical, mental or biosocial localisation). This manifests as a clash of vocabulary (the doctor translates the patient's 'primitive ill talk').

The *geometric* 'twisting' is conventionally formulated, in much of topology, as 'distortion' or 'deformation'... of something in particular, and 'disturbance' of something located (eg of digestion or brain), and this yields many human devaluations (eg a disturbed mind, behaviour or worse, a disturbed 'person' or 'personality'). The devaluations are built-in in the words, and technical evaluations imply regard to standards. Twisting may also 'manifest' as 'formation' (eg facial features that have 'charm' or of creative ideas): The valuing can be reversed, and whether it expresses damage or improvement at one order of deployment or another can be different for different people an different contexts: twisting can be expressed geometrically, as torsion (a strain) or torque (power), with a variety of projected

interpretations (eg internal emotion, external hyperactivity, central mental activity...) or 'activation' (of body or mind).

Nexial-topologic 'oriented activity'

In a more basic (or more advanced) vocabulary, oriented activity may be apprehended also as 'agitation'. The diversity of words and contexts is broad. One case is more interesting for us here, because it involves the geometry of a more global notion (less differentiated). 'Activation' implies both activity and a direction. For example one activated/directed propensity is a 'state of need' (or 'alert') – without specification of what is needed (or paid sharp attention to). This also fits well with medical notions of a body-brain physiology and biochemistry being 'activated' in a state of stress or physical strain, this independently of any causes or triggers. 'Need' orients us toward finding something to meet the need, irrespective of what this something is, of what sphere of experience it comes from (eg food, social, material or religious comfort, an idea to understand what can meet the need, moving out of a stressful situation, etc.). Irrespective of whether the activity to get this something has to be mental or physical, and whether it feels good or not, is valued socially or not, need affects all other aspects of daily life. Need 'directs' behaviour (including that of the mind) and 'drives' – a word often used for 'oriented activity'. Feeling 'affected', without any particular cause, or in 'need' due to too many causes (stress and strain), appears too complex an issue to discuss with a doctor, and agitation causes medical explanations sometimes controversial in the general population; but 'drive' can be interpreted – and treated – in a variety of ways that can conveniently be reduced or limited to a doctor's own perspective or a culture's current bias, with correlate evaluations, about suitable forms of clinical response.

The 'ease' that Williamson and Pearse (1980) find at the core of health is not oriented or directed, nor activated or induced – it is not an 'oriented activity', not a drive, has no particular purpose, target or goal.

'Activity' is not necessarily directionally oriented, and 'orientation' is not necessarily characterised by di-rectional patterns of activation or deactivation (eg immune defence, the Brownian motion that we normally understand as random or as statistical chaos, or the

spontaneous behaviours we normally consider meaningless). Undifferentiated ‘twisting’, or its absence, is a property of ‘oriented activity’ that the native gauging ‘shows’ and which can be modelled with nexial-topology. Approaching it fragmentarily through its specific manifestations in physical and mental realms limits the capacity to do something about it.

The notion of topologic ‘space’ and ‘likeness’

In this project, finding a common way to describe both physical space and experientially or perceptually ‘real’ human spaces, as well as the models underlying culture and civilised behaviours, in their general and specific manifestations, was difficult. It was resolved when I discovered topology (December 2003), through websites on physics and mathematics. I realised that my habit of drawing iconic images of the vocabularies that I encountered, and scribbling geometric figures to understand ideas or experiences, could be construed as a simple form of topology. The technical innovation is to use the convenient notion of ‘topologic space’ (or field) to describe an undifferentiated⁵ situation, *without* using the conventionalisations. The latter involve a framing bound to systemic and spatio-temporal conventions, which are different in natural and human sciences (eg compare ‘physical body’ to ‘mind embodiment’, and the ‘system’s neuro-hormonal transports’ to ‘molecules of emotions’). In daily life, we often call this undifferentiated ‘space’ or situation, a ‘place’. This nexial-topologic ‘place’ is not concrete, nowhere in particular, nor located in time (eg a person’s ‘peaceful place’ or ‘own space’). It is a non-naturalistic and non-realistic ‘meta-space’, in the jargon of humanities, but it is not abstract (as in a Platonic-style ‘pre-existence’) and an imagination (which is conventionalised). Its main benefit is that whatever properties are noticed in that ‘space’ are also at work in the naturalistic and realistic spaces projected from it. They ‘work the same way’ (activity), and ‘look like’ each other (pattern). In this sense, this ‘meta-space’ or ‘place’ is topologic (patterns of change) rather than either abstract or concrete. The naturalistically or realistically concrete expressions are ‘a likeness of’ the topologic space that is ‘in shaping’ (changing shape). Such an animated image (often pictured in gesture) ‘looks the same’, whether derived from the

⁵ A term ‘immanent’ is sometimes used in the human domain to mean ‘undifferentiated’. In physics, ‘immanent’ properties are ‘non-local’.

‘real’ or ‘natural’ spaces or from the ‘place’, but the ‘likeness’ is more than an analogy, metaphor or similarity. It is a ‘likeness’ of the ‘shaping’ (eg twisting, swelling, or ‘speeding-up’, which nexial-topology ‘shows’ (as a global moving shape).

By ‘naturalistic’, I mean physically concrete for scientific instruments or the senses and perception, and this yields analogies. By realistic, I mean mentally concrete for human experience, and this yields metaphors based on experiences of the real. Both are constructed or interpreted in the brain-mind, and analogy and metaphor are ‘similarities’. I find it easier and less limiting to use a generic term such as a ‘likeness’, which has not been given any precise definition (especially in mathematics or logic). This way, the use of specific interpretations of the words interferes less with the undifferentiated meaning conveyed. The notion of ‘likeness’ exists in ancient texts (eg non-canonical biblical writings), but the complications of Sc-naturalistic (eg materialistic) and H-realistic (eg moral) interpretation appear to be an impediment for exegesis (they introduce reification). The same problem seems to exist in physics, in which topologic properties are now exclusively associated with *physical* space or spacetime. It seems to me that the early discipline of *geometria situs*, before it became *analysis situs*, was not thus limited by spatial convention (see <Endnote C4\ Topology>).

‘Gauging’ the ‘shaping’ or ‘presenting’ situation

‘Gauging’ is a simple matter of noticing properties of ‘how the situation is shaping’ (‘shaping up’, in vernacular), considering ‘the situation’ as an undifferentiated topologic ‘space’. Its properties ‘apply’ globally to any real or natural space conventionalised out of the topologic space, or are ‘expressed’ (or ‘manifest’, ‘immanent’, global, on-local, etc.) in the conventionalised forms of reality, and they ‘arise’ from the nexial-topologic ‘space’. ‘Gauging’ the global ‘shaping’ of the situation, is very different from the conventionalised ‘valuings’ (eg measuring, naming, finding cause & effect... – see <Validity and valuing>), which are attached to *shapes* (or N2d-patterns) and *motions* (or N3p-activations). Perspectives apprehend and represent only the latter. ‘Gauging’ the global shaping means ‘seeing’ how the situation ‘presents’, rather than *rePresentatng* its patterns and activities in

various conventional spaces or worlds, which is a further logical step, a stage of 'deployment' or geometric projection. Nexial-topologic deployment models how specific perspectives and general models of 'reality' – perspectival representations – 'shape up' or develop into both a scientific and a human viewpoints (or a combined one) and concretise experience through perspective and geometric framing. The notion of 'gauging' will be addressed again, in other ways. In the following chapter <Many perspectives>, I will outline some of my early techniques for classification, and other ways of ordering the framed perspectives on medical theory, experiences of health or illness, and practices related to the body, as well as those in other areas of knowledge.