

This is a multi-media thesis with many files. For a 'site map' of their display online at UWS, please consult the section: '[Organisation of the multi-media materials in this thesis](#)', in the "Front" pages file, after the Abstract. Please, also refer to Appendix C ([Endnotes](#)) for comments on a number of generalist concepts used in this work, such as: topology in its various forms, the terms 'nexial', 'core culture' ('secret' culture), integral.

Introduction

'Why do scientists grasp the importance of visual imagery, while most humanists accept the hegemony of the word? Scholarly publication in the humanities generally degrades imagery, and in many ways. Many thick tomes have no pictures at all... Images when present, are often only "illustrative", are often collected in separate sections, divorced from textual reference and therefore subsidiary.' (Gould 1995 p.40)

'If icons are central to our thought, not peripheral frills, then the issue of alternative representation becomes fundamental to the history of changing ideas in science (and even to the quite legitimate notion of scientific progress!) How shall we draw the geometry of contingency?' (Gould 1995 p.67)

The 'geometry of contingency', together with that of necessity, were at the core of the findings in this research, and geometric images are the core of this work, rather than subsidiary or illustrative. They allow to model health phenomena and developments of theory and practice, of explanation and experience, of technological progress and the concurrent rise of periodic instabilities all at once, bypassing the contemporary tendency toward complex representations. Reporting these is best done with geometric animations, applied to a particular situation. Yet, for the general and practical implications in specialised areas to be apparent, complex textual explanations have been necessary. This dissertation is, therefore, a composite of animations, geometric images and text, involving excursions into

vastly divergent fields. It invites the reader to take a fresh look at the notion of physical health, first by gaining a general view of our explanations of it, and of the many ways of experiencing ‘feeling ill’ or ‘healthy’. Then, modelling this together with the global ecology of human soundness, sanity and safety through an imaging based on the mathematical discipline called topology, brings to view a ‘big picture’ (this expression is not quite adequate) that gives access to unusual options. (What topology means is summarised page 9 below; see also Appendix C, in the <Endnote C4\ Topology>¹.)

This research studies the *general* ‘perspectives’ and biases that characterise our explaining and experiencing, which affect perception and what we consider ‘healthy’. The study brings out implications, by focusing first on a reduced scope of ‘physical health’ in a particular situation: low-grade chronic illness. How ‘we’ construct this and ‘create’ this experience, is only a starting point for the exploration of general ideas such as ‘high/low degree’, found in all fields reviewed in this work, in various forms of theory and practice. The ‘field’ studied in this research is discussed in <Methodology\ A global field accessed locally> (p. 55).

The explanations and experiences involved in the exploratory and mapping phase of this research may be of the accepted and recognised kind, or controversial, current or ancient. Those reviewed in this research concern many fields and are approached as expressions, in these fields of general ‘perspectives’. Imaging can help to visualise how, in general, we derive these perspectives, and model their final developments and origins, as well as some consequences for the body’s health. The theoretical part of this work is supported by an experimental investigation of bodily ‘signs’ and ‘signals’ too small to be called ‘symptoms’ and of internal sensations, related to the effects of various methods for ‘getting better’. These are also linked to the progression, recurring crises, and roots of low-grade chronic illness, and phenomena deemed ‘induced’ or ‘spontaneous’ are not excluded from observation in this study. The words used to describe the usually unexpressed symptoms, sensations, or little defined ‘global notions’ may appear ‘obscure’ to the reader, because modern language

¹ In this referring notation, the broader chapter or appendix is followed by “\” and a sub-section, sometimes two. This aims to provide context while following different dimensions of thought.

either no longer formulates them or has no collectively accepted way of doing so.² Imaging brings to light areas that are commonly ignored, and which have implications for old issues in medicine, such as physical self-care, patient compliance to treatment, communication in the clinical encounter, what is ‘normal’, and what constitutes ‘improvement’. The findings involve the cultural attitudes and practices that surround the body and behaviour, in daily life and particularly in childhood.

Previous investigations into external aspects of human living, and a two-year Masters inquiry (Bouchon 1998) into mind, consciousness, spirituality, and the ‘New Paradigm’, had made it clear that postmodernist relativism and ‘New Age’ explanations of the creation of reality by human consciousness or mind projection have their limits. They may explain the diversity of our mentally and socially constructed ‘realities’, perceptions, and notions of ‘embodiment’, but clash with some philosophies of nature, of primitive simplicity and spontaneity, and with basic empirical ‘self-evidence’ of physical reality. They are inconsistent with the immediate sense that something does ‘exist’, which my mind cannot invent without logical circularity – for example my pre-existing body and its senses. A question was left open:

Do we 'create reality', as 'New Age' and 'New Paradigm' proponents put it, and if so, how and to what extent do we do that for physical space, including body?

This interest in material reality was partly motivated by the current ecological and societal crises, and partly by a mother’s concern about her son’s health, sanity, and future in this fast changing and stressful world.

The particular angle of approach – the physical body and its health – arose from a practical situation, my stress-related health breakdown and falling into chronic illness. This was diagnosed as Fibromyalgia (FM), which is also named Myalgia Encephalitis (ME, related to

² This is discussed in several sections: Confusion about concepts: <Methodology\ Problems of definition> p.32.>; ‘cryptic clues’: < Methods> p.47; ‘secret’ and arcane knowledges: <Endnote C6\ Core culture>; ‘global notions’: are introduced in <Ancient Perspectivalism>; ‘the obscure’, and meaning difficult to understand for usual frameworks: <Ancient perspectivalism\ ‘Obscure’ vocabularies>, <Appendix A – Nexial-topologic vocabulary\ Obscure words and ‘dark sayings’>, <Extracts F18 – Rules of localisation-extension in the literature> and <Extracts F5 – Gauging thinkers\ ‘Obscure’ wording of the ‘space’>.

brain swelling) and Chronic Fatigue Immuno-Dysfunction Syndrome (CFIDS or CFS). The brain and cognitive effects, and endemic brain infestation would make the word ‘encephalitis’ relevant, although my brain shrinks rather than swells, but in any case, the name ‘ME’ has been abandoned in official definitions. The multiplicity of symptoms, physiological systems affected, ‘accessory’ conditions and commonly connected diseases, and their variability, is shared by a number of other chronic syndromes such as Irritable Bowel Syndrome, Post Traumatic Stress Disorder, Metabolic Syndrome, etc. This makes the syndromes difficult to differentiate and diagnose. Yet, one distinction is clear and is related to the degree of gravity. ‘Chronic illness’ can cause medical high emergencies, organic injury, and threaten life (eg losing feet and kidney failure in diabetes, organ failure in auto-immune diseases). This expression, however, also covers ‘low-grade’ conditions classified as ‘syndrome’ rather than ‘disease’. The present work focuses on the impairments and progression of low-grade chronic syndromes – that is, those that do not threaten to soon result in final physical death. In this case, the names attributed differ according to the most visible manifestations and apparent triggering factor(s), but also with the doctor’s perspective on ‘the fundamental cause’, and best treatments: No single cause has been found and widely accepted for FM-CFIDS-ME, so it is sometimes considered multi-factorial, and many illness names correspond to related conditions (a list is collected in Appendix F4). As for most of these syndromes, the specialised literature often mentions that they are ‘not well understood’, before taking a particular causal approach (eg stress, food allergy, lifestyle, “it’s in the genes”, etc.). The most formal biomedicine even denies the existence of CFIDS altogether, partly due to the limited dominant view of it as ‘mere fatigue’, and to the lack of information on the wide range of symptoms and systemic manifestations, which are also found in diabetes and auto-immune diseases, with more gravity. Controversies involve standards of normality, both physical and behavioural, and unclear risk factors related to family (apparent ‘contagion’), location (geographical clusters), and events (previous viral infection, stress, trauma, overwork, etc.).

Strategies for medical cure, for practical improvement of the patient's many limitations, for holistic healing ('alternative medicine', inspired by traditions or Eastern practices, and 'complementary' medicine), or for general well-being, are in no better agreement. The bewildering contradictions range from controversies, in both theory and practices, to the vagueness of lifestyle and dietary advice (is bread 'good for you', does it 'make you fat' or even allergic?), the impossibility to obtain a straight answer about a question as simple as 'what is a healthy diet?', the plethora of alternative treatments and herbal or nutritional supplements on offer, etc. All these make it impossible to make any sort of reasonably 'informed' decisions without serious medical education, and without using medical helpers as an information network. Furthermore, specific treatments rarely take into account previous states of health: the personal standards of 'feeling healthy' are different in various individuals, and sometimes do not correspond with statistically normal standards (indexed by age). The assessment of 'successful' treatment results also does not take into account the frequent (but generally undocumented) progression to a later, worse, yet more clearly diagnosable disease. In such cases, the progressed disease is generally considered as unrelated to the earlier syndrome, or as righting a previously wrong diagnosis. Yet, it offers an easier way to make sense of the developing condition, and gives easier access to known treatments. All this is complicated by the great diversity of existential meaning attached to illness by patients, who sometimes even consider it spiritually positive (eg "It is the best thing that ever happened to me"). The clinical literature also attaches *personal* evaluation to illness, as giving 'secondary' social benefit, or being, in itself, an unconscious psychological benefit. All medical/health factions also make wild success claims for their treatments, which can often not be clearly assessed except by directly trying them for oneself (even medical drugs). This utter confusion is one reason that leads most patients to rely on medical expertise.

Consequently, in this research, there was a need for some kind of classification and organising principle for 'mapping' the various perspectives into a general scheme. To

understand this situation, I also had to test empirically some of the explanations and claims, and find out what the actual effects are, their variations and the reasons for them, and whether there was likely differences in the effects between individuals or between the possible 'body types' or different baseline 'states of health' before illness. For example a brain stimulant can correct one person's health but cause an epileptic fit in another – this is part of what medicine calls 'side effects', and is a common problem in the uneducated use of herbalist treatments.

The elementary types of classifications and models I found in the literature, and those developed through the study of theories and experiential styles in many areas, are also present in the ground knowledge of medicine. For example, the descriptions of the body follow familiar elementary principles of intellectual construction and explanation of physical or material reality (eg operational: how things 'work', and connections we recognise) and of experimental/experiential finding (eg structure-function). Medicine thus involves four well-known styles of explanation/ description (respectively): anatomy, physiology, metabolic operations (or transformations) and nosology (disease-defining linking sets of symptoms. All four are reflected in the education of clinicians, but fail to account for low-grade chronic conditions, and yield the inevitable necessity to introduce complexities such as those of medical biochemistry and genetics, and therefore new styles of explanation. There are many ways of defining 'elementary' principles or categories; these are developed through most of the chapters.

Two of the most common, elementary, habitually unrecognised taxonomies are apparent in:

- (a) the three systems most often mentioned: nervous, endocrine, and immune systems, and
- (b) the dual distinctions such as parts and whole (eg cell and organ, the whole body and its sub-systems), objects [or subjects] and relation [or interaction] (eg organ-circulation, body-mind, body-brain, self-world, body-environment).

Both rely on the general notion of a 'system', which is understood differently under various styles of explanation (eg whole, object or thing). It takes different names as it is applied to

(or drawn from) diverse fields (eg social systems and organisations, the mind's self, spatial bodies in physics, the body-organ-cell biological hierarchy, the objects and subjects of human sciences, etc.). Such fundamental notions, not always basic, are the source of the parameterisation developed in the first phase of this work, for an analysis of the various perspectives that is applicable across fields ('perspectival analysis'), and across scientific and human domains. Integrating these domains into a common classification system permits a generalist approach. The combination of fundamental parameters gives a picture of 'health' that involves medical methods based on ideas such as activation of sub-systems (eg sexual drive, immune defence), compensating for negative effects (eg relax to reduce tension, purposefully avoid allergens), and practices that restore binding integrity (eg breathing, exercise, eating fresh foods or juices, spinal adjustment). These ideas lead to strategies that typically focus on:

- (a) inducing reaction (directed response), to normalise behaviour, or optimise or improve it,
- (b) stabilising the functions or circulations to prevent extremes,
- (c) establishing structural integration (binding) to prevent breakdowns.

All of them rely on either the physical entrainment of brain-driven processes (eg neuro-endocrine triggers, balancing feedbacks) or mental self-control involving intent, choice, decision, will, imagination, visualisation, etc. The aim is to exert active or directive ascendancy over the body, and shape it for use by the more 'interesting' self-mind inhabitant of the body-machine or vehicle, or the more 'complex' brain-mind (more 'evolved' than mere mechanical or animal physicality).

The problem is that these strategies, which we learn from childhood, were exactly the crux I was finding for my 'illness': an apparently normal body (according to others and to most medical tests – available in Australia –) but with too sensitive reactions, a chronic stress-alert climaxing into acute extremes and collapses (although 'small', not threatening with physical death they involve the entire lifeworld), and a progressive breakdown – the falling apart and 'consuming' or 'wasting' of the tissues systemically, with focused localisation in nerves,

spine and brain. The body was, altogether, also driven out of physiological effectiveness by both brain and mind (rather than brought by them to a restored health). This ineffectiveness involves vital activities such as breathing, body temperature, sleep, self-care, and inability to recognise precisely signals of 'physical need' (eg not knowing if 'need' means hunger, thirst, or need to breathe or move, and having to try one after the other). The explanations of causes and effects just did not fit. The brain, over-focused mind, and constant requirement to use both to 'cope', control, and for purposeful work, appeared as the *cause* of both the internal manifestations and external effects (lifestyle becoming 'stressful'), rather than as a *solution* for the condition. The accepted explanations presented a 'turned-around' view of the situation I was facing. Williamson & Pearse (1980) have noticed such an inversion, in another way and in a different context (see discussion of health in the next chapter), but it exists in other fields as well.

As a reasoned strategy, trying to take a holistic approach by synthesising brain central control and self-control over the physical body, its internal patterns of activity, and external behaviour (that of the human person), creates a causal circularity between the physical and the mental aspects of the head: One uses the mind to 'balance' the brain and external 'personal' behaviour, and the brain to regulate the mind and internal 'physical' behaviour. This translates into vicious circles and recurrent phenomena, and eventually gets out of hand. In practice, it is this very strategy that had left me with a mind in chronic stress, an over-used brain in chronic alert, now too damaged for efficient control of even the basic physiological functions of a strained body. The vital functions of the body had become so ineffective *on their own*, that constant mental self-monitoring had become a daily survival necessity to permanently make *conscious decisions* for actions as primary as calming the mind and brain to go to sleep, remembering to eat, drink, and even breathe (having to use a timing clock as a reminder when sitting for any length of time). This also spiralled out-of-control into recurring collapses from slight effort, into what feels like a 'brain storm' and into increasing dehydration and chronic swelling and 'burning' pains. Existentially all this correlates with

socio-material difficulties as well, and represents a ‘state of stress’ that has no particular ‘cause’ or ‘triggers’ but itself and which ‘pushes’ itself to extremes. Almost everything, inside and outside, that is ‘normal life’ to others, becomes ‘stressful’ and a source of ‘allergy’ (even taking a shower). Usual explanation could not account for these matters.

Problems related to explanation can be found in many other fields, particularly the general definitions used in theories and philosophies (an example is considered in relation to methodology). Through a ‘perspectival analysis’ (primarily but not only) based on linguistics and vocabularies, these can be clarified and organised into an overall ‘perspectival map’ that can represent both a specific case of illness (low-grade chronic syndromes) and a general image of our notions of health. It is a map of a general system of explanation and construction of experience. (There are many.) Using this way of analysing, one can also track *forward* the development of characteristics of illness that become generalised (eg inflammations and their developments into neoplasia and other degenerations), as well as the evolution of general perspectives (eg types of thinking, experiential styles, body types, and ancient ways of observing). Yet some other phenomena still do not make sense that way – for example, the *origin* of ‘spiralling up’, of ‘priming’ (what initiates or pushes into a ‘shift’ or ‘jump’ event). Using a different range of methods allows one to trace *back* the history of ‘behaviours’³ (or ‘workings’) and the expression of forms (eg aetiology of a syndrome, paradigmatic reaction at the source of a new perspective), to an ‘initiating beginning’ or ‘origination’ process. The various explanations, symptoms, and sensations of illness can also be *traced back*, and their characteristics studied, through topographic images (eg core-surface, centre-periphery) and simple geometry (eg up-down on a vertical axis) that shift from one iconic figure to another, representing ‘orders’ of development or of generalising, or localising effects (eg fibrous concretions, worsening chronic low-grade dehydration). This kind of modelling is a dimensional animated geometry based on topology, which is here developed into a method that I call ‘nexial-topology’. (This ‘geometry’ is presented in

³ The term ‘behaviour’, as employed in this work, means ‘workings of’ rather than the ‘externally’ observable actions or ‘internal’ motions of an object or subject, and describes nexial and topologic ‘properties’ rather than conventional movements and activities.

chapter <Deployment of Perspectives>.) It is apt to model and help understand what other methods cannot. It is presented by using geometric animations that can be related to a particular kind of daily life gesturing we use in speaking of stress pressure, strained activity, or of a restored state of ease, freedom or peaceful *joie de vivre*. The term 'nexial' is used in the literature to develop notions of activation and deactivation. (presented in Appendix C, in the <Endnote C5\ Nexus, nexial and nexialism>).

This dissertation aims to demonstrate that medical descriptions and strategies of improvement are derived *under* particular, sensory-based 'perspectival' views that may be perfectly self-consistent in a domain of application, while mutually inconsistent as general views. For example, a 'strong reaction' is a problem in nutritional medicine (eg allergy), but reactive strength is sought by athletes and in sports medicine, and strong effects (or fast, obvious) on the body or brain are prized in general medicine. Each view is logically self-consistent, valid and useful in its field (explanations, aims and values consistent with practical actions and observations), but together, as a general approach, they cause paradox and major questions concerning dosage and timing, but also high risks in the application of amino-acid 'loading' (leading to regulation of product sales).

Not only that, they also place health *inside* a systemic framing of 'the body' (or body-mind) that correlates with the appearance of limits and occurrence of 'boundary conditions' (for example, emergency or critical threshold). This is not taken into account in our understanding of health and of the low-grade syndromes studied here (nor in developments in fields studying other objects). Some of the characteristics of such syndromes will be shown to derive from the systems of representation themselves, and the strategies for healing and improvement practices that they prescribe, rather than from an intrinsic characteristic of the individual affected (or of environmental exposures, toxic or beneficial). For example, many 'symptoms' in *low-grade* chronic 'illness' correspond to *damaging* effects of such dosage and timing, or critical thresholds and 'state of alert', etc., which appear under lifestyle pressures normally valued. Without the positive evaluation of such directive

pressures, the condition is no longer devalued as an 'illness'. So the organisation of these perspectival explanations and practices is a core issue and is related to ways of 'valuing' and formulating.

Another example of problems of representation relates to symptoms of 'dying' and 'risk of death' as observed and treated in hospitals. They are associated with the idea that a person's body will or may soon be 'dead'. A few physiotherapists have confirmed to me that low-grade conditions can display highly similar symptoms (eg dry mouth, difficulty swallowing, disturbance from gentle interventions). They are, however, associated with a mere 'sense of impending doom', which I apprehend as a sensation of 'being in-dying', and which is often interpreted as a 'belief she is sick' when 'really, it's all in her head'. Yet nutritional science often finds this to be an 'imbalance in the brain'.

These are just striking examples, out of many, of fundamental problems in both explanation and findings (experimental or experiential) that involve both scientific and human domains. Moreover, these medical examples are only the tip of an iceberg: similar 'fundamental problems' exist in philosophy, in physics, in transpersonal psychology, in linguistics, in palaeoarchaeology, and many other fields. The implications of modelling with nexial-topology are global rather than limited to the ecology of health.

As far as my inquiries with other researchers could show, *geometric* topology does not appear to be used in human sciences (eg semiotics, ancient scripts) or even in some life sciences (eg salmon life cycle studies), although *topography* is quite common. *Mathematical* topology is the basis for much theoretical physics (General Relativity models, rather than quantum physics, are particularly relevant in the present work) and is used in other physical sciences (crystallography, physical palaeoanthropology – for example, learning about human physical growth and disease in prehistory through the patterns of tooth development). The complex developments of the topology of general systems (representing complex processes in point-set defined systems, using statistics, probabilities, and numerical analysis *calculations*) produce advances in biochemistry, genetics, and computer-based technology

such as medical imaging. It also supports engineering-based theorising for sciences of complex dynamic systems, whose results are popular for metaphorical interpretation in the human domain – but this causes problems for transfer of knowledge between the scientific (physical or natural sciences) and human domains (discussed in <Deployment of perspectives>).

The basic form of *geometric* topology that I use to formalise ‘nexial-topology’ is not ‘mathematised’ and models visually, without measuring the geometric figures, *small* distortion or deformation and the *approach* of boundary conditions, whereas conventionalised topology describes the appearance, occurrence, and repetition of boundary conditions and critical phenomena (See chapter <Deployment of Perspectives>).

This geometric ‘nexial-topology’ is similar to a kind of ‘thinking in image’ that is, it seems, used by mathematicians (see <Endnote C11\ Non-algorithmic>). It also provides an appropriate means for describing *formally* a ‘native’ capacity that some of us use in daily life, and which I associated, at first, with common notions of intuition and instinct. To me, it is a daily-life cognition style correlated with a certain ‘state of health’ (eg not accessible in states of ‘alert’). It is a very practical ‘lived’ animated geometry that ‘shows’ the same kind of properties as those described by topology.

The properties and effects modelled in this dissertation have been discovered through empirical observation, with experimentation helping to find rules, and intellectual analysis helping to find names and existing explanations. My fortuitous discovery of topology while critically examining definitions in various fields (and subsequently of its various definitions and interpretations) allowed me to find partial ways of expressing the properties and rules I found. It also provided a precise way of formulating this ‘native capacity’ as a process of ‘gauging’ an undifferentiated situation with ‘global’ properties (in the vocabulary of humanities, ‘non-local’ in the jargon of physics). This gauging neither evaluates nor measures, but rather ‘models’ by imaging how the situation is ‘shaping’ (this is not imagination, a mental representation). The imaging is apprehended through a ‘local sensing’

of how the situation ‘presents’ in its immediacy, without separating ‘me-observing-that’, and independently of representations bound to conventions of description such as self and world, or space and time, physical and mental. This method clarified for me the sense of ‘turned around’ in understanding, the sense that the many perspectives, as a whole, somehow ‘turn upside-down’ the conditions they represent. For example the role of the brain-mind in health), and its representations are, in terms of moving geometry, a ‘turned inside-out’ view that also manifests in health sensations and reactions (eg to medical drugs) that we sometimes express by saying, ‘I feel all turned out’, or ‘I am dispersed’.

The usefulness of a geometric method to deal with general notions will become apparent if the reader remembers how much symbolic images are an intimate part of both culture and technology. For example, medicine uses pictures of the body for teaching anatomy, and computer imaging techniques increasingly supports diagnosis. In ancient traditions and modern religions, as in metaphorical discourse or company logos, symbolic and iconic images are everywhere and rule the cultural elements we use to construct both our experience and explanations. Simple images also play a major role in theoretical models (think of the evolutionary tree or ladder), and govern our thinking (eg evolution goes ‘up’, not down). Gestural imaging also accompanies our speech and expresses the usual mimicking of motion, of the shapes of naturalistic objects, of speed and direction, etc. It can also express the changes of shapes, and the ‘shaping’ of a situation (eg when we talk of stressful situations or pain, we might gesture ‘increase’, ‘spinning fast’, ‘loosing ground’ and drowning, or ‘going off track’).

The ‘native capacity’ for ‘gauging’ is a well-known feature of human nature but has, to my knowledge, never yet been the object of a formal or technical description that is not subject to perspectival conventions. For example, calling it ‘intuition’ denotes a primacy of mind, calling it ‘instinct’ denotes a primacy of the animal body of humans, and calling it ‘gut feeling’ denotes an association of physical and mental aspects. It has many other such names. A description using ‘nexial-topology’ is independent of any such framing of

experience (that of a self, an animal body, or an emotional being), and of explanatory conventions. As such, it has the potential of achieving more widespread agreement.

As a method, a crucial advantage of nexial-topology for theoretical modelling is that it offers a much simpler means of modelling ‘deployments’ (such as generation and degeneration) by using only two parameters⁴, whereas habitual representations and complex advances of contemporary science require many variables that are dependent on conventionalisation. This method also avoids many paradoxes and pitfalls of philosophical and scientific ‘fundamental problems’ such as those of measurement, value, infinite regression, the excluded middle, or the ‘chicken and egg problem’. Much is currently being written about the need for ‘wild’ models, unitive models, a common ‘new language’, and an understanding the ‘origins’ of the universe, language, agriculture, humans, etc... The present approach, instead, highlights a common change toward ‘advanced’ frameworks in the theories of diverse fields, despite their different vocabularies, contexts and details, a change highly relevant to health. It also correlates with new questions: ‘deeper’, more subtle, specific, detailed, focused, expanded, or broad, etc.). It could reduce their multiplication, as well as the complications introduced by ‘multi-dimensionality’ or ‘many worlds’. It brings out a fundamental symmetry between human and scientific perspectives, which has important functional and structural consequences for experience, and crucial implications for knowledge transfer. It also suggests a different view of ‘wildness’ as ‘undeployed’.

In medicine, this method could make sense more easily of the systemic and metabolic syndromes in various degrees of gravity, without the confusing distinctions introduced by causality, localisation, qualitative specification, quantitative ranges of normality, and complicated naming of clusters of symptoms (or their over-simplification into ‘diseases’). This claim, which may appear suspiciously sweeping, is expounded progressively through the chapters of this thesis. It can be summarised by qualifying the confusing distinctions of ‘deployments’ that do not allow an unfragmented or non-differentiated view, whereas the

⁴ Parameters: orienting and activity. These are discussed in depth in chapter <Deployment of Perspectives>; the various ways of parameterisation are discussed in chapter <Many Perspectives>).

modelling method introduced here allows both conventionalised, ‘deployed’ perspectives (including integrated), as well as an ‘undeployed’ view that does not rely on focused or expanded discrimination. It evades having to separate or analyse (and synthesise or re-integrate) many aspects of a circumstance (eg a person’s life, mind and body), to locate a cause, or to devalue an original trigger or consequent weakness, in order to value a strength or an improvement. As a result, it supports more immediate ways of dissolving or ‘undoing’ illness and of keeping health on track. This could reduce problems of iatrogenic diseases and collective health consequences that arise from general medical advice, which is shifting (eg concerning dietary fat or sunshine), and the burden on the public health institution due to spreading obesity, chronic illness, degeneration and ageing. This applies to other kinds of circumstances as well.

In both scientific and human domains, two basic notions are at the core of many problems, both practical and in theory: water and gravity. They coalesce in medicine, for example, in weakness of vertebral discs and posture in chronic illness, as an ‘underlying cause’ of many systemic dysfunctions (eg though impairing breath and motions), and in the notion of female nature as ‘gravid’ (the source of the ‘inevitable female problems’ in physical and mental health and related to pregnancy). In the collective realm, they manifest in the ‘forces of inanimate nature’ and the rising issue of water supply and use. The proposed approach sheds light on the one aspect of water that is completely ignored – the involvement of its intrinsic physical properties in shaping the body-brain’s health, behaviour, and the mind. All three aspects are implicated in the human hazy sense of gravity or heaviness (in any way the reader cares to interpret these words), and in our endless needs and wants. These drive our chronic and repetitive seeking of all the comfort props of civilisation, which are so wasteful to produce and build.

As a *native capacity in daily living*, nexial-topologic apprehension helps keep a human life or a world ‘on track’ (conventionally: ‘healthy’, ‘sane’, or ‘thriving’), without involving programming, reconditioning, or learning (learned ideas are necessary *to explain* the

capacity, but not for using it). It makes it easier to care for the body, rather than wait for the sense of emergency or for something to go wrong before visiting the medical profession and require constraining, painful or costly treatment (a rising problem). This is its most important role: to help prevent critical events from occurring at all. Children are medicine's warning 'canaries in the mine', doctors say, because the most or first affected by the spreading of disease (as well as suffering and death, according to ancient myths). The role of certain basic spontaneous behaviours that we normally think random, meaningless, strange, even socially rude, and that have no medical explanation, modern or ancient, could now be understood. For example, looking out the window at school, or the 'walkabout' of Aboriginal Australians, are habitually or systematically suppressed by cultural and technological means (eg computer and car). Yet they could alter our fundamental medical views, attitudes to the body's health, and alleviate the struggles of childhood and teenage years especially.

The format of this dissertation

Images, animations and text, in this dissertation, need to be approached in a new way.

The range of fields examined for this study is wide, and their representations and explanations are complex. The various perspectives envisaged rationalise health and the 'physical world' by using various means, and explain their changes through different developmental paths. For example, a skill regarded as 'evolved' in one perspective may be considered 'primitive' in another, or just one 'type' in a third one. The chapters are not numbered hierarchically because any number of sequential rationales or meaningful paradigmatic 'stories' could be drawn from the issues addressed in this work, with different evaluations for the same thing. This thesis aims to model something that does not rely on value or on a special viewpoint. It starts from the mosaic of explanations and the patchwork of experiences, organises them into a general landscape, to introduce another way of apprehending them, more 'generic'. The account may seem disjointed until a global picture is built in the reader's mind. Some sections may be difficult to follow because the reader may be taken to unfamiliar territories. On my part, also, I am bound to have failed to come

across many relevant and even seminal works in specialised fields, but their general approach would be included, even if through entirely different contexts and vocabularies.

The use of images in this work is varied. Some of the images are abstract representations (models) that manipulate general ideas; others are concrete representations that describe objective facts or experiences. The geometric images and 3-dimensional animations are used in an attempt to visualise certain properties that connect them. A single developing field or space observed may warrant different geometric images to highlight different properties. This may create apparent inconsistencies *in the text*, which only exist because words represent separate idealisations (generalisations or specifications). Some topologic properties are difficult to explain even with geometry. A live sketching related to particular daily life conditions would make it easier to see implications and how they may overlap. This is not possible in a written account, and so the multi-modal format palliates this by (1) making multiple cross-references to the 'Book of readings' and other sections, and (2) by encouraging an intuitive overview of implications through a connection to the reader's own living situation. The use of animations and Power Point visuals is designed to suggest analogies and metaphors drawn from the reader's daily life in both its globality and its most subtle details. This may include gestures and sensations, health changes and developments, emotions and ideas, a general sense of one's life, and even a sense of 'where the world is going' and what humans may appear to risk, and to be missing or have lost.

The texts provide explanations and details to link images to the store of knowledge and of experience, and this complicated unavoidably the organisation of the thesis. Each chapter relates to a distinct sphere of knowledge and experience, and ushers the usefulness of images and topology. Inversely, the chapters may also be considered to detail implications of nexial-topologic deployment into field-specific perspectives. Each chapter refers to sections containing text extracts, Power Point presentations ('slides'), animations, and other information (in appendices). Among the supporting materials, one particular appendix is included that has an informative role that would not be necessary for a specialised study (see

below, Appendix F). These extracts are chosen to point to cross-field patterns, ‘not well understood’ phenomena, and areas neglected, unexplored and unexplained by academia, and save reader frustration in searching the literature for particular texts. The likely unfamiliarity of the reader with at least some of these topics, and the connections made, led to including a fair amount of text in appendices, as a fascicle separate from the thesis, for ease of reference.

I appreciate the attention of the reader and effort at following this unusual contribution.

Editorial notes

English is not my first language, and so my writing may sometimes be clumsy, or denote French habits. Some uses, however, are purposeful. Using the analogies of daily life helps to make the images meaningful, independently of explanatory words, whose specialised meanings differ in different fields. This is why a colloquial and ‘global’ meaning (little differentiated, interpretable in various contexts) should be assumed in most cases, rather than suspecting a definition ‘error’ (field bound and specific). Despite my great care, it is one such ‘misinterpretation’ (of the word ‘symmetry’) that led me to understand the topologic meaning of ‘turn-around’, to realise the difference between the discipline of topology and the geometric, *non-measured* imaging of ‘nexial-topology’. It also such an apparent ‘definition error’ that allows to differentiate the common ‘mathematical’ form of topology used in contemporary sciences, which interpret it in terms of point-set theory and calculations, from the original practice of topology as a *geometric* discipline, which is simplified in this work for the purpose of formalising non-perspectival modelling.

Small numbers (up to twelve) are, in some parts, written as digits rather than words, in order to make visually more obvious their relevance to the ‘modelling by the Number’ explained in the chapter <Many perspectives>. Some of the most significant literature is cited (author and date) in the chapters, endnotes (Appendix C), and in Appendix F. References (Harvard system) sometimes include a copyright date of original publication, when relevant in assessing historical development of ideas or of recognised types of experience. The chapters are referred to by name, for context; for example: <Health and illness>, <Many

perspectives>, and other sections in a similar way, with indication of appendix letter and number (see below).

Contents of this dissertation

- The chapter <Methodology> provides a description of the development of this research. Assuming a reader to some extent unfamiliar with *geometric* topology, or with the semiotic diversity of traditional symbols and theoretical icons, led me to weave into this description some examples that can clarify notions relevant to the geometric images of topology. Although they lengthen the *exposé*, they help follow the complex schema (summarised in figure 42) and the several dimensional orders of the diverse research steps taken. The details of inquiries and validation procedures are addressed in the second part of the chapter.
- The notion of validity is treated in a separate small chapter, <Validity and valuing>, which is placed after the chapter <Many perspectives> because it is the result of ‘perspectival analysis’ of the notion of ‘evidence’.
- The chapter <Health & illness> contains an orienting discussion of the works of Hans Selye and Scott Williamson, to introduce the problems of stress and strain, medical theories, and the difficulties due to linguistic expression. Two aspects are discussed in detail: experimental findings concerning the effects of food relative to different ‘health states’ and 3 properties of ‘immunity’ that I have not found described in the literature. The flat map of immunity (figure 43) presents a comparison of views on ‘immunity’, conventional and drawn from nexial-topology. The most important practical findings concerning the body are presented in images, in the Power Point presentation <PPT1\ Body>, and in a summary ‘portrait’ in phenomenological style, in both word and images, in <Conclusions>. Other health issues are only sampled through collections of text extracts in Appendix F and other collections.
- The chapter <Perspectival observation> is a commentary associated with one animation and two experiments for the reader to perform (< B1\ Lever experiment> and <B2\ The 3 Star experiment>). It aims to ‘show’ directly to the reader’s mind, by his or her personal

cognitive exploration, certain features of the processes involved in ‘observing’. Performing the experiments will allow the reader to gain an active understanding of the problems I faced in reviewing the many perspectives on health. The animation (<1 Trefoil>) will suggest analogies to the reader and connections to personal experience, which will be useful in following the rest of the dissertation, as a context of application.

- The chapter <Many perspectives> is a summary account of the developments of my theoretical work, using the vocabularies found in theories, experiential descriptions, and my own ways of formulating things. The aim is not an exhaustive review, but to classify perspectives into general schemes: (a) taxonomies based on words, (b) typologies based on the ‘Numbers’ that are apparent in geometric figures and categorisations of some theoretical and philosophical models, and (c) the geometric figure underlying the perspective or model is their general ‘image’, and these *general* perspectives are *not dependent* on the context or field of application, world location, or cultural history. Finally, the notion of cultural ‘icon’ is introduced to deal with the diversity of these ‘general images’: the various icons can be represented as a developing series, a progressive geometric deformation, which correlates with shifts in vocabulary and definitions, and semantic drift.
- The chapter <Nexial-topologic deployment of perspectives> is the core of my explanation of ‘nexial-topology’, whose understanding requires the animated visuals, as a modelling method. This presentation is the result of experimenting with various forms of ‘language’ for expression (words, numbers, images). The chapter organises all the perspectives in a global schema of ‘deployment’ that can be understood as combining ‘unfoldment’ and ‘enfoldment’⁵ into various ‘realities’, with progressive distortion. The geometric images and words used here relate to those used in topology (in mathematics and physics) and to the realities they represent. Certain ‘rules of thumb’ governing this ‘deployment’ are presented, and have been noticed in the literature (sample in <F18\ Rules

⁵ Unfold-enfold: to bring out, spread, develop or grow – and also wrap up, envelop into a folded state (Macquarie dictionary 1981). The typical naturalistic image in Chinese culture is that of an acorn growing into a tree, which produces acorns. (Detailed in <Nexial-topologic deployment>)

of localisation-extension in the literature>), but not put together. Two forms of nexial-topology are compared graphically, one being a method for describing ‘deployment’, the other being the ‘native gauging’ mentioned above. The differences create totally different images of ‘health’ – one of critical response to external or internal phenomena, in various degrees, the other of ‘ease’ or being ‘unaffected’ (here dubbed ‘proto-health’). One global consequence is expressed through an animation, <Grav-Wave>.

- In the chapter <Ancient perspectivalism, The Earth, & The East>, evidence is gathered for an ancient way of thinking that is generic, multi-perspectivalist. It has habitually been interpreted as an idiosyncratic kind of historical account, or as a ‘syncretism’ with little logic, because it produces a modal rather than linear kind of *exposé*. Assuming, then, the validity of these texts as sources of organised knowledge, one archaic general model they often review is studied: the ‘4 directions of The Earth’, whose origin can be traced to a less differentiating world model named ‘the East’. The words used in such texts are considered ‘obscure’ (and were already so in archaic times), but have a striking similarity to topologic notions, and have imaged equivalents in several cultures I investigated. A physical and practical interpretation is proposed for some remnants, in archaic texts, of the (probably Neolithic) oral tradition associated with ‘The East’. It is linked to health sensations and body ‘signs’ or ‘signals’ that I observed. Two examples are detailed through text extracts in <F10\ Left-Right> and < F11\ Red>. Such observations do not make sense to modern explanation and even modern common experience has obliterated awareness of them.

- The introductory section <Obscure words and ‘dark saying’> in <Appendix A\ Table 9\ Nexial-topologic vocabulary> is an integral part of the discussion of words and language in this thesis. It is an important element governing the choices made regarding the communication of the findings of this research. It also summarises a specific study made over two years, directly related to little known work done by Isaac Newton. It led to gathering the examples listed in the long Table 9, crucial to the argument that specific-general languages hide certain notions I call ‘global notions’ that Piaget studied in children.

They relate to a topologic understanding, which is habitually ignored because there has been no commonly accepted formal way of explaining it.

A number of ‘hidden’ aspects of culture are mentioned, in these two chapters and one appendix, that are ignored in medicine and are addressed only by highly specialised fields of academic research, only in a fragmented way (see <F13\ San Jiao and Inversion>, <F14\ Mysterious Female>, and <F19\ Published EEs>). One of them has a major impact on definitions of illness: the ‘primary-secondary’ distinction (addressed in <F12\ Mysterious Pass or Place>).

- The <Conclusions> express a set of general implications for various fields, to emphasise that our views of ‘the world’, of what is ‘natural’, ‘life’, ‘human’, and of ‘the body’, have practical, sometimes major, consequences for health and for our daily living. They point out that our reformulations of these views throughout history correspond with widespread recurring fundamental problems that remain unresolved. One aspect is presented in the form of an essential or summary ‘portrait’ in phenomenological style, through both words and an image. It was observed in archaic times already, albeit with less sophisticated vocabulary than today, described as a ‘wasteland’ phenomenon. Its manifestations, both external and internal, are now passed for idiosyncratic or senseless expressions of individual ‘body type’ or personality resulting in seemingly unavoidable chronic or acute ‘illness’ (or both, as studied here), as well as for ‘global warming’ and the apparently uncontrollable, globalised, periodic, breakdowns connected to the ‘dark side’ of ‘human nature’, its ‘body politik’ and ‘systems’ on which rest encultured economies, civilised ecologies, and still ‘fundamental’ problems related to survival, food, and water (and dehydration, whether obvious to hidden).

Supporting materials

- *Appendix A* contains an introduction and a long table of vocabulary gathered from the literature and is denoted as <Table 9\ Nexial-topologic vocabulary>. Examples are given with quotations from the literature, for context.

- *Appendix B* contains two experiments for the reader to perform: <B1\ Lever experiment> and <B2 \ The 3 stars experiment>.
- *Appendix C* discusses a few side issues and definitions in endnotes, with relevant references. For example, <Endnotes C4\ Topology>, <Endnote C6\ Core culture>.
- *Appendix D* gives some examples of my research organisation and techniques (eg <D1\ ‘Ring temperature’ technique>), and some records are provided in <PPT7\ Research notes>.
- *Appendix E* is denoted in the text as <EEs>, and is a collection of some special experiences and experimental observations: for example, <EE2\ Looking in the vague>, <EE15\ Red spot>, <EE17\ Burning Fire>, <EE18\ Episode of heart congestion>.
- *Appendix F* contains a selection of text extracts that is primarily informative but plays several roles. The extracts are reproduced verbatim, and their importance lies in the most general ideas (valid in various fields) and the most specific details (vocabulary, metaphors, and particular experiences). The intent for each section is presented in the introductions, except for three myths (<F1> to <F3>) and the four published ‘EE’ experiences (<F20>), simply reproduced. Some sections also contain a discussion that makes unusual connections between various fields. The sections <F16\ Variable body> and <F17\ Anatomy notes> combine text extracts and some of my basic notes, which may be useful for deepening the body topic. Some sections are meant to highlight vocabularies (particularly <F7\ Landscape vocabulary>), and so certain extracts are incomplete, limited to listing words and parts of sentences, in some degree of context. A number of sections are meant to support a quick scanning of little known areas of knowledge and experience, rather than leave for later a possible investigation of the literature. Summarising them in small endnotes would not show their importance in motivating the use of topology. Commenting on them would be less effective than letting the reader detect the patterns directly. The sampling in these sections is necessarily fragmentary, but the extracts are chosen to present several of the major ideas concerning each topic. Certain subtle, but important, details may also recall unusual aspects of the reader’s life (they may be recognised).

Image presentations

Nine animations, and seven Power Point presentations are provided (on a CD) to enable a more direct sense of what is described in words. They are summarised visually in <Image-summaries> at the front of this dissertation, after the table of contents and the beginning lists. The chapters refer to them by their number and name. For example, animations <1 Trefoil>, <9 Grav-Wave>, and slides presentations <PPT1 Body>, <PPT2 Models collected>.

- <PPT1 Body> contains some theoretical models, various developments drawn from physiology and tradition, images of anatomical features of the body, and representations that track certain crucial health sensations observed. These slides point out some ‘hidden’ aspects neglected in most forms of medicine. This set makes *global* sense if viewed last, but since concrete images represent the ‘ground’ of this research, it is useful to consult it earlier. These slides are supported by two sets of notes <F16\Variable body> and <F17 Anatomy notes>.
- <PPT2 Models collected> comprises a selection, from the literature in various fields, of *general* models that use pictures. They are organised by types based on numbers or named geometrical shapes apparent in the images used (for example, ‘3’ is for a triangle, and ‘cone’ is for a mountain), to highlight the role of iconic imagery in culture and civilisation.
- <PPT3 Geometry of perspectives> uses fundamental notions of geometry to demonstrate the role of flat, spherical and hyperbolic geometries in our explanations and experiences, and other expressions such as icons. The geometry represents the fundamental ways we use to ‘put in perspective’ or ‘view’ of what we observe, to ‘frame’ our mental constructions, and to ‘interpret’ in the brain–mind according to sensory parameters (sensory perception and ‘sensate’ psychological interpretation). These images also relate geometry to general philosophies and science. One comparative slide hints at a global ‘drift’ or progressive loss often described as ‘residual’ (modern) or ‘remnant’ (archaic).
- <PPT4 Einstein> contains images strikingly similar but produced by different people, in different places, times, and contexts. The presentation aims to suggest that this way of

‘thinking in images’ (‘thinking’ is not quite an appropriate description) is topologic in nature, and appears ‘non-locally’ in the human mind. It seemingly always produces the same basic range of simple geometric shapes, involved in developments of culture and civilisation.

- <PPT5 Nexial-topologic imaging>: this series gathers, from my records, various images I made to help me understand the fields I surveyed, and my own expression. Drawing to translate the words, descriptions, analogies, and metaphors into graphic properties helped me find underlying similarities in apparently very different approaches.
- <PPT6 Research notes> is a collection of some of my research records.
- <PPT7 Three nexial-topologic rules > is an imaged summary of the three geometric rules of thumb I found in the ‘deployment’ of the perspectives.
- The animations describe certain properties of topologic ‘deployment’ without particular context. Hence, their geometric nature can be interpreted as abstract or concrete, depending on preferential framing. These properties are valid in any applied field (topology is used in many different scientific specialties). They express both ‘directed motion’ and ‘return’, in space, and ‘directive activation/ de-activation’ in a timed framework. These ‘orienting’ properties can be apprehended intuitively, related to a context particular to the viewer (eg ‘my impression of ‘speed of life’) that can be generalised (eg the medical field in this work). They are also felt instinctively in daily life, expressed in gestures that a particular civilised culture immediately ‘translates’ into more conventional formulations. One missing property of ‘boundary’ – the core object of this work –, is a deployment through various stages, into a ‘bubble’, up to a ‘scattering’ (such as mist or dust). Its imaging can only be found in partial representations (eg a drop of water onto a surface, or a jet scattering ‘to all four winds’).

I hope that the images and animations will also make the reading more enjoyable.