

THE UNIVERSITY OF HULL

IMMERSIVE SYSTEMIC KNOWING:
RATIONAL ANALYSIS AND BEYOND

being a Thesis submitted for the Degree of Doctor of Philosophy in
Systems Sciences

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by

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Abstract

Applied systems thinking has rapidly developed through successive waves of development, and the current reigning paradigm is the revised approach to critical systems thinking.

This research scrutinizes systemic intervention. It employs the methods of second-order science to apply some of its principles reflexively back on to the domain to discover two gaps: one between the espoused aims of systemic intervention and the adequacy of its methods, the other about its dependence on dialogic rationality. It also delves into its philosophical underpinnings to trace the reason for this gap to the 'ghosts' of rationalism. This is because modern Western thinking equates consciousness with intentionality. I argue that there is another well-recognised mode of consciousness, that of non-intentionality. I name these two modes as the becoming-striving and the being-abiding orientations.

To address the gap, firstly, a characterisation of the systemic ontology is attempted. Three basic features are identified: mindful interconnectedness, enactive cognition and teleonomy. I also describe plausible political, epistemic and pragmatic goals for systems thinking arising from this ontology.

Four methods from adjacent disciplines are examined in detail to show that these address the systemic ontology in better fashion than existing systemic approaches. These mature global contemporary approaches access knowings corresponding to the being-abiding orientation, absent in systems thinking.

A suitable ontoepistemology for systemic knowing must comprise of two ontologies and epistemologies corresponding to each of the two consciousness modes: four component elements. Suitable conceptual models from other disciplines serve the purpose of these four components. Thus, a model of immersive systemic knowing is assembled, which meets the requirements of a framework for systems thinking in terms of the goals posited.

A key feature of this research is the espousal of experiential knowing: not in a phenomenological sense, but in terms of a radical empiricism. It argues for the value of

practical knowings that go beyond rationalistic formulation, which are always held in the margins (in the language of boundaries). Systemists must actively seek such experiential knowing to enact truly creative improvement. The only answer to the problem of knowing the world better is to know the shadow aspects of the knowledge generating system. This requires truly radical methods and an extended epistemology, all shown to be available plentifully in other practices and cultures. Testimony is provided from two field projects that were a part of these inquiries, and from practitioner accounts.

Table of contents

<i>List of tables</i>	<i>vi</i>
<i>List of figures</i>	<i>vi</i>
<i>List of abbreviations</i>	<i>vii</i>
<i>List of publications and presentations from this research</i>	<i>viii</i>
<i>Acknowledgements</i>	<i>ix</i>
1 Introduction A: Situating the research	1
1.1 <i>A prelude and a discursive map of the ideas in the thesis</i>	1
1.2 <i>Introduction to the chapters</i>	7
2 Introduction B: Situating the researcher – my story	14
3 Three Perspectival Frames	27
3.1 <i>Introduction</i>	27
3.2 <i>Holism and reflexivity</i>	27
3.3 <i>Second-order science</i>	30
3.4 <i>Evolutionary perspectives</i>	35
3.4.1 <i>Malhotra’s Levels of Human Existence</i>	35
3.4.2 <i>Other evolutionary ideas</i>	42
3.5 <i>Consciousness and intentionality</i>	43
3.6 <i>Conclusion</i>	45
4 Systems Thinking	46
4.1 <i>Introduction</i>	46
4.2 <i>General Systems Theory</i>	48
4.3 <i>Origins and developments in the Sciences</i>	52
4.3.1 <i>Contributions from philosophy and the disciplines</i>	53

4.3.2 The Behavioural Sciences (biology, sociology, anthropology, ecology, economics)	55
4.3.3 Cybernetics, Systems/Control Engineering	60
4.3.4 The Physical Sciences and Complexity Theory	62
<i>4.4 A Summary – What is Systems Thinking?</i>	<i>64</i>
<i>4.5 Systems thinking applied to the management sciences – three ‘waves’</i>	<i>65</i>
4.5.1 The First Wave – Hard Systems Thinking (the functionalist approach)	68
4.5.2 The Second Wave – Soft Systems Thinking (the interpretive approach)	71
4.5.3 The Third Wave – Critical Systems Thinking	76
4.5.4 Werner Ulrich, Critical Systems Heuristics	81
4.6.5 Ramses Fuenmayor, Interpretive Systemology	82
4.5.6 John Mingers, Systems Thinking and Critical Realism	86
4.5.7 Ion Georgiou; systemic epistemology	87
4.5.8 Derek Cabrera: The DSRP framework	87
<i>4.6 The Theory of the Boundary Critique – Gerald Midgley</i>	<i>89</i>
<i>4.7 Critique of systems thinking using systemic intervention as a case in point</i>	<i>92</i>
4.7.1 What is missing?	92
4.7.2 Rationality and rationalism	94
4.7.3 Limiting assumption	96
4.7.4 Two problems	97
4.7.5 Illustrative Examples	101
<i>4.8 Conclusion</i>	<i>102</i>
5 An Ontology for Systemic Knowing	104
<i>5.1 The fundamental interconnectedness of things</i>	<i>105</i>
5.1.1 The systems response to interconnectedness	113
5.1.2 Time	115
5.1.3 Space	117
5.1.4 The ‘modern’ outlook and its irrationality	118
5.1.5 An ontology of being	119
<i>5.2. Reality is always being co-constructed</i>	<i>125</i>

5.2.1 The phenomenon of human knowing	126
5.2.2 A perspective from cognitive science	128
5.2.3 Enactive cognition	132
5.2.4 The action paradox and the language paradox	134
5.2.5 The systems approach to cognition	140
5.2.6 The Ontology of Knowing: Inside the Enactive Process	141
<i>5.3. Intelligence underlies emergent phenomena</i>	<i>149</i>
5.3.1 Purposing in Systemic Intervention	153
5.3.2 The Intentionality Paradox and an Ontology of Learning	154
5.3.3 The Ego Paradox and an Ontology of Doing	154
<i>5.4 Conclusion</i>	<i>157</i>
6 Introducing Innovative Knowing Methods from Other Disciplines	158
<i>6.1 Introduction</i>	<i>158</i>
<i>6.2. The Process explorations at Sumedhas</i>	<i>160</i>
6.2.1 History and background of process work in India	160
6.2.2 Sumedhas Perspectives and Stances	162
6.2.3 Methods	165
6.2.4 An example and testimonies: Theatre-based process explorations	167
6.2.5 Systemic ontology and Human Process Inquiry: Connecting theory and experience	176
<i>6.3 Cooperative Inquiry</i>	<i>178</i>
6.3.1 Origin and principles	178
6.3.2 Methods	182
6.3.3 Outcomes	187
6.3.4 Systemic ontology and Co-operative Inquiry: Connecting theory and experience	189
<i>6.4 Action Inquiry</i>	<i>189</i>
6.4.1 Origin and principles	189
6.4.2 Methods	191
6.4.3 Outcome: Three-Dimensional, Living Inquiry	195

6.4.4 Systemic ontology and Action Inquiry: Connecting theory and experience	197
<i>6.5 Holotropic Breathwork</i>	<i>197</i>
6.5.1 Origin and Principles	198
6.5.2 Methods	206
6.5.3 Outcomes:	210
6.5.4 Systemic Intervention and Holotropic Breathwork	211
<i>6.6 Conclusion</i>	<i>217</i>
7 Two useful models about knowing	218
<i>7.1 Introduction</i>	<i>218</i>
<i>7.2. The Four Ways of Knowing: Framework for an extended epistemology</i>	<i>218</i>
7.2.1. Experience as the ground for knowing	220
7.2.2 Practice consummates knowing	221
7.2.3 The social realm of practical knowing	222
7.2.4 Critical subjectivity	224
7.2.5 Understanding Presentational Knowing	225
7.2.6 An epistemology of presentational knowing	226
<i>7.3 ‘Knowing Differently’: Methods for an Extended Epistemology</i>	<i>227</i>
<i>7.4 ‘Knowing differently’ and systemic learning – the scope for research</i>	<i>229</i>
<i>7.5 Knowing differently in other traditions – an exploration</i>	<i>230</i>
7.5.1. Ways of knowing in Indian handicrafts	230
7.5.2. Preliminary learning outcomes	233
7.5.3 In Conclusion	239
8 Applying the Four Ways of Knowing to Systemic Learning	241
<i>8.1 Introduction and background</i>	<i>241</i>
8.1.1 Purpose	243
8.1.2 Learning Approach	243
8.2 The CTA Institute for Corporate Excellence	244

<i>8.3 CTA's activities and methods</i>	246
<i>8.4 My systemic learning at CTA</i>	247
8.4.1 Aims of the systemic learning exercise	252
8.4.2 Design	253
8.4.3 Follow-through	253
8.4.4. Evaluation	254
8.4.5 Outcomes	254
<i>8.5 Reflections</i>	256
8.5.1 The Deep Intelligence Field: corroboration from direct experience	257
8.5.2 The role of propositional knowing, cycling and collective learning	264
<i>8.6 Extended epistemology and knowing methods</i>	267
<i>8.7 The Knowing Universe of the Present Moment</i>	277
<i>8.8 Hodgson's Praxis Learning Cycle</i>	279
<i>8.8 Conclusion</i>	284
9 Immersive Systemic Knowing: A theory for knowing in practice	286
9.1 Introduction	286
9.2 Immersive Systemic Knowing: A rough cartography – how the pieces connect	288
9.3 Immersive Systemic Knowing: Another kind of map – what enlivens the whole	290
9.4 The individual and the herd: Shadows and prospects	292
9.5 Immersive Systemic Knowing and the goals of systems thinking	296
10 Conclusions	302
10.1 Overview	302
10.2 Origins and approach	302
10.3 Contribution to theory	303
10.4 Contribution to practice	305
10.5 Contribution to larger domains of knowledge	305

<i>10.6 Limitations and future directions</i>	306
<i>10.7 Reflections</i>	306
<i>10.8 Post script – ‘Walking the talk’:</i>	308
Appendix A	310
Appendix B	312
References	316

List of tables

3.1	The quadrants depicting the four perspectives of a holon	29
3.2	Malhotra’s Existential Universe Framework	39
5.1	Key ideas to consider for a systemic ontology	156
7.1	Ways of knowing	219
9.1	The four quadrants of a holon	293
9.2	The key requirements of a systemic practice	297
9.3	The systemic perspective and the implicate dimensions of the N3 mode of knowing	299
9.4	N3 in operation: suggested orientation/stance for the conscious mind in the four knowing ways	301

List of figures

Figure	Topic	
3.1	First-order observation	
3.2	Weak second-order observation	33
3.3	Strong second-order observation	33
4.1	Systemic approach to epistemology	34
5.1	Husserl’s present	142
5.2	The anticipatory present moment	147
8.2	The knowing universe of the present moment	277
8.3	The praxis learning cycle	283

9.1	Systemic knowing – interdependence	287
9.2	Immersive systemic knowing: a rough cartography	288
9.3	Immersive systemic knowing: another kind of map	291
9.4	The individual and society in immersive systemic knowing: some conjectures	294

List of abbreviations

4WK	Four ways of knowing
APM	Anticipatory present moment
CEO	Chief executive officer
CSH	Critical systems heuristics
CST	Critical systems thinking
DIF	Deep intelligence field
EUM	Existential Universe Mapper
GST	General system theory
HR	Human resources
HST	Hard systems thinking
ISISD	Indian society for individual and social development
ISK	Immersive systemic knowing
LSD	A psychedelic (mood altering) substance
MS	Management science(s)
NSC	Non-ordinary states of consciousness
OD	Organisational development
OR	Operational research
PLC	Praxis learning cycle
SI	Systemic intervention
SJ	Society of Jesus
SSM	Soft systems methodology
SST	Soft systems thinking
TSI	Total systems intervention
VSM	Viable systems methodology

List of publications and presentations from this research

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CHAPTER ONE

Introduction A: Situating the research

1.1 A prelude and a discursive map of the ideas in the thesis

In this section, I am providing a sweeping overview of the key ideas with which I propose to extend the effectiveness of systemic intervention (Midgley, 2000) and in the process, offer some theorisation of value to systems thinking in general. Systemic intervention centreplaces the idea of the boundary: the process of gaining knowledge about the world involves making boundary judgements about what to include in the purview of observation and inference (object side); similarly, the process of deciding how to create this knowledge is also based on boundary judgements (subject side). I intend to explore what *knowing* about the processes on the subject side entails, and how *extended ways of knowing* can be applied to this relatively unexplored aspect.

The overview in this section does not correspond to the chapters of the thesis. An introduction to the sequential development of ideas in the chapters follows in the next section §1.2.

Systems Science, when it was birthed as a field, was proposed to be a definitive answer to the ills of modern thinking associated with mechanism, reductionism and other limitations (Bertalanffy, 1956; §4.1, §4.2). Although the field has rapidly grown and matured in sophistication, it has failed to fulfil those initial expectations (discussed in §4.3.1). At the root of this tragedy is the fact that it is still (for the most part) embedded in first order science (the science of exploring the world; in contrast, second order science is the science of reflecting on these explorations; see §3.1 for discussion), and many ghosts of the Enlightenment still haunt its formulation and practice. Given that the ills that plague it arise within the cultural *zeitgeist* of Western rational thought (a blip in human civilizational history), it is worth placing the search for bolstering its imagination and outreach in the cultural *weltanschauung* of human civilization as a whole. This is not just my romantic idea; it is the precise conception that informs the life project of a leading sociologist, Richard Sennett. His scholarly work on the meaning of human productivity and value, *The Craftsman* (2008), lends gravitas to a white paper I created for the Planning Commission of India on the largest,

most successful manufacturing sector in the country: handicrafts, which the planning elite call a ‘sunset industry’ and bury in the footnotes of official documents (Rajagopalan, 2011). Sennett’s finding, to summarise rather drastically in a sentence, is that craftsmanship as a mode of production has deep lessons to significantly inform the current bankruptcy in ideas about work, productivity and knowing, which characterise modern economic and social thinking (2008).

This vignette serves to underline one fundamental lesson that, as a management professional, I grasped in my early working years: the knowings carried by people who work with their hands are often more truly precious than those possessed by us with strings of degrees after our names. This theme undercuts the more sophisticated argument developed in this report, and is expanded in a somewhat discursive, rambling fashion. It is just as well, however, that we make note of this at the beginning, since it is an apt reminder that, once we have entertained a rapture with our own capacity for intellectual sophistry and indulgence in philosophical skulduggery, we must come back to groundedness in practical wisdom, where it all begins and ends. This idea can well abruptly affront modern rational sensibilities: I will establish that it is not such an atavistic, reactionary or naïve idea as it may first appear. My preference for the verbsy form ‘knowings’, rather than the straight noun form ‘knowledge’, is important: knowledge, as a noun and a thing, is content (frozen, fossilized, named, claimed, and dead); whereas knowing represents a process, a becoming. It contains both a latency and a realized component, carries connotations of tentativeness, and has not yet been named, claimed, or killed.

The marginal status of the craft sector in India finds its echo in the marginalisation of systems thinking in the world of management science (in turn, management science and operational research, are, according to their proponents, given short shrift in the real world of operational management, where fads seem to rule – see Checkland, 1981; Jackson, 1995). Both crafts and systems thinking are sophisticated systems that are insufficiently recognised and valued in the mainstream. My acquaintance with the travails in the former provide a microcosmic laboratory study that enables clearer vision in the larger latter field, much as my work in small community projects helps me diagnose organisational dynamics (and repair pathologies) in large corporations in my consulting practice.

Diagnosing the ills of the systems discipline and daring to proffer a few nostrums, calls for maximal guile and dexterity. This research takes a two-pronged approach. First, I suggest that it is necessary to view systems thinking through the lenses of second order science (Muller & Riegler, 2014a) and evolutionary (or integral, a related and sometimes interchangeable term) thinking. Second-order science provides us a useful conceptual handle through the idea of strong second order reflexivity: how a knowledge generating system can look, not only at itself, but also at the dynamic unfolding patterns of interactions that ripple across the system of interest that it is interacting with and simultaneously embedded in. Evolutionary theories (see §3.4) illumine the enterprise of systems thinking and point to the next development. This they accomplish by framing an understanding that systems thinking, and a progressive sophistication in the understanding of systems, themselves correspond to an evolutionary arc. This meta-framing helps explain several phenomena, for example, as to why dialogue between people at certain different existential ‘levels’ of growth is difficult, both within the systems enterprise and across humanity at large.

Next, it is important to interrogate the foundational premises of systems thinking to exhume the reasons for the buried gap between – a) its epistemic, political and pragmatic goals and b) what has been achieved to date (see §5.3.3). The gap partly results from the difficulty in walking the talk for the advocates of systems methods. While recent findings about the nature of reality from frontier systems studies is assimilated into the systemic ontology (for example, the ideas of interconnectedness and autopoiesis), there is no corresponding extension of this into the body of methodology, methods and practice (chapter 5). These are areas of deep paradox and conundrum: how is one to act on the understanding, say, that the idea of a bounded and solid physical entity that appears to be my body-mind is not really a definitive truth, but simply the way my perceptive-cognitive apparatus constructs the world? This is but one example of the new understanding of reality (or ontology) that has to be characterised for the purposes of our inquiry. This ontology has to be matched to a new epistemology that is adequate to it. I believe this is the key missing part in the systems literature. The epistemic gap corresponds to the nature of limitations in Western thinking, and Western ideas about the fundamental constituents of reality – time and space, causality, consciousness, cognitive processes, and the like. Methods corresponding to such an ontology and epistemology are possible. These methods do exist in systemic practice, but they have not been adequately characterised in the

literature on systems methodology. Implications for the future of the discipline naturally flow from these considerations.

Systems thinking aims to offer a transdisciplinary framework that could solve complex problems (example, Jackson, 2000), by providing a unifying basis to understand the organisational principles across diverse domains (example, Bertalanffy, 1956). While it has come a long way in helping us characterise and understand many underlying dimensions of such problems (for example, Mingers & White, 2010), such enhanced understandings have not really helped us become better at solving these problems. On the contrary, the problems seem to be increasing; and the possibility of dealing with them rests more on optimistic hope and confidence than in any assured data about results obtained or of the effectiveness of methods (White, 2006; Midgley et al, 2013). Meanwhile, while I sit down to write this chapter in mid-September 2015, a science bulletin appears– the first loophole-free experiment to test the phenomenon whereby distant particles influence each other and act in strange ways that can't be explained by common sense (or, for the most part, the laws of physics) has been successfully conducted (Hensen et al, 2015). This now confirms the phenomenon dubbed 'quantum spookiness'. Although this may not mean that spookiness matters in terms of causality in the social world, it does indicate that there is more to be accounted for by systems thinkers than what our current concepts can contend.

In seeking to solve complex problems, the key goal that systems thinking sought to realize was achieving comprehensiveness – the ability to cover or sweep in (example, Midgley, 1992a) all germane aspects of the situation under consideration. After Ulrich (1983), having acknowledged the impossibility of *comprehensiveness*, the emphasis has shifted to exploring boundaries. Boundary critique (Midgley, 2000) has extended the scope of scrutiny to the subject side. I am drawing attention to the link between the situations we deal with, and the multiple perspectives it affords various participants: thus highlighting the new goal of a better type of *comprehension* – an ability to understand situations more deeply. By including multiple *perspectives*, systems thinking can deal with prejudices. It is now time for systems thinking to pit itself against *presumptions* – its own, for example, that of bringing about improvement. I am privileging a shift of emphasis from *Thinking* to *Knowing* – a move from mere intellectual grasping or characterisation of something, to a more profound sense of its apprehension; from cleverness to wisdom – one that affords and affirms a response in

which greater certitude and consensus can repose. This will become clearer as these arguments are developed; since the second-order reflexive knowing of the link between the situation and the perspective, and dynamic action in this kind of reflexive knowing, is the central focus of this thesis.

In the cradle of the modern West in which systems thinking has grown, the phenomenological and interpretivist schools of philosophy trace the roots of consciousness (knowing) to *intentionality* (Husserl, 1964) which gives rise to a whole set of phenomena that I dub as the *universe of becoming-striving*. Other traditions, such as Eastern thinking, recognise that consciousness also has another mode: that of non-intentionality (Herrigel, 1953), which gives rise to the *universe of being-abiding*: one in which there is no desire to accomplish anything, only an alert and aware sense of being: a sense of profound ease, contentment and oneness with the world. Aware connecting with this universe brings one in contact with *the deep intelligence field*, an idea I posit based on multiple sources, but essentially acknowledging the spookiness and the vast amount of coherence that exists in nature across various domains (Laszlo, 2007; see discussion at §5.1). I argue that overcoming the sense of duality and fragmentation is impossible in the thinking associated with the universe of becoming-striving; it is only possible in the knowing associated with the universe of being-abiding (ergo, systems thinking for Spooks?).

Although these two modes exist in simultaneity, being aware, reflexive and responsive to this simultaneity of both universes requires a cultivated approach and procedure. Such an approach is the antithesis of the methods of science and rationality, which lie at the heart of much modern Western thinking. From these moorings, proceeding with only the recognition and the imperatives of the universe of becoming-striving, systems science and systems thinking seek to privilege acts of *inquiry* or *intervention*. In contrast to this, I privilege the term *knowing*, seeking to communicate a generative, rather than an instrumental orientation, which necessarily invokes both universes in the manner described by my model of systemic knowing (chapter 9). My research methods correspond to what has been described as second-order science (Müller & Riegler, 2014b; see §3.3).

I begin my explorations with three ideas basic to my systems ontology, and show that the current systems methods do not really correspond to these. These are about systemic interconnectedness, enactive cognition and teleonomy. Corresponding to this

gap in methods in systems thinking (in relation to the systems ontology), I demonstrate four contemporary domains of practice within the ‘modern’ *zeitgeist*, which answer to this requirement (there are many more, but this is one area which is fragmented and lacks cohesive theoretical synthesis). These are drawn from four major world regions and cultures for the reason that they have all demonstrated maturity and provide documented results.

Next, I elaborate a new epistemology commensurate with this ontology, which is able to explain the highlighted methods, and therefore can inform an adequate practice.

The possible characterisation of a suitable type of method draws on the four domains referred to earlier. It also draws on documented testimony from the area of arts-based research, where an elaboration and application of Heron & Reason’s (1997) epistemology has been accomplished, which I corroborate against my own experiments in application contexts. Detours into my experiences, and reports on two field studies carried out as a part of this inquiry, will add, perhaps, some spice to this text. While my personal testimony is drawn from corporate and community work in India (and supported by forays into relevant literatures), I believe that my conclusions apply well to the field of systems thinking, within which my arguments are situated.

I argue in the concluding chapter that the ideas I have knitted together provide a useful backdrop to illuminate the gaps, puzzles and failures across all the varieties and flavours of management practice and applied social sciences.

Unfortunately, what I provide is only a preliminary formulation – a rough guide and a pointer to the ways in which we can, individually and collectively, build a learning praxis for ourselves; there is no magic wand of a meta-theory that automatically explains everything which can then be applied ‘rationally’ to the ‘problem-solving’ obsession of ‘modern science’. Experience, and more properly, correct learning from practical experience, resulting in mature wisdom, counts, in my opinion: that is what a learning praxis, faithfully followed over time, provides. This flies in the face of the contemporary Western society’s obsession with sheer intellectual wizardry, especially when it is accompanied by a juvenile narcissistic ‘charm’.

With the central focus of this report being the value of practical knowing, the irony of writing a theoretical paper about this is piquant. The reader is warned that this does

occasionally infiltrate some surprises or a wry, poignant humour into these pages; although it is an academic exercise.

1.2 Introduction to the chapters

In this first Chapter, I am providing an overview of my thesis: situating this research effort in a larger perspective about the application and value of systems thinking, especially in developmental contexts. A sequential outline of the contents of each chapter follows:

In **Chapter 2**, I situate myself, providing a narrative of my own background and experiences, which have led to certain perspectives and priorities culminating in this research effort. In the main, the narrative traces how, beginning with a total fascination for science and modernity (being the son of an atomic scientist), my peregrinations traversed a slow, unwilling path into an acceptance of the extraordinary ways of knowing amongst marginalised communities and adventurous persons that were outside the remit of the scientific and rational paradigm.

In **Chapter 3**, I seek to describe three perspectival frames that I find useful to my project of interrogating systems thinking: the idea of second-order science, the idea of an evolutionary perspective, and the operation of two modes of consciousness. I discuss the meaning of the terms ‘holism’ and ‘reflexivity’ in the context of my two frames. Briefly, first order science is the science of exploring the world, while second order science is the science of reflecting on these explorations (Second Order Science, 2015). I invoke the idea of strong second-order reflexivity (as opposed to weak reflexivity) to denote a capacity that systems thinking now lacks, as well as to characterise the way I shall examine systems thinking (Hodgson, 2015). I briefly describe a variety of evolutionary models (example, Malhotra, n.d.), and explain how these help to understand both the developmental journey of systems thinking and issues related to its application. I also introduce the idea that consciousness operates in two modes: the universe of being-abiding and the universe of becoming-striving. The Western phenomenological tradition, resting on intentionality as the key originating impulse of consciousness, only recognises the latter. This results in subject-object duality and all sorts of fragmentary knowing, which can only be overcome from the other mode of consciousness. The two modes operate always and are in simultaneity. The question is about awareness of this. To enable a clearer appreciation of this, I

indicate the paradoxes that arise from the ontological principles underlying most systems thinking, and suggest that, corresponding to each of these two modes of consciousness, we need a separate ontology and epistemology.

In **Chapter 4**, I provide a brief sweeping overview of the history and development of systems thinking. The extant literature has detailed accounts of this process, which I do not seek to duplicate. My focus is, firstly, on recounting the key milestones; and secondly, on tracing its ontological and epistemological premises and identifying a gap, which my research seeks to address. I recount the origins of the discipline with the idea of General Systems Theory (Bogdanov, 1910-13; Bertalanffy, 1956), and key developments of systems ideas in the various sciences, which I have lumped together. These are: the contributions from philosophy and the various disciplines to systems thinking and the idea of a general systems theory; the behavioural sciences (which includes biology, sociology, anthropology, ecology, economics); engineering (which includes systems/control engineering and cybernetics); the physical sciences, including chaos and complexity theory; and finally, management and organisation theory. I summarise the idea of systems thinking as a ‘trans-discipline’ (because its ideas apply across several disciplines in the same way that statistics does), that is composed of a vast body of theory, methodology and practice. It is best described as the application of concepts from systems theories to frame our understanding of the world and about possible future action - what ought to be or could be (Ulrich, 1983; Fuenmayor, 1991a, 1991b, 1991c). From a systems thinking perspective, systems theory and models are applied to develop an appreciation of phenomena; there is not necessarily an assumption that the systems exist in the real world (Checkland, 1981; Midgley, 2000). It applies a range of methodologies that aim for an adequate (not absolute) comprehensiveness in the understanding of extant phenomena, and it seeks to produce more widely acceptable transformations (Jackson and Keys, 1984; Flood and Jackson, eds., 1991).

Next, in the same chapter, I go on to describe the development of applied systems thinking, frequently viewed in terms of three successive waves (Midgley, 2000), and I summarise their contributions and limitations. The first wave is frequently referred to as hard systems thinking (HST), underpinned by a functionalist philosophical stance and assuming that systems are representative of reality (Checkland, 1972), while the second wave, soft systems thinking (SST), emphasized the intersubjective construction

of realities. SST uses dialogue and appreciation of mutual perspectives as starting points for explorations towards an accommodation of interests and action for improvement towards shared goals (Jackson, 2000; Midgley, 2000). SST was seen as an advance over HST because it recognizes the importance of subjectivity. However, it is unable to deal with issues of power and social change, stemming from its neglect of objective social conditions (Jackson, 1982), which include conflicts of interest that cannot be solved by dialogic consensus (Thomas & Lockett, 1979) or structural conflict, which subjectivism and idealism prevent it from coming to terms with (Mingers, 1984; Oliga, 1988, 1989a, 1989b, 1990). The third wave, which is the current reigning paradigm, is critical systems thinking (CST), which recognised the fragmentation in the field of applied systems thinking owing to isolationist and imperialist trends (Jackson, 1987), and attempted to build an overarching framework, which would answer criticisms of theoretical insufficiency (example, Lilienfeld, 1978; Mingers, 1980).

CST has matured over two decades, and I have dwelt in some detail on one of the later approaches; namely, systemic intervention (Midgley, 2000). I have shown how this approach (as an example of the most recent wave) does not altogether meet the requirements for a strong second-order science approach; fails to detail in method one part of its own model (the idea of applying boundary critique in self-reflection); and cannot show how its methods correspond to the fairly basic ontological premises of systems thinking that it embraces in its philosophy.

One clear weakness in theory arises from the lack of internal consistency between espoused principles and suggested practice. Apart from this, an obvious limitation relates to the fact that this approach must fail in a situation that precludes any possibility of dialogue (for example, where brutal social oppression based on power is maintained). It is rather ironic that Midgley (1997) criticises Ulrich (1983) for precisely the same thing, but I aim to show that Systemic Intervention is no better in this regard.

The second problem, linked to the first, is the idea that what we need in order to solve the problems we have created by existing thinking is simply better thinking. If the thinking is systemic, and takes into account multiple perspectives and all the interlinked problems we have uncovered so far (such as impacts on gender, ecology, the poor, future sustainability, etc.), and if we could get people to cooperate and apply

these systemic solutions, the assumption is that we should be able to lick the ‘problems’ (and any systems term can be substituted: ‘wicked problems’, ‘messes’, ‘problematique’, ‘system of interest’ or ‘situation calling for action towards improvement’). The ideology underlying this, indeed, is a continuation of the myth of human transcendence over nature associated with first order science rationality. Here, the myth takes the form that rational analysis (of the systemic variety, of course) will help ‘control’ and ‘solve’ the problem. Of course, we have elegantly substituted words like ‘improve’ the ‘situation’ to pretend that we in systems thinking have overcome this myth about management of the larger sphere of nature. There is indeed a possibility of improvement; however, I aver that this requires the transcendence of rationality, and we need to tap into human capacities beyond the rational (for now the reader might think in terms of those forms of knowing that are embodied in practice or come from creative, symbolic expression rather than rational analysis, even of the dialogical kind).

Bateson (1972) and Churchman (1979a) argue for a method that transcends mere rationality: the latter, in Bateson’s terms, is necessarily pathogenic and destructive of life. I suggest that the capacity for critical reflection on the boundaries of knowledge generating systems (subjective selves) can be greatly enhanced through extended ways of knowing.

Apart from this critique, I also dwell on five specific recent contributions, which to my mind merit some elaboration. These relate to the works of Ulrich (1983, 1986), Fuenmayor (1991a, 1991b, 1991c), Mingers (2006, 2014), Georgiou (2007) and Cabrera et al (2008, 2015). These are very briefly mentioned and considered in relation to the premises by which I am evaluating systems thinking – in the main, the ways of knowing framework and the two modalities of consciousness (outlined in chapter 1 and developed in later chapters), to indicate that these too fail to integrate the larger perspectives I am drawing on.

This, I believe, stems from the absence, largely, within the dominant strand in modern Western thinking, of an ability to conceive of ways of knowing (other than the rational) that can be held and appreciated within individuals and shared amongst groups and social systems, which provide another basis to act upon. Any shared understanding or basis for action, to the majority Western mind, has to rest on language and rational analysis or dialogue. This privilege given to rationality and

language carries over into CST, and represents a hangover from first order science that has not been sufficiently examined, at least with respect to the idea of systemic or holistic knowing. This becomes a valuable area of exploration, about which this thesis seeks to provoke knowing.

This blind spot confuses; or rather, it substitutes cleverness for wisdom, clothing in a new sophistication of language the very blight of the modernity and Enlightenment project whose consequences are by now familiar to all: rationalism. In my use of this term, I refer to the implication that intelligibility (or the basis for understanding), rests solely on explanations based in logic and communicated through language. In effect, systemic thinking has become limited to rationalism. We could even go so far as to call this affliction ‘systemism’, similar to scientism.

I conclude chapter 4 by pointing to three real life examples that ought to be amenable to systemic intervention; and yet systemists would be hard put to deal with them.

These examples are drawn from real life, where methods discovered in other domains have successfully dealt with the situation. This calls for a discussion of such methods from other domains, which becomes the subject later for chapter 6.

In **Chapter 5**, I characterise my systems ontology, corresponding to recent systemic findings about the nature of reality. I suggest that an idea of *the interconnectedness of all things* (example, Laszlo, 2007); the idea of *enactive cognition* (Varela et al, 1991), and an idea of *the teleonomic principle* (Bohm, 1980; Hodgson, 1993), need to be central to a systems perspective. I characterise *the deep intelligence field* as a significant explanation for interconnectedness and recent findings from multiple domains, and harness support from a wide swathe of literature from diverse fields that supports this idea, as well as from domains of practice. I also introduce the model of the *anticipatory present moment* from Hodgson (2015) as an epistemology that accords with the idea of enactive cognition.

In **Chapter 6**, I discuss four contemporary domains of practice within the ‘modern’ *zeitgeist*, which answer the problems I have raised in relation to systems thinking (in chapter 4). These are the Human Process Inquiry from the Sumedhas Academy in India (www.sumedhas.org), Cooperative Inquiry from the UK (Heron, 1996), Action Inquiry from the USA (Torbert, 1987), and Holotropic Breathwork from Europe (Grof, 1988). Drawn from four major world regions and cultures, they have each

demonstrated a maturing of method (and theory, in two cases) and evidence documented results. I show that the four methods correspond to the new ontology described in chapter 6.

Following that, in **Chapter 7**, I offer one epistemological model commensurate with this ontology, which is able to explain the highlighted methods, and therefore can inform an adequate practice in systems thinking. I detail the *four ways of knowing framework* from Heron & Reason (1997). To explore this framework, I chose to conduct an intensive field research project in India, in which I examined how the four ways of knowing were being deployed in a traditional learning situation. For this, I apprenticed myself to a master sculptor in Bangalore and learnt the craft under him, producing a pillar ornament in granite as one surely concrete output of my doctoral exertions. This yielded significant insights about the principles for deploying the four ways of knowing in a learning context.

In **Chapter 8**, I discuss my second field research project, wherein I examined how the principles of deploying four ways of knowing can be transferred to a systemic learning context. This was attempted through an intervention in a leading Indian firm in the corporate leadership and organisational development space in India. Significant insights were yielded from this inquiry. I found experiential corroboration for the deep intelligence field. I also realised that the *four ways of knowing* framework and *the deep intelligence field* can be combined with the *anticipatory present moment* to yield a more complete understanding of the knowing process. I have termed this synthesis the *knowing universe of the present moment*.

Next, in the same chapter, I describe the *praxis learning cycle* (Hodgson, 2013), which provides another epistemological model that corresponds to the universe of becoming-striving (the four ways of knowing corresponds to the universe of being-abiding). The ontologies that correspond to these are *anticipatory present moment* (Hodgson, 2015) and the *deep information field* [RR] respectively. This corresponds with my argument built up in chapter 6 that a separate ontology and epistemology corresponding to the two modes of consciousness need to be characterised to comprehend the phenomenon of human knowing more comprehensively. The eventual development of my framework, called *Immersive Systemic Knowing*, based upon these elements, was informed by two intensive field research projects that I carried out in India.

In **Chapter 9**, a cartography of these four abstract elements and the nature of the spaces they hold is described. This provides us a model of systemic knowing – the Immersive Systemic Knowing framework. This is a crude preliminary formulation, an abstraction as an aid to comprehension, which will doubtless be worked upon considerably in time to come.

In this way, the gap in systems thinking relating to the means to acquire significant knowings relevant to a situation of inquiry, which overcomes the limitation of operating from a singular rationality, is addressed satisfactorily. It may be noted that these methods correspond to the wisdom and approaches that have long been applied by humankind, and have now been rediscovered and redeployed in recent sociological practice, with the corresponding development of supporting theory (example, Sennett, 2008).

In **Chapter 10**, I discuss the significance and limitations of this research enterprise, and consider implications for further work.

CHAPTER TWO

Introduction B: Situating the researcher – my story

Before proceeding to outline the arguments of my thesis, it is important to recognise that the ideas I have constructed arise from a particular perspective – mine; which I wish to share in some measure by telling my story. I draw connections to some of the positions I am espousing with my experience, and the reader may notice other patterns. This is in keeping with the idea of reflexive second-order science and the critique of the subjective boundaries (Midgley, 2000). There could be a thousand ways to construct a narrative – so this is just one construction.

I grew up in an unusually privileged setting. My father worked at a nuclear power plant, which was, logically, situated in a sparsely populated area. This meant that there were hundreds of acres of ample verdant countryside to roam and explore. I refer to privilege because, as children in a well-appointed urban enclave, we also had access to a luxurious abundance of nature. Thus, I grew up enveloped and informed by all its pristine sounds, textures, sights, rhythms, cycles and seasons. Perhaps I was especially alive to this because I spent my initial four years in a bustling metropolis, which had a completely different set of sensory experiences. The magic of nature bewitched and captivated me. Most mornings I would wake up to sit at my balcony and commune silently, alone, for a languid hour or more with the sun as it rose between the hills, watching birds, animals and peasants wake up and sing their harmonic paean to life. As the seasons changed, the grass in the pasture would grow to six feet, turn to gold, be cut, stacked and carted away; and the parched stubble would await the next monsoon. Drongos became abundant during and shortly after the hay harvest, and bee-eaters and cattle egrets. Other commonly seen birds included the tailorbird, the baya weaverbird, the iora, oriole, koel, red-vented and white-cheeked bulbuls, mynas, the hoopoe and innumerable warblers, babblers, minivets. Later in winter, the red-wattled lapwings and a variety of wagtails would be seasonal visitors. One ashy wren-warbler nested every winter, for many years in a row, in a bush by our kitchen window: the lusty and melodic singing of this mother of a few ounces provided limitless succour and energy to my own harassed and overworked mother. We would be assaulted by various kinds of insects that, especially at the onset of the monsoon, deluged us;

entering and swamping the house and every available space. Then there were the frogs, and naturally, the snakes. Frequently, in the hot season, we would enter a bathroom only to find one snuggled in a cosy dark damp corner or inside a bucket. I handled them and interacted with them so much that I no longer feared snakes or scorpions, only felt respect tinged with fascination.

There was an Iranian boy at school whose father owned a large orchard with alphonso mangoes (the best!) and chikoos (*manilkara zapota*), where we often spent summer holidays. All our groceries, especially fruit and vegetables, came fresh off the farms nearby and food has never tasted as good to me in my later years. In the summer, my father would always have a large basket of mangoes ripening in straw at home; and when they were down to the last half dozen, the next basket would arrive – right until the season was extinguished.

For the first two years, I had to wade through grass taller than me for half a kilometre to join the road to school. I did keep a lookout for the king cobras – once I fled from one that I imagined chased me; my neighbour ‘Uncle’ Redkar found its burrow that evening and it was hunted and killed. I helped my parents with the garden; watched hundreds of caterpillars, spiders, mantises, bugs and beetles; kept cocoons in little match boxes and waited for the moth or butterfly to emerge; watched snakes mate in our *henna* fence and cows give birth just across the way; found moulted snake skin frequently; collected quartz crystals and mica (which served as our own kids’ currency); lit fires from flint stones and sat around in the jungle, eating wild berries, feeling an animal alertness and aliveness and a unity with the drama and magic I was witnessing, that is indescribable. Once, when we were walking out at night, a jackal somehow entered the encampment and we ran and hid inside the school bus parked nearby for an hour until he had gone. When I was older, I ran a merry little monopolistic business earning pocket money by catching frogs for dissection in the biology class. We stumbled upon streams and hidden caves and regions in the jungle for which we made our own secret names. Once we discovered a small clearing with sacred trees, at the base of which was a makeshift shrine - there would be chicken feathers every Saturday morning at that place (the use of the plural is a reference to the company of one sole other adventurous friend, and it was always the pair of us who dared to reach bounds). We put our ears to the rail track and estimated the time it would take the train to reach us – we became pretty good at that. We could navigate by

the sun, the stars and the few blips of landmarks in an otherwise rather flat and uniform landscape. We learnt all on our own to track animal trails. We fished, gathered them in little jars, and flew kites in the sky. I conducted experiments with light, lenses, magnets, electricity, grafting, sowing, and home chemistry; took apart and learnt on my own to repair watches, transistor radios and bicycles; and devoured everything possible. I embraced science and rationality, and prided myself on conquering my fears by investigating the sources of strange sounds at night and other phenomena at an early age.

As against this, my home itself was traumatic. At first, I did not understand why I had been looked after by my grandparents for some initial years (I later learned that I was sickly and needed medical attention that was only available in Bombay). I suddenly came home to my parents, to find my two younger siblings already ensconced in their favours, one to each! Far more upsetting was the fact that my father would frequently rage at my mother, sometimes slapping or beating her. This was a source of enormous shame and guilt for me – I felt somehow contaminated, warped, and subhuman – other families were not like this. Because of this, I could not truly assimilate and belong with people in the outside world. Remember, I was in a new place, with a new school and friends to deal with. Added, was the cultural shock that came from the presence of several Canadian and American children, whose parents were still around to complete handing over the nuclear plant. My encounter with these children and their roller skates, bubble gum and pyjama parties – all being exotic trappings to me at the time – added to the alienation.

The dysfunctionality in my primary family system led to my autistic younger brother having a series of breakdowns, eventually being labelled schizophrenic. This unleashed a complete new set of dynamics. I took early charge, hunted for responsive doctors and treatment systems until (years later) we fought this scourge off completely and he took up a normal life. There were vast territories of psychology and psychiatry I negotiated – dealing with his states of mind that were sometimes paranoid and sometimes catatonic for hours together. Somehow, at the age of 17, rescuing him became a mission for my own redemption; and of course, at that age, you believe you can accomplish anything – the idea of limitations sets in later. I learnt some incredible lessons at the depth of my being (mainly about social and political deconstruction, the role of language and culture in maintaining or interrogating social systems, and whole-

being awareness), which are still unfolding and seeking articulation in my rational structure.

Given this private horror and public shame, and the ever-present feeling of being an outsider that I consequently nursed, I had a penchant for being dreamy and reflective: immersed in books, experiments and the outdoors. Along with another scholastically inclined friend, I devoured a college-level physics text by George Gamov with extremely challenging questions at the end of chapters. As a child living in a community of scientists, I naturally chose to graduate in pure sciences. In sum, during this period, I truly valued the rational and scientific approach, and became atheistic and later agnostic, for some years.

I next elected to complete a post-graduate degree in rural development, the key reasons being that it provided a full scholarship and further offered the possibility of life in the countryside, not altogether stuck in a metropolis. These years shaped me deeply - I travelled to Bihar, lived amongst the poorest, and for two months I ate only *sattu* (a kind of gruel) for all my meals. *Aloo sabzi*, a dry potato curry, was served to me alone with flourish as a special treat on Sundays. Included among the experiences seared into my psyche in those 60 days was waking up one morning to the sound and sight of a cluster of huts ablaze - belonging to the low caste, set alight by the landlords simply 'to teach them their place'. This was a roughly bi-annual routine; "go back to sleep, you can do nothing", I was told. I witnessed with fascination, Fr. Phil Manthara, SJ, of Khagaul, Danapur, carry out Frierian education amongst the low caste people and the village children; attended an underground meeting of communist guerrillas where the supply and issue of guns to the cadre was sorted out for the assassination of people in other warring political parties; set up ten milk cooperatives (the spade work was completed earlier by a team) and one leather cooperative spontaneously; lived for two weeks in a village where, with all the other menfolk, I had to participate in the collective ritual smoking of marijuana twice a day; and spent the most perilous two hours of my life in a city park dissuading a colleague from using his gun (he kept pulling this out and waving it about, which made it a little difficult for me to focus on

what I was saying), to settle a score with our boss over a reprimand for poor performance¹. It was a memorable baptism into rural work.

For the following ten years, I worked in community development at grass roots level. Increasingly, I grew to admire the knowledge and wisdom possessed by various marginalized peoples, which often surpassed scientifically trained people on specific matters. I began to appreciate the significance of cultural dimensions to meaning, which significantly mediate the developmental dialogues and processes between the interveners and communities. Three vignettes will illustrate.

In 1992, in the village of Take Harsh (Vaitarna taluka, Igatpuri block, Maharashtra, India), I was approached by the headman, Santu Rama Binnaur, to help build a lift irrigation system. Over eight months, the engineers mapped the extensively hilly and undulating terrain, and discussed their drawings and plans with the farmers several times. Each time, the farmers found an error – B's land is at a higher level, so it cannot receive water channelled by gravity down from A's. Each time, the topography was measured again, contours redrawn, but a new error would surface. Finally, in exasperation, I asked the farmers to draw the map, and the engineers to verify this with their instruments. Sure enough, after three days of traipsing around with their dumpy levels, they confirmed that the farmers were right. What made me sit up and completely revise my smug understanding of the superiority of schooled knowledge was the fact that the final design, chosen from 8 competing options – 350 acres of irrigation coverage, one specific point from which to lift the water from the reservoir, 2 kms. of zigzagged pipeline, and three points for water distribution – matched to a T the transect that the village headman had walked me through, while describing his dream project to me that first day. Later, I realized that these farmers depend on the rains and on managing the water spill-offs, not only for their livelihoods, but for their very lives. They know the topography and drainage as well as we know our literary/engineering alphabets.

¹ Both the boss and I were not shot at. I recently visited that rather unique part of the country again, after exactly 30 years. While there is some outward change, these gritty realities and feisty attitudes to survival remain intact, along with pervasive grime and crime.

In the previous year, in the village of Take Devgaon, I stumbled upon a widowed elder woman, all alone and helpless, sipping tea in her hut. Her situation was abysmal - starvation being the primary theme, yet something about the way she told me her story made it the single most importantly transformative moment I have had in my life. I realized that her narration did not contain the slightest trace of rancour, blame or ill will towards anyone for her situation – and this was clearly not resignation or a fatalistic attitude, but a spirited meeting and embrace of life and reality as it unfolded and offered itself to her. From that day, I have only one goal in my life’s bucket list, and will never need another. This is to be able to acquire at least half as much personal dignity and agency as that unnamed lady displayed to me in that moment. Much has been written about the poor and disenfranchised knowing about the material aspects of their disempowerment or disenfranchisement, and about even the technological aspects (such as farming, irrigation, relevant engineering) in improving their own context. Some documentation can be found about their resilience, compassion, wisdom, courage and other attributes. Personal biographical narratives and testimonies of professionals engaging in such situations do talk of how they have learnt and grown in these respects from engaging with these peoples. It is time we recognized this as a distinctive resource in its own right that could provide ways of realizing improvement, not just personally or locally, but in terms of valuable and unique pointers and answers to global dilemmas and developmental conundrums. This will make more sense when I expand on this theme later; I will discuss the fundamental challenge of social development being related to an inner growth task for all interveners - a task that involves reconciling with our own shadow selves.

In those same years, as I worked with subsistence farmers who scratched a living out of barren rocky mountains, the international charity, which funded my project, hired a famous agronomist² and sent him along to advise us. The scientist, who had no previous experience of our sort of agro climatic zone, swooped in and out in two days. He sent in a report that almost cost me my job: my tribal farmers were practicing ‘primitive slash and burn’ agriculture and I had not done anything to arrest this

² He had recently retired as head of India’s premier agricultural research centre.

blasphemy! Over the next two years, he set up a series of controlled experiments into which huge resources were poured. At the end of these trials, he issued a formal retraction that completely reversed his former opinion: he discovered that the simple looking (yet in reality complex) practice of the farmers was indeed the most cost effective and sustainable way of resting the soil, replenishing it with potash, and burning away seeds of weeds, insect eggs and cysts, to raise the best possible nursery in the circumstances. After all these years, I discovered the formal underlying systemic principles involved in an interesting vignette that Ashby (1958, 362) shares: his story nearly parallels my report. Yet an even more elegant illustration of all of this is to be found in the account of Fukuoka (1978, 26-7), who discusses his ideas about the science that still drives the research projects of students sent to investigate his farm.

There is a postscript to this agriculture story, illuminative of a counter approach. The local Open University appointed a new head for the agriculture department. This new Director was keen on extending resources and investigating practices amongst the marginal farmers in the district. In the course of his travels and consultations, he repeatedly heard news about a person, PN, who visited these same pockets and provided amazing guidance to farmers. He tracked down and hired PN – under the most non-academic terms possible. PN would only work for the University on the express condition that he would not participate in formal teaching or research, and would spend as many days as he liked visiting farmers in their fields. The Director accepted this; his only request being that PN share his experiences with colleagues in the department and take them on farm visits when possible. I requested that PN visit our farmers. As we travelled together, he told me his story. He was a former sales representative for a seeds and pesticides company, and had quit because he saw the destruction this was bringing about. Abruptly and randomly, he halted our jeep at a farmer's house. He explained that he would only work with one farmer for the next six months, and that each visit would only last 10 minutes! After social preliminaries, we went to the farmer's field and PN asked probing questions about the condition of one specific plant in the field next to us, seeking to gather the farmer's level of observation and insight about plant growth processes. He asked the farmer to monitor one tiny aspect of that plant – perhaps the colour of the ears of grain, or the length of some part – I do not remember. Over his visits (he randomly arranged them himself and discouraged my accompaniment), he led that farmer through a process of learning to observe and inquire about the relationship of key input factors to key developmental

aspects of the crop. Within a year, he had induced a set of changed practices that farmers across the village had adopted. The approach rapidly blazed across all the 25 villages and beyond in the next few years; it was being applied to all the crops, and spawned an empowered research community of farmers. After six visits, PN moved on to other sites – I met him only that once!

Another incident, which indicates the gulf between these two worlds – that of modern science and rationality, and that of the rest of human wisdom – is a poignant indicator of how much is lost in the war between them. Brother Shanthi (formerly Pierre Gillet) arrived in India at about age 18, fired with an enthusiasm to serve the poorest people, as a member of the Little Brothers of Jesus – a rare, small order that provided absolutely no church-funded assistance to its members and required them to live and earn amongst poor communities worldwide. Shanthi had therefore trained as a leprosy technician (now nearly eradicated in India) and served out a whole career tending to patients from the hospital in the Tiruvannamalai district, Tamil Nadu, India. Once patients were treated, many of them were faced with a need to rehabilitate themselves, and Shanthi set up a garment unit from where they wove, tailored and sent handmade children's garments to France and Germany. This unit thrived and flourished over the decades, and set up and financed up to 19 community programs ranging from afforestation to a school for mentally challenged children. As these programs matured, Shanthi turned his attention to the local herbal medicinal system known as *Siddha* medicine. He assiduously acquired original documents from local healers (often palm leaf manuscripts); looked up and annotated the lists of herbs with their botanical and Latin names; convened two seminars of local healers in the district to sort out variable information or identification issues; and set up a small practice. He also researched treatment protocols and installed a small factory to process herbs and package them into tablets and capsules. Over time, he found considerable success in treating and achieving remission in certain types of cancers and HIV positive cases, about which detailed records were maintained. He chose to treat only those patients who lived within a two-kilometre radius of his own home, on the principle he discovered in early years of treating leprosy wounds, that his caring and praying for these patients was integral to the success of his medical practice. He drew such attention that people from Chennai and other far-off cities undertook to find homes to stay in the neighbourhood in order to avail his treatment. This came to the notice of doctors at the JIPMER national hospital in Pondicherry, who examined his records and patients. Convinced

that there was a case to study his formulae, they set up a research project. Shanthi insisted that he should be involved in the project and be allowed to meet and counsel the patients, but this was denied on the basis that it was not ‘scientific’. The results were negative; no significant improvements were found. After discussions, some relaxation of this approach was permitted, and I think he was allowed to meet them once (my memory of the exact aspect narrated by Brother Shanthi over a decade ago fails me). This time there was success with nearly half the patients. However, these findings did not influence national health policy and the research remains archived.

These kinds of experiences are commonplace for grassroots workers, and there is a vast plethora of case studies in the literature (example, Chambers, 1983; Narayan, et al, 2000; Högger & Baumgartner, 2004). I share my own stories in some detail here because I am building an argument for a new epistemology, which I derive in fundamental ways from these formative experiences.

In a subsequent phase, over the last two decades, I took to working in organizational development, initially in corporate settings and later as a freelance consultant. My clientele have always included corporate clients as well as community organizations and charities. My professional development was incubated in the Sumedhas Academy for Human Context – the premier professional body for organizational development in India. Sumedhas has pioneered significant new cutting-edge theory and practice, largely unknown outside India, which is significant for its reflexive attention to cultural dimensions (see §6.2). Thus, its discourses on role, identity, leadership and culture have drawn as much on Indian mythology, as, let us say, the writings on mythology of Joseph Campbell (1949). Beginning with an initial application of group relations work and other encounter lab work in the early seventies (at that time under the label of the Indian Society for Individual and Social Development, or ISISD), its practices now include a suite of offerings which are exploratory spaces built around the experience of yoga, folk theatre, meditation, work with symbols and oracles; and these transcend the Western approach to group inquiry in fundamental ways. The modalities are invitational, not overtly confrontational, offering a trustworthy and secure space, yet upstaging collusive processes, and they are increasingly non-verbal. I have used a variety of these non-verbal exploratory methods to access deep inner knowledge and transformative potential in individuals, where rational exploration and dialogue have failed to produce results. Here, I am not going into the details of my experiences with

human process work, including all the applied dimensions such as theatre and yoga, because it is narrated in chapter 6, in the context of examining the processes of knowing.

In the early nineties, I read the classic work by Peter Senge (1990), *The Fifth Discipline*, and began a personal exploration of systems thinking, applying it to consultative and teaching assignments.

Paralleling this trajectory has been a series of transformative personal experiences. Sudden life events tore and shifted the smooth fabric of life; even more importantly, certain revelatory encounters astounded me. These included meeting people with amazing powers. For example, a senior and nationally reputed consultant on organization development I worked with had an extraordinary ability to interpret a person's body/mind even as that person first walked through the door. His insights were uncanny, eerily accurate and often made the 'victim' and me jump out of our skins! Later I learnt that this is a clearly described state of accomplishment in the practice of yoga, resulting from the ability to cleanse one's mind of residues and chatter, and abide in immediate and total attentiveness; I have since personally experienced this, picking up signals about people, albeit sporadically. There are many other sorts of examples I have encountered of uncanny knowing, but the one above suffices to illustrate my point here. Further examples from other sources will be found in later chapters.

I also had a certain type of repeated experience around my work with human growth processes, both in lab situations where I applied theatre, yoga and meditation to deep personal explorations, as well as in my own experiences with oracular and healing systems. Far too often I have found people learning things that they simply could not have access to according to conventional psychological theory, especially related to other people they were working with, or to their own or other people's futures. A third curious pattern, again repeated several times, has been about finding precious and rare wisdom in people typically regarded as failed and 'the dregs of society': schizophrenics, addicts, the abject poor, fishermen or tribal farmers – I have shared some examples already.

Of course, this short narrative does not capture the power and intensity of the twists and turns my life has taken, from both choices purposefully exercised and apparently

sudden/unexpected events. My narrative accounts for the variety of sources that have fed my curiosity, but does not explain the recurrence of experiences that point to forms of knowledge and ways of tapping into them that are not yet explained by science or rationality. However, when these things work for one quite consistently (as in the lab sessions I conducted using theatre, or with my own oracular consultations), one begins to accept the process in good faith and keep up the experimental practice. I have also thirsted to find a way to create a conscious model to explain such occurrences, and this doctoral thesis moves me along this trajectory.

All my experience in this regard points to the principle that accessing such knowings requires an 'emptying of the self' or cessation of rational thinking. Nevertheless, I find it problematic to take the position of treating such phenomena as mystical art. My own cultural traditions (inasmuch as I understand them) point to the need to treat these as a craft – learnable through guidance and extensive reflective practice, but not directly teachable and transferable.

Recently, I was invited to conduct pro bono research on the handicrafts sector in India. This research uncovered a clear case of 'national amnesia': the sector had shown tremendous growth and promise, yet it was regarded with social and political apathy and was marginalized (Rajagopalan, 2011). This was brought to the attention of the authorities through my intervention and was immediately addressed: a national economic census was completed in 2013, and preliminary reports on the sector's status are emerging. In the process, however, I discovered and was fascinated by recent sociological findings (example, Sennett, 2008; Crawford, 2009) of a qualitative rather than a quantitative sort, that link to all the things that my story has pointed to: the methods of alternate ways of knowing in craft traditions and the value of the content of such knowings to contemporary human dilemmas. This experience specifically leads on to my current doctoral inquiry.

I have tried to describe my journey in ways that can be evocative and perhaps dimly communicate some of the context that has shaped my political maturing – beginning with my own home context, ripening with my work with the marginalized, and being sharpened in corporate and research settings. My idea of science has developed to embrace curiosity, a quest to resonate with underlying patterns and sometimes be able to intuit causative factors, and including an ability to draw on personal evidence from empirical observation of the subjective-objective context, which includes looking

inside oneself as well as outside and being attentive to wholes and larger boundaries even when a specific theme is the focus of inquiry; all of this while seeking to make the knowing explicit with theory to explain the world. These aspects are elaborated, and deliberated in the context of discussion on theory and ‘knowing’, in chapters 6 and 7. I also argue for a compelling *need to see beyond the theology of rationality and science, if we are to engage fully with our realities. If I were to summarize my political radicalism crudely, I would say that I do have one conviction: that there is an urgent need for humankind to understand the mechanisms, and thereby recognize that real knowing, which constitutes value and offers redemption (the sort that will answer the Big Questions that individuals and humanity need to deal with) can truly be found in the margins, and perhaps never in the mainstream. My two arguments – the epistemic and the political – meld together into one: the voice of the margins only obtains if the ‘rational’ and ‘scientific’ is bracketed.*

My experiences with transcending rational knowing – in meditation, process work, community and group settings and in alternative healing practices – are sufficient to convince me that abundant knowledge to address our thorniest dilemmas is available in the global repository or field which I refer to – and elaborate later – as the *deep intelligence field* (DIF), inspired by Herrigel (1953), Chardin (1959), Bateson (1979), Bohm (1980) and Laszlo (2007). Paths to access the knowings it contains also exist, which I characterise as the N3 way. My experiences and experiments provide some pointers to that. While sketching my journey here has served the purpose of setting the context, I will draw upon other specific instances to provide direct testimony within the framework of *systems thinking*, while enunciating or discussing relevant conceptual pieces in later chapters. I shall also dip into several other fields of theory and practice and juxtapose these against testimony from my own and other authors’ narrated experiences, in order to extend the philosophy and methods for *systemic inquiry*.

One final footnote is required. *I think that methods alone will not lead to discovery and connection with the DIF. There needs to be a burning commitment to embrace the unknown and the new.* A sense of adventure was perhaps sparked or stoked in me by an early suicidal note – a sense that since life was not really worth living, why not touch the edges? I always desired as an adolescent to be a traveller, experience new places and pristine nature in all its glorious extreme manifestations; but the contrary pulls of duty towards domestic responsibilities restrained me. I now realize that this

keeda inside me (Hindi: literally, bug) took a devious shape: every time I became proficient in some domain and it was ready to accord me recognition and reward, I became restless and moved on, into the deep end of another unknown domain – from grass-roots development work to corporate human resources and organisational development; from employment to freelance consulting; from consulting to academic research, and so on. I always carried a sense of guilt (was I disloyal?) with me, and earned a few enemies for this reason. Some form of this madness – a basic willingness to trust that the Universe will allow one to survive, nay, flourish, if one lets go and enters the unknown – is quintessential to embark on a journey of true knowing. One has to become the explorer of new lands; a mapmaker charting unknown territories (Brody, 1981). The methods only provide a window, *but the leap of faith has to be taken.*

CHAPTER THREE

Three Perspectival Frames

3.1 Introduction

In chapter 1 (situating the research), I introduced the overall thesis – describing the field of adventure over which I have sought to playfully inquire, as well as the unfolding narrative structure of the chapters through which this playful research has been captured. In chapter 2 (situating the researcher), I contextualise this effort in terms of my background and past adventures that have led up to this doctoral study. I will move on soon to situate my research in the field of systems thinking (chapter 4), building up an argument for extending its epistemology (chapters 6 and 7) and then describing one possible rough route to this (chapters 8 and 9). However, before doing so, I wish to explore three specific ideas that, in my opinion, provide a useful perspective against which to consider the ideas of systems thinking. These are the contributions of second-order science (§3.3) and of evolutionary thinking (§3.4), prefaced (§3.2) with brief discussions of the idea of holism (considered central to systems thinking by some, for example Jackson, 2003) and reflexivity (also considered critical to the overall systems thinking enterprise by other systemists, for example Midgley, 2000). These themes inform and underscore the two frames of second-order science and evolutionary thinking. The third key idea is my own analysis of the nature of consciousness: I posit that modern Western thinking has concerned itself with only one mode of consciousness, but there is another, equally important, simultaneous mode that it has omitted to take into its purview. I conclude (§3.5) with a summary of the key ideas and their relevance to the investigation in subsequent chapters.

3.2 Holism and reflexivity

In the early days of systems thinking, there was a strong focus on holism, with the dawning realization that all things are interconnected and that the whole is more than the sum of its parts. Given that the term ‘holism’ is also associated with a philosophical orientation, which regards this larger unity mystically (Bunge, 1977) and justifies an argument for always valuing the whole more than the component elements, some have abandoned its use in systems thinking. As an example of the current split on the use of the word ‘holism’, Jackson (example, 2003) continues to use it as a central

idea, while Midgley does not use the term at all in his later works (2000 and subsequently). It is worth re-evaluating the term, to explore its connection to the meaning of ‘knowing’, ‘judgement’ and ‘reflexivity’, which sit at the heart of boundary critique (Midgley, 2000).

I would assume that a holistic understanding requires the inclusion of all relevant forms of knowledge that might be available among the human actors in a situation. Malhotra’s (n.d.) interpretation of what constitutes a holistic perspective is relevant here.

Holism derives from the word holon:



“Every holon has the dual tendency to preserve and assert its individuality as a quasi-autonomous whole; and to function as an integrated part of an (existing or evolving) larger whole” (Koestler, 1967, appendix).

Malhotra (undated) argues that, in the case of sentient human beings, the two aspects discussed by Koestler can be viewed from two locations – within or without (internal and external), yielding the following perspectives as depicted in **Table 3.1**.

Malhotra elaborates,

“Understanding human beings as holons offers a fascinating approach to map the totality of his [sic] existence and the dynamics that unfolds. All holons have an inside and an outside. ...The essence of holism lies in the simultaneity of these four quadrants, their interplay with each other, and identification of leverages that can facilitate the movement of the holon to another level of existence ...a holistic perspective is not problem centric. The assumption being that what may appear as a ‘problem’ at one level, may in fact be a necessary and even useful part of a larger whole. Thus, mere elimination of the so-called ‘problem’ can inadvertently destroy the fabric of the larger whole.” (Malhotra, n.d., 2-3).

Table 3.1 The quadrants depicting the four perspectives of a holon.

Inquiry agent's location of perspective 	Location of object of inquiry 	INTERNAL	EXTERNAL
INSIDE	SELF CONCEPT (My subjective view of myself) <i>Me: Inner</i>	WORLD VIEW (My subjective view of the world) <i>Me: Outer</i>	
OUTSIDE	PATTERNS OF RELATEDNESS (Of the self to external phenomena: I stand outside of myself, as it were, to gain this understanding). <i>We: Inner</i>	OBJECTIVE CONTEXT (The description of the world as if it is a tangible reality existing outside that we can observe neutrally without influencing it) <i>We: Outer</i>	

(Adapted with some modification from Malhotra (n.d.). Explanations in brackets, and summary idea in italics added by me. Summary idea in italics is Wilber's (2001) corresponding classification).

This particular perspective on holism, which differs from the idea of intuitive, undifferentiated spiritual unity that Bunge (1977) criticises, offers us two useful insights. The first is that it illuminates what is required in second-order science, especially when it comes to the idea of strong second-order reflexivity, discussed in the next section §3.2. (In fact, I will argue that these ideas on their own are insufficient; therefore, in §8.6, I show that this kind of reflexivity additionally requires accessing a mode of consciousness called the universe of being-abiding).

3.3 Second-order science

The conceptual formulation of second-order science is relatively recent, and is aligned with the school of philosophy called radical constructivism, first espoused by Ernst von Glasersfeld (1979), and related in some ways to the idea of second-order cybernetics that Heinz von Foerster (1979, 1984) introduced (also see Constructivist Foundations, 2011). Essentially, there has been a need to characterise and differentiate the movement from the classical (first order) sciences and produce a more reflexive practice. The simplest way to differentiate the two would be to say that while

“First order science is the science of exploring the world, second order science is the science of reflecting on these explorations” (Second Order Science, 2015).

Second-order science, as an approach or set of methods, is increasingly seen as moving to centre stage in the new architecture of the sciences since the 1950s. It is sometimes also described as Science II (Hollingsworth & Müller, 2008). Science I (normal or classical science) is seen as, *inter alia*, based on reductionism, mechanism and a search for universal laws. Science II is described as a new stage in the evolution of Science as a whole, and is seen to be extending Science I. In contrast to Science I, Science II is seen as focusing on pattern formation and recognition, non-trivial mechanisms, and an increasing focus on self-referential elements (Müller & Riegler, 2014b). The domain of Science II creates an inversion of the idea of novelty: from the dominance of exploring the world in Science I, the source of novelty shifts in Science II to focusing on reworking and reconfiguring the available scientific outputs and paraphernalia from an explicit observer’s perspective (*ibid.*). The wide potential of meta-analyses leads to a very general and vast scope (Völker & Scholl, 2014). A key differentiator is the inclusion of the observer and second-order observations (Constructivist Foundations, 2014); and ‘re-entry’ is seen as the basic operation of second-order science (Müller & Riegler, 2014b). Re-entry is explained a little later in this section, but essentially refers to the act of observation feeding into the observed to change it.

Second-order science aims at the “resolution of inherent logical obstacles associated with the circularity of observations” (Füllsack, 2014); the “resolution of ‘wicked problems’, i.e. of highly controversial observations and results” (Alrøe & Noe, 2014);

“a more holistic conception of scientific problems, a new integration between experience and reflection” (Vörös, 2014); “increased self-reflexivity, highly complex and trans-disciplinary problem configurations” (Aufenvenne et al., 2014); and “uncovering hidden assumptions and unjustified normative consequences” (Völker & Scholl, 2014). All of these things are summarised neatly in Müller & Riegler (2014a).

Among several methodologies being innovated and adopted include first person and phenomenological approaches; a ‘polyocular’ framework to overcome issues of cross-disciplinarity; the use of participatory design and the application of George Spencer Brown’s (1969) ‘laws of form’, explained briefly on the next page (Müller & Riegler, 2014a); and ideas from complexity sciences are also incorporated. Thus, it is seen to serve three functions in the extension of Science I: “... a rich source of novelty and innovation, the necessary quality control and greater integration and generality” (Müller & Riegler, 2014b, 13).

At the heart of this whole enterprise sits the idea of reflexivity. The key operation here (as mentioned before) is ‘re-entry’, which is characterised/recognised in terms of five types:

- i) re-entries in the domain of first-order normative sciences - this is directed to problems such as researching a methodology of methodologies, a rule system of rule systems, or an algebra of algebras.
- ii) re-entries in well-established disciplines or disciplinary groups – focusing on, say, a social science of social science or a management science of management sciences.
- iii) re-entries from outputs, such as a survey of surveys.
- iv) re-entry from an input context – looking at a theory of theories or a model of models.
- v) re-entry focusing on “the observer-production dimension of first-order science and uses re-entries in the domain of first-order production operations within special disciplines or within the entire landscape of first-order science, i.e., a reflexive shift towards a more general understanding of researchers and their recurrent research operations, including researchers of radical constructivism, systems science or cybernetics and their operations as well” (Müller & Riegler, 2014b, 12).

The notion of reflexivity needs some unpacking. This has been accomplished by Hodgson (2015). It is one thing to talk about ‘including the observer in the system’ [my paraphrasing], which amounts to some reflexive capacity. Hodgson calls this a weak second order science perspective. His diagrammatic representation of first order and weak second order are reproduced in **Figures 3.1 and 3.2** below. Now, if the observer can not only “observe himself” in the system, but also “observe the observing” – which means, to be able to sense and comprehend the dynamic interplay in the situation between his/ her actions and that which is unfolding without and within, then we have a “system observing itself” – a strong second order observation that includes reflexivity (see **Figure 3.3** below). This is more in tune with the enactive idea of cognition, which will be considered in §6.2.2.

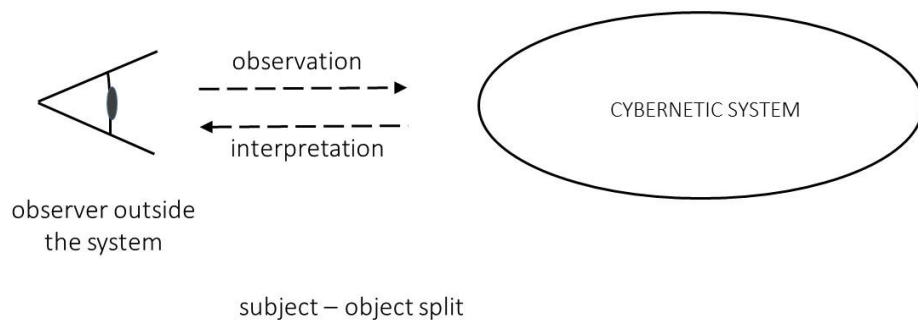
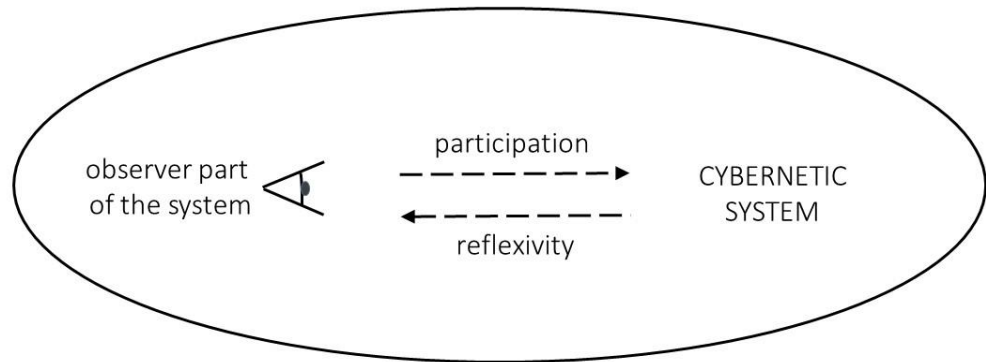


Figure 3.1 First-order observation (from Hodgson, 2015).



The observer is inseparable from the observation

Figure 3.2 Weak second-order observation (from Hodgson, 2015)

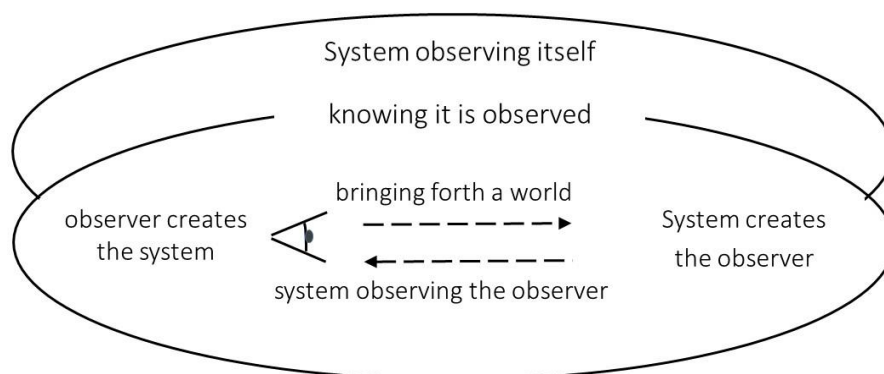


Figure 3.3 Strong second-order observation (from Hodgson, 2015)

Readers wishing to explore this point further may consult Hodgson (2015), since he clarifies this model by invoking and elaborating on Spencer-Brown’s laws of form (1969) and Kauffman’s (2005) comment on the significance of the elegant capture of the re-entrant relationship through the creation of a symbol for second-order feedback.

This proposition raises the question that it is all very fine to talk about ‘ongoing dynamic observation within and without in the midst of participative action’ [to

paraphrase my earlier discussion], but what does that really mean and how is it to be accomplished? How does one move from the intermittent and partial reflexivity of the ‘weak second-order practice’ mode to the powerful, engaged, flowing reflexivity of the strong one? These are extremely important central questions and are taken up and answered progressively as the thesis unfolds through chapter 4 and onwards (in particular, key discussions are to be found in §4.7 and §7.2).

Like many other psychological traps and dilemmas, this is a chicken-and-egg syndrome: without any experiential basis to acknowledge that such a mode is possible, people will not dare to attempt to shift out of their weak practice. However, without some experimental entry into this territory, it is impossible to generate any experiential basis, on which to ground further and deeper discovery of this mode of being. The invitation throughout this thesis is that, if the logic of argumentation appeals, then please do try to experience one or more of the several practices (chapter 6) that have been described as enabling this kind of experiential shift.

Turning back to Figure 3.3, the idea of the ‘system observing itself knowing it is being observed’ begins to make some dim sense, if we are reflexive to the simultaneity of the four perspectives suggested by Malhotra (Table 3.1). This affords some kind of a possibility of individually and collectively (that is, through group inquiry) achieving this capacity for strong second-order reflexivity. As mentioned earlier, how this is to be done is developed in later chapters.

It might not be out of place to mention that Gerard de Zeeuw (1996) has described the evolution of science, in a progression through 1st, 2nd and 3rd phase sciences (also see Bausch & Flanagan, 2012). First phase assumes independent observation and value freedom. Second phase recognises that the observer is implicated in the observed (example, quantum physics), but still assumes value freedom. Third phase science recognises that both assumptions are problematic, and seeks to increase the participation and the value of multiple points of view and harness them to a collective multidimensional understanding, that includes these various perspectives. In seeking to exercise care of method in constructing the common ‘object’ through high quality observations from these several perspectives, we look to reduce errors in contextualising the object under study, rather than reduce errors in ‘objectifying’ (Zeeuw, 1996; Bausch & Flanagan, 2012). Bausch and Flanagan propose a method towards realisation of third phase science through what they describe as dialogic

design science (2012). While all of this goes a long way towards extending the remit of science, it does not inquire as thoroughly into the core processes of knowing and reflexive understanding as the exploration of strong second-order science that is being developed through this thesis. However, all of these explorations seek to extend our human capacities in the same direction and for similar purposes, and all possible exchange and development of these ideas is to be welcomed.

3.4 Evolutionary perspectives

Malhotra (n.d.) develops from the idea of a holon a coherent elaboration of a systemic model of the psychological growth and maturation of the individual. Malhotra's model offers an interesting evolutionary perspective for two reasons: one, we can immediately find the parallels in the growth of the systems movement; and two, this model explains why dialogue across certain paradigmatic positions is often an insurmountable challenge, regardless of the method applied. Malhotra's model is built upon a synthesis of earlier work by Graves (1965) and Beck & Cowan (1996), and has been extensively tested. Other people have also extended Graves's work; most notably Wilber (2001). I use Malhotra's version because of my extensive familiarity with it through deployment in my own consulting practice for a decade, using the psychographic tools developed by Malhotra based on his model. After elaborating Malhotra's model of psychological maturation at §3.4.1, I will also refer to other evolutionary ideas in the literature, particularly Laszlo's (2007) idea of the Akashic Field, as adding further critical insight for the meta-framing of systems thinking in §3.4.2.

3.4.1 Malhotra's Levels of Human Existence

Malhotra begins the exposition of his model by quoting Graves:

“The error which most people make when they think about human values is that they assume the nature of man is fixed and there is a single set of human values by which we should live... data (indicates) that man's nature is an open, constantly evolving system, a system which proceeds by quantum jumps from one steady state system to the next through a hierarchy of ordered systems.

...The psychology of the mature human being is an unfolding, emergent, oscillating, spiralling process marked by progressive subordination

of older, lower-order behaviour systems to newer, higher-order systems as man's existential problems change.

These systems alternate between focus on the external world, and attempts to change it, and focus upon the inner world, and attempts to come to peace with it. With the means to each end changing in each alternately prognostic system.

Thus, man tends, normally, to change his psychology as the conditions of his existence change. Each successive stage, or level of existence, is a state through which people pass on the way to other states of equilibrium. When a person is centralised in one state of existence, he has total psychology, which is particular to that state. His feelings, motivations, ethics, and values, biochemistry, degree of neurological activation, learning systems, belief systems, conception of mental health, ideas as to what mental illness is and how it should be treated, preferences for and conceptions of management, education, economic and political theory and practice, etc. are all appropriate to that state.” (Graves, 1974).

Effectively, these few paragraphs comprehensively offer a systemic view of the individual's psychology of growth and maturation. However, it is pertinent to study this in some detail and I will simply reproduce the introductory section from Malhotra, to aid us. Notably,

“Every level of existence is a complete system in itself; an individual at a particular level of existence has needs, wants, styles, attitudes, beliefs, values, proclivities, and capacities that are particular and consistent with the life conditions corresponding to that level of existence” (Malhotra, n.d.).

Malhotra elaborates six levels or ‘existential universes’ in his model. He describes the journey of the individual across these levels in these terms:

“The evolutionary journey through these levels is a movement characterized by: (a) alternating focus on the self, and outside self; (b) An increasing awareness of the world around the individual; (c) A widening field of conceptual space available to the individual.

These levels of existence are hierarchically ordered and the individual progresses or regresses to other levels of existence (a) Based on his prevailing

life conditions; (b) When they have fulfilled the tasks essential to a particular level as part of a process of maturation; and (c) Based on the provocations or evocations the individual experiences in the existing location.

The evolutionary movement through the different levels of existence follows fundamental evolutionary principles of “include and transcend”. That is, individuals predominantly operating at higher levels of existence would have in addition to what is afforded by the current level of existence, the ability to deploy capacities that were available at the lower order systems (now deployed in transformed ways consistent with the current level). These movements are not always clean, clinical, and [are not] complete leaps into another level of existence. If the impetus for movement is from the provocations the individual experiences, the possibilities are that the individual will carry along some unresolved issues / agendas of the earlier level. It is also our belief that any “skipping” of levels in the ordered hierarchy is likely to be unstable and transient as the resources and abilities / capacities / experience corresponding to the skipped level is an essential ingredient to traverse the journey through the level the individual has skipped to” (Malhotra, n.d.).

Importantly, Malhotra is at pains to state that these ‘levels’ are an abstraction.

“The levels of existence are conceptual abstractions and it is incorrect to suggest that individuals can be labelled or put in neat, discrete boxes. In our framework, [the idea is] that elements of all the levels are present in lesser or greater measure in an individual and they come together in a configuration that is unique [,] with one or more levels being the dominant level from which the individual encounters himself and the world. All individuals operating from the same dominant level of existence are likely to have similarities in their psychological make-up but could deploy themselves in distinct ways unique to them flowing from their identity processes...Evolution and chronological growth are not one and the same. People may be old and not evolved! However, the evolutionary spiral has some correspondence with the maturing process from infant to adult” (Malhotra, n.d.).

It will be evident to the average reader familiar with systemic perspectives that this model represents ideas of systemicity and holarchies (when holons are progressively nested into higher levels of organisation; I prefer this term to ‘hierarchy’ because of

the different use of the latter word in management contexts), and I refrain from further argument to establish this point.

Going further, the six levels of existence that constitute Malhotra's model are now described in much brevity, just sufficient to establish the concordance with our proposed task of meta-framing the evolution of systems thinking and addressing the issues of the possibility / blocking of dialogue. The six levels Malhotra postulates are the Mechanistic, the Individualistic, the Conformistic, the Aspirational, the Humanistic and the Holistic. The idea of using the suffix 'ic' perhaps communicates that this attribute is a tendency, an attractor in systems terms, around which the thoughts, feelings, perspectives, choices, drives, nature of sense and meaning making, actions, norms and beliefs, sense of well-being, and evocations constellate. This constellation makes for characteristic features for each of these levels. An extremely concise summary of their features is provided in **Table 3.2** below.

Table 3.2 Malhotra’s (n.d.) Existential Universe framework

LEVEL	TYPICAL FEATURES
Mechanistic	Obedience, loyalty, sincerity, dependability, safety, reactivity, resistance to change, nondescript, non-entity.
Individualistic	The emergence of ego – although self-seeking, not necessarily selfish or sinister; taps the heroic energy and potential of the ego; can be fun loving, irreverent, and questioning of givens; can create and innovate.
Conformistic	The emergence of guilt – the world becomes rationally ordered; everything is prescribed and slotted; “other” ways are negated and rejected; individual agency is recognised but subordinated to group imperatives and norms.
Aspirational	Action-oriented, positive thinking; believes in abundance; builds large social networks on the principle of aggregating individual aspirations; and in the process, deemphasizes humanistic aspects and encourages instrumentality.
Humanistic	May come across as caring, committed, and compassionate; s/he may also appear as soppy, sentimental, and unrealistic. S/he carries a risk of diffusion in focus, direction, accountability, speed and performance.
Holistic	Highly flexible. For example, she is neither soft nor tough; values togetherness; does not intrude when there is a life-threatening situation; candour will not ruin a situation that calls for discretion. Interestingly, while people may experience such a person as secure and in charge, and committed and expressive, they may equally have difficulty fathoming the individual and conclude that she is arrogant.

Source: Summarised from Malhotra (n.d.)

These six categories are only ideal types, and do not represent a stage model of growth where the progression from one to the next is indicative of superiority. Unlike certain other stage models of growth, the model does not inherently value a particular configuration or scheme of values; it suggests broadly common psychological themes that are negotiated in the journey to maturation.

Thus, it represents the normal expansion of the personality through maturational stages where increasing capabilities are added, while previously acquired modes remain available. All these capabilities are latent in any individual and usually emerge in response to typical evocations (inner growth impulses) and provocations (external context) at appropriate stages of life. Any adult person at a given point in time will display some kind of a pattern that is a mix of all these levels; nevertheless, engagement with the current growth task will typically render one level dominant. Often, when growth tasks are not negotiated adequately for a variety of internal and external reasons, distorted patterns with denial of certain levels or excessive entrenchment in a highly dominant level may ensue.

This progression is also not automatic for another reason: the model postulates a discontinuity after the fourth level, as the next two levels are seen to represent what Malhotra refers to as “*Tier 2*” *consciousness* – this indicates a capacity for strong second-order reflexivity. According to Malhotra, people with dominant anchorage in levels 1 to 4 are not likely to be able to understand, in their interactions, the dominant levels in themselves or in others. Therefore, crucially, they are unable to consciously select and deploy themselves from a variety of levels to match the context, a skill that people with dominant Levels 5 and 6 acquire over time. Only a small segment of human population has access to these levels (Wilber, 2001).

The eventual pattern that marks an adult at a particular point of time may have a unique signature or impress based on the specific kinds of situations and contexts that marked their navigation of the psychological tasks at each of these levels; thus, one person’s security issues may have to do with darkness and noises, while another’s with strangers.

In my own experience, what appears an abstract theoretical model proves to be of direct and practical significance, providing penetrating insight and useful mobilisation for understanding of the context of personal growth and group dynamics, when

actioned through an instrument that enables the profiling of an individual / small group against these six levels. Malhotra has created and extensively tested this profiling instrument, which I have used for counselling individuals and advising leadership teams on features of their organisational culture. A parallel approach has been created by Torbert (example, 1987; see §7.4), with his idea of action logics, and the profiling tool popularised by Harthill Consulting UK – the Leadership Development Profile, based on action logics, provides similar outcomes.

The reader is now invited to evaluate the resonances that these level descriptions generate in her / him concerning the evolution of human cultures, of the various waves of systems thinking, indeed, of her own life journey, and any other individual or social group. For example, it can be seen that modernism, first order science, rationalism and hard systems thinking (which sees systems as existing in the real world, see §4.5.1) represent a strong expression of the Aspirational; while postmodernism, and soft systems thinking (which sees systems not as existing in the real world, but as mental constructs, see §4.5.2), indicate the expression of the Humanistic; whereas the struggle of critical systems thinking (which sees the value of multiple perspectives, see §4.5.3) is to forge a Holistic and thereby transcendental approach, which respects the value of each of the previous stages.

The spiralling nature of progression, alternating the focus from external (mechanistic, conformistic, and humanistic) to internal (individualistic, aspirational, and holistic) with increasing layers of awareness can be seen. Since each level is a composite whole, consider what happens within each of the four quadrants of the holon presented in Figure 3.1 - this is also the concept of “All Quadrants and All Levels” that Wilber (2001) uses in a similar synthesis of Graves’s (1965) and Beck and Cowan’s (1996) work.

The dominant levels that have generated systems thinking, are the humanistic and holistic levels: these are, as we saw, *Tier 2 consciousness* levels. Among other things, this explains why systems thinking, although in its essence very intuitive, is hard to grasp and deploy for a majority of people, and the difficulty of establishing dialogue and rapprochement across levels. In contemporary society, the levels 4 or lower are dominant. Moreover, the culture is dominated by the aspirational pattern of capitalist culture and the increasing media fixation on juvenile attitudes: this constitutes the settings that systems thinking has to deal with. This explains in part why it is difficult

to disseminate systems thinking widely. (One other major reason is the subject matter of this thesis, unfolded over the remaining chapters).

So, to continue the quick analogy with the evolution of systems thinking: while the movement from standalone methodologies to CST can be seen as a progression from Level 4 (Aspirational) into Tier 2 consciousness; at the same time, the unique nature of the journey of this particular discipline, imbues it with a particular baggage arising from an excessive anchorage in a single form of rationality – intellectual discourse, which we are seeking to unravel in this inquiry.

3.4.2 Other evolutionary ideas

Apart from these aspects, a deeper insight into the evolutionary process is afforded by the idea of alternating waves of differential development, followed by integration. While this is implicit in the ‘ascend and include’ principle of Malhotra’s model, it is explicated and considered in detail in the thinking of Sri Aurobindo (1957) and P. Teilhard de Chardin (1959). While the ideas of both these thinkers are regarded as metaphysical and appear controversial to many persons who are strictly situated within either one of the opposed theologies of science and religion, both have argued strongly for the mutual entanglement or implicatedness of the material and the spiritual, which is increasingly being accepted from findings at the frontiers of physics and neurobiology too (Bateson, 1972; Laszlo, 1999).

The other important principle involved here is the sense that the expansion of consciousness – through alternating pulses of differential advancement and synthesis or involution, underlies the evolution of the Universe that we know. The idea of *teleology* – the idea that systems evolve towards inbuilt goals - has been controversial in systems thinking (M’Pherson, 1974). The idea of *teleonomy* – referring to systems that are goal seeking – that operate or evolve based on dynamically formulating goals in relation to the dynamic context, appears to make better sense. Such ideas appear to be abstractions of mere academic significance, until our conscious mind is directly able to apprehend such phenomena playing itself out in some system of interest, such as when considering one’s own personal evolution, or that of the leadership team to which one belongs. The idea of teleonomy is discussed further in §5.3.

3.5 Consciousness and intentionality

Through the rest of this thesis, we will examine the nature of human knowing in the light of the ideas discussed above – holism, reflexivity, and an evolutionary perspective. Before proceeding, however, I must introduce a very important distinction about the nature of human consciousness and knowing.

To do so, I will revisit the roots of rational thinking that Fuenmayor (1991a,b,c) examined. In modern thought, all consciousness arises from *intentionality*. This term, resurrected by Brentano (1874) and later, Husserl (1964), is discussed by Fuenmayor:

“‘Intentionality’ or the ‘principle of action’ can be understood as a sort of ‘readiness’ for action (for perceiving, knowing, changing, maintaining). Every situation is recognized, appreciated, felt, placed, controlled, communicated, acted upon, etc., on the basis of such a ‘readiness.’ (Notice the acting, dynamic connotation of the word ‘readiness’)” (1991b, 454).

In turn, Fuenmayor explains “readiness” by quoting Sir Geoffrey Vickers:

“The term “readiness” is used by Sir Geoffrey Vickers in the following way: “I postulate that experience, especially the experience of human communication, develops in each of us readinesses [sic] to notice particular aspects of our situation, to discriminate them in particular ways and to measure them against particular standards of comparison, which have been built up in similar ways. These readinesses in turn help to organize our further experience, which, as it develops, becomes less susceptible to radical change. ... Since there are no facts, apart from some screen of ‘values’ which discriminates, selects and relates them, just as there are no values except in relation to some configuration of fact, I use the word appreciation to describe the joint activity which we call knowing and which we sometimes suppose, I think mistakenly, to be a separable, cognitive activity which is ‘value-free’” (ibid.)

In sum, Western thinking identifies this ‘readiness’ or ‘intentionality’ as underlying all mental or psychic activity, as the only mode through which consciousness operates. I think that this is only one-half of the picture; there is another universally known mode of consciousness. *Intentionality* automatically gives rise to a whole set of phenomena that I dub as the *Universe of Becoming-striving*. Where there is intentionality, there is a

recognition of some ‘thing’ that it is directed towards, and the thing is then distinguished from other things, memories and associations evoked, feelings and emotions triggered; the thing is named, categorised, evaluated, action taken....*this is what I refer to as the universe of becoming-striving.*

Other traditions, such as Eastern thinking, recognise that consciousness also has another mode: that of *non-intentionality*, which gives rise to the *Universe of Being-abiding*: one in which there is no desire to accomplish anything, only an alert and aware sense of being: a sense of profound ease, complete contentment and total oneness with the world. Such a state of mind is frequently associated, and perhaps recalled easily by most of us, with the innocence of childhood. As a young child of 8 or 9, faced with a violent household to which I had been introduced some years ago (having been reared for several years at my grandparents to later join my parents), my precious and special hour was the dawn every morning, when I would wake and sit silently on my balcony. Three storeys below was the entire expanse of fallow grass country stretching from horizon to horizon, where birds flitted and cows grazed, and rural folk set about their business. In the summer, the hay was harvested by a whole army of peasants. I felt a complete communion with the scene – sharply alive, deeply content, seeking nothing but absorbing all the vitality and enchantment of this vista to fuel myself to face the day.

As adults, such a state is evoked in various situations – in special times when engrossed in love, when in communion with nature because of a special hobby or simply when on vacation; when one is in the ‘zone’ of performing with felicity some task or action that one has mastered – while especially true of the performing arts and crafts, this is equally true of craftsmanship in surgery or in negotiation. Such a connection with the Universe of Being-abiding is also specially acquired through various practices such as meditation in the Eastern cultures. Such practices are covered in chapter 6.

It is my conviction that overcoming the sense of duality and fragmentation is impossible in the thinking associated with the universe of becoming-striving; it is only possible in the knowing associated with the universe of being-abiding.

It is important to realise that these two modes exist in *simultaneity*. However, being aware, reflexive and responsive to this simultaneity of both universes clearly requires a

cultivated approach and procedure. Such an approach is the antithesis of the methods of science and rationality, which lie at the heart of modern Western thinking. From these moorings, proceeding with only the recognition and the imperatives of the universe of becoming-striving, systems science and systems thinking seek to privilege acts of *inquiry* or *intervention*. In contrast to this, I privilege the term *knowing*, seeking to communicate a generative, rather than an instrumental orientation, which necessarily invokes both universes in the manner described by my model of systemic knowing (chapter 9). This is progressively assembled and unfolded through the rest of the thesis. My research methods correspond to what has been described as second-order science (see §7.5 and §8.5).

3.6 Conclusion

We have considered in this chapter three key ideas – a) reflexivity from second-order science, b) teleonomy from evolutionary thinking, and c) the two universes of knowing: being-abiding and becoming-striving. These will be useful to frame an evaluation of the philosophical underpinnings of systems thinking. We will look at the development of systems thinking in more detail in the next chapter.

CHAPTER FOUR

Systems Thinking

4.1 Introduction

‘Systems’ and ‘Thinking’ are both words in such ubiquitous use today that any literate person would instantly claim to recognise their meaning and use. Yet, put together, the phrase ‘Systems Thinking’ represents a specialised and developed field of study, albeit comparatively recent, which is neither well known beyond a sub-set of academia nor clearly understood. As a relatively young field that is extensive in its ambition and scope, it has not been possible to arrive at one overarching common definition acceptable to all the adherents of its various strains and branches, and its boundaries are not instantly recognisable (Midgley, 2003a, xviii-xix). Thus, systems thinking needs to be grasped in terms of an overview of its most commonly accepted purposes, and the historic evolution of its various branches. An attempt is made in this section to paint its contours with a broad brush, and the reader is pointed to several authoritative and comprehensive sources along the way.

The modern discipline that goes under the title systems thinking is understood to originate in a call to establish a general and unified theory of systems that would apply across the several sciences ranging from the natural and social sciences to the behavioural and economic. The idea of a ‘system’, and the meaning of systems thinking, will be progressively unfolded through this chapter in terms of a brief history indicating the increasing sophistication developed in the field over the years. For now, the term ‘system’ can simply be taken to imply any entity composed of several elements or component parts, which are related to one another by means of some ordering principles. The term ‘*Systems Sciences*’ refers to the study of such laws. According to Hammond (2003), a system can be defined in general terms as a set of relationships between discrete things that together form some kind of coherent pattern and/or whole that is capable of maintaining itself through time. *Systems thinking*, on the other hand, refers to *thinking* in such terms to solve complex problems in the real world (Checkland, 1981). Perhaps the term ‘systemic thinking’ is more grammatically accurate, as ‘systems’ (or ‘systemic’) is an adjective attached to the noun, ‘thinking’.

Systems thinking arose as a response to *mechanism*, *reductionism* and *subject/object dualism*, which are often criticised by writers in this field (Midgley, 2000; Hammond,

2003). These ideas underlay the Enlightenment approach to science and the scientific-industrial revolution. To briefly touch upon them: mechanism is the view that nature is like a machine and phenomena can be explained based on immutable universal laws, which make them predictable. Reductionism is the method that follows such a view, using the principle that you can understand anything by breaking it down into its component parts and analysing these; reducing phenomena to simple, objective, causal relationships. Subject/object dualism is the perspective that the observer (subject) can be completely independent of the phenomenon (object) that s/he is observing, and the latter can therefore be studied or recorded without the observer influencing it in any way, thus producing 'objective' results from the study.

Against these ideas, systems thinkers have postulated a wider set of underpinning principles through an interdisciplinary study of systems. Concepts were developed and introduced by scientists and thinkers from various disciplines. Hammond (2003) traces this origin:

“...They have all emerged in conjunction with attempts to solve the increasingly complex problems of industrial society. Systems concepts evolved out of parallel efforts in a variety of fields to facilitate the kind of interdisciplinary communication that was necessary to address the multidimensional aspects of such 'messy' problems. In the process, ideas from engineering were applied in biology and social theory, while developments in biology, particularly concepts of feedback and homeostasis, in turn influenced developments in engineering. The various systems approaches are all rooted in two fundamental premises: (1) reality is seen in terms of wholes, and (2) the environment is seen as an essential component. Expanding on this definition, Peter Checkland [1981] writes that the systems view 'assumes that the world contains structured wholes which can maintain their identity under a certain range of conditions,' and cites Russell Ackoff, who wrote in 1974 that we are living in 'The Systems Age' ” (2003, 18).

The effort was to explain complex phenomena in terms of self-regulating systems that are nested into progressively higher levels of organisation (Emery & Trist, 1965); although there are some systems paradigms that reject this approach or consign it to a minor role in the systems thinking universe of ideas (Midgley, 2003). Jackson (2000) surveys the field, noting the great variety of systems approaches, and wonders if there

is common ground to construct a transdiscipline around all of these. He suggests three reasons to do so: holism as a common commitment that binds all the approaches; the possibility, after Rescher (1979), that using the concept of a system as the fundamental element in ordering one's epistemological endeavors could be justified; and finally, the diversity, range, effectiveness and efficiency of the approaches themselves in relation to real-world problem management (Jackson, 2000, 18).

The contribution to theory in systems thinking ranges from philosophical tenets to complex mathematics and notational systems. Some of the basic building block ideas include:

- The nesting of hierarchies (atoms form molecules form structures that are part of cells which organise into tissues that form organs which assemble into an organism which is a member of a community, which is part of an ecosystem... and so on) Boulding (1956),
- Feedback and control (by which, for example, temperature and heart rate in a mammal is managed) Weiner (1948),
- Complexity of various sorts but especially of information processes (complexity theories can be incorporated into systems thinking) (Flood & Carson, 1988; Axelrod, et al, 2000),
- Emergent properties (arising from the interactions amongst the parts of the whole system taken together and not from any one part in isolation), which are not always predictable (Bertalanffy, 1956; Emmeche et al, 1997).

4.2 General Systems Theory

The origin of *Systems Theory* is most commonly traced to the mid-twentieth century, when Weiner produced his work on cybernetics (1948) and Bertalanffy published his General System Theory (1956). It has since been recognised that Bogdanov had argued the same case earlier - originally published in Russian (Bogdanov, 1910-13). These defining works heralded a bold recognition of a new field of inquiry. Essentially, the recognition was of the idea that 'the whole is more than the sum of its parts' [RR], and thus, there is the need to understand the outcomes emerging from the interaction of components of a system and the interaction of the system with its environment. George Klir offers a simple definition for a general system theory: "a new way of looking at

the world in which individual phenomena are viewed as interrelated rather than isolated, and complexity has become a subject of interest” (1972, 16).

Of course, many seeds of the central ideas can be traced retrospectively in earlier thought, especially the early Greek philosophers such as Aristotle and Plato (Jackson, 2000, 44). In the later pantheon of modern Western thought, systemic ideas are to be found in Kant (Ulrich, 1983; Fuenmayor, 1991a; Jackson, 2000), Spinoza, Hegel, Marx and Althusser (Jackson, 2000, 44-45), while other key historical accounts include names such as Heraclitus (Fuenmayor, 1991a; Crowe, 1996; Midgley, 2000, 71-2; Hammond, 2003, 13). On the other hand, Fuenmayor traces the roots of reductionism in the eleatic ontology (that is, the discovery or naming of reality driven by the interest in persuading another person) underlying the Greek philosophy of Aristotle and Parmenides, passing onto Aquinas; while crediting mainly Heidegger, Heraclitus and Kant for more systemic insights. He traces this as leading onto ‘The Mathematical Project of Modern Science’, where reason starts from simple but unquestionable axioms on which an acceptable method is applied to arrive at certain conclusions. Other influences are noted in the American pragmatist school, notably E. A. Singer’s experimentalism (see Britton and McCallion, 1994), and the European phenomenologist Husserl (Jackson, 2000, 45-6). Also, contemporary systems philosophers note systemic ideas in other cultural traditions (example, Bohm, 1980, 19, 22-26; Goswami, 1993; Capra, 1996, 7, 283, 286-7; Laszlo, 2007, 76-7, 103-4, 120), such as Hindu (see Beer, 1994b; Murthy, 1994; Systems Practice, 1994) and Buddhist thought (Macy, 1991; Varela et al, 1991; Fenner, 1995; Shen and Midgley, 2007), the American First Nation culture (example, Jackson, 2000; Laszlo, 2007, 150-1, 153) and the Chinese I Ching (Hammond, 2003, 13).

Bogdanov’s Tektology and Bertalanffy’s General System Theory (GST), postulated that it might be possible to bridge the silos of the various scientific disciplines (including soft sciences such as psychology and sociology) through a unifying, underpinning set of basic principles (the nature of organization is, in itself, seen as a key explanation for the ordering systems and principles of the various sciences).

Bogdanov discusses all manner of living and non-living phenomena to assert that all experience is organisational, to wit, “Organizational experience is all experience regarded from the organizational point of view, i.e. as the world of organizing and de-organizing processes” (1910-13, 4). Then, he elaborately discusses numerous parallels

between nature and human invention to assert that, “the means of spontaneous organization in nature and the methods of conscious organizational work of men, separately as well as in conjunction, can and should be subject to scientific generalizations” (ibid. 7). Next, he notes that laypeople and scientists often note enormous similarities across distant spheres of experience, but set them aside as coincidences and analogies; he suggests that there must be an actual unity of organisational principles, but this has not been studied scientifically to establish a ‘universal organisational science’: it’s time, he declared in 1912, has come (ibid. 8). He named this science ‘tektology’, and his call was: “Tektology should scientifically and integrally arrange the organizational experience of mankind” (ibid.)

Bertalanffy (1956), in his ‘Quest for a GST’, argues that structural similarities or isomorphies are found across different fields – for example, in the study of the dynamics of biological populations, in quantitative economics, and in chemical kinetics, very similar models of families of equations apply. It

“...seems, therefore, that a general theory of systems would be a useful tool providing, on the one hand, models that can be used in, and transferred to, different fields, and safeguarding, on the other hand, from vague analogies which often have marred the progress in these fields” (Bertalanffy, 1956, 37).

A second aspect he considered more important was the problem of ‘organised complexity’. He was referring to the growing recognition of concepts like organisation, wholeness, directiveness, control, self-regulation and differentiation – ideas alien to the physical sciences but popping up everywhere in the biological, behavioural and social sciences. In order to indicate the directions in which GST can inquire and the ideas that can inform it, he describes open systems (which, unlike closed systems, exchange matter and energy with the environment and maintain a steady state, which is not the same as a chemical or thermodynamic equilibrium), equifinality (where the same final state can be reached from different initial states in multiple ways; in closed thermodynamic and chemical systems, there is only one final state depending on the initial state and the process underway), information and feedback (which allows for order to be maintained or increased, unlike entropy in physical systems where breakdown or increased disorder results with time if no factors are altered), homeostasis, equipotentiality (resulting from communication and feedback of information), teleology (goal seeking, adaptive or purposive behaviour), and

organisation. He suggests that an integration of the various sciences, and scientific education, could be obtained through the GST.

Norbert Wiener (1948) is considered the originator of cybernetics – “a theory which will cover the entire field of control and communication in machines and in living organisms” (1948, 14) – with vast and fundamental applications in systems thinking, computer science, biology, neuroscience and philosophy. Wiener (1950) observed that despite the second law of thermodynamics (which states that entropy/disorder in the universe is constantly increasing), there are pockets where there is a tendency for organisation to increase. Life continuously evolves increasingly complex and highly organised forms. He states: “In control and communication we are always fighting nature’s tendency to degrade the organized and to destroy the meaningful; the tendency for entropy to increase... The commands through which we exercise our control over our environment are a kind of information we impart to it” (1950, 20-23). Hammond comments on the role that cybernetics played:

“In incorporating circular forms of causality and highlighting the importance of information and communication in the organization of complex systems, cybernetics moved beyond the linear causal modes of traditional mechanistic thought, opening the door for more recent discoveries in the chaotic dynamics of nonlinear systems. Further, as Steve Heims points out in his history of the Macy conferences, the most significant innovation emerging out of work in this field was the linking of the concepts of purpose and goal-directed activity across biological, technological, and social systems.

In conjunction with emerging computer technology and communication networks, cybernetics highlighted the essential role of information in organization as well as the related dimensions of language, coding, and structure” (2003, 64-65,67).

One other key name associated with the early development of cybernetics and information theory is Claude Shannon (1948), working at Bell Telephones, who provided a mathematical theory of communication. Likewise, Ross Ashby (1956) was a psychiatrist who made pioneering contributions to cybernetics and the study of complex systems – his law of requisite variety is an axiomatic principle in these fields. (In simple terms, this states that, for some systems to respond adequately to a variety of disturbances, it must possess a matching variety of responses: an organism must

have enough anti-toxin variety to match the variety of attacking bacteria; and a fencer equal variety in modes of defence to parry various modes of attacks). Walter Cannon's work in physiology originally formulated the concepts of feedback and homeostasis (Hammond, 2003, 63), which became pivotal in GST. Later on, Heinz von Foerster (1979) straddled physics and philosophy; his key ideas included second-order cybernetics (examining the observer and processes of observation), the process of self-reflective systems and a description of homeostasis. Hammond (2003) provides a detailed overview of developments in the formative period in cybernetics and the controversies that existed at that time around the concept of feedback. She reproduces a diagram from Richardson (1991) that indicates all the key thinkers involved in developing its different strands (2003, 69). A key theme that recurs throughout her historical overview is the constant tension between the holistic/ecological and the technocratic elements in this pluralistically diverse field of systems thinking, which, we can add, continues to the present. The play between these elements, in relation to the applied side of systems thinking, has also frequently drawn sharp criticism from sociologists and philosophers: namely, that systems thinking (more accurately, the technocratic side of it) is instrumentally supportive of the existing imbalances in social relationships – such as aiding war, organisational and social control, or ecological destruction (examples, Lilienfeld, 1978; Taylor, 1988; Harvey, 1989; Allen and Hoekstra, 1992). These challenges spawned efforts to correct the deficiencies (Flood, 1990; Jackson, 1991b; Flood and Jackson, 1991b), leading to the development of the currently dominant paradigm of Critical Systems Thinking, discussed in §4.5.3.

4.3 Origins and developments in the Sciences

Systems ideas and laws emerged from many scientific disciplines, and in turn, these inspired application and investigations in other disciplines, as well as the attempt to formulate universal and generally applicable systems principles. Since the original impetus came from the behavioural sciences (where the inadequacy of mechanistic and reductionist ideas surfaced), the normative element (bypassed at the time in the physical sciences) naturally led to questions about the implications of the newer formulations, and attempts were periodically made to evaluate systems thinking in terms of philosophical or sociological tenets. With the felt need for new ways to solve the requirement of scale in aspects such as transportation and production during the war, and to support the development of large modern institutions in political, social

and economic spheres, many specialised branches for applying systems thinking developed rapidly. This, in turn, led to periodic cyclical efforts to integrate these varied streams and develop a more cohesive transdisciplinary framework with a shared language.

An institutional milestone in this movement was the Macy conferences, which encouraged interdisciplinary collaboration and transfer of ideas and proved a home ground for the incubation and dissemination of cybernetics and systems thinking (Heims, 1991). Another was the establishment of the Society for General Systems Research in 1954, to be renamed as the International Society for the Systems Sciences in 1988, which established the disciplinary status and remains the leading professional body in the field.

A selective summary account illustrating some significant contributions follows in §4.3.1 to §4.3.5; the interested reader is referred to available and well-established resources such as Midgley (2000) for a recent concise overview; Hammond (2003) for a historical account of the early years; Francois (2004) for an encyclopaedic listing of over 3,800 entries; and Schwarz (1996) for an elaborate network diagram of over 640 nodes indicating all the known sources and streams of systems thinking at that time. For detailed expositions of key approaches by their original authors, refer to the historical collection of 76 significant articles in Midgley (2003) and the book series on contemporary systems thinking (Flood, n.d.). Some key reflections summarising the journey of systems thinking over the decades include Jackson (1990, 2001 and 2010); while summary overviews of the contributions of systems thinking to the fields of management science and operational research are to be found in Jackson (2009) and Mingers & White (2010).

4.3.1 Contributions from philosophy and the disciplines

We have briefly visited some of the philosophical origins of systems thinking in the period until the 1950s in §4.2. According to Jackson, some of the notions philosophy contributed to systems thinking include: holism, the use of analogy, restrictions on our capacity to comprehend the whole, totality and a systemic process of inquiry (2000, 46). As newer schools of thought emerged, systems thinkers responded to these developments as well as criticisms of their own contributions by assimilating these and developing their own thinking and methods. These influences are reported in later

sections, especially §4.5, as we consider the trajectory of the development of systems thinking and its applied side. Key influences include that of the interpretivist or phenomenological philosophers on the development of soft systems thinking and interpretive systemology; of Habermas, in particular, on the approach called Critical Systems Thinking; and later, of the postmodern thinkers.

In terms of the contributions from various disciplines, there were many efforts in the early years, especially the 1950s, to develop the idea of a GST. Currently, even as some systems thinkers (or systemists, hereafter) continue to pursue the idea of a grand unifying explanation (for example, Rousseau, 2014, 2015), the majority now believe that seeking a unified single theory and language may not be appropriate to the staggering complexities involved across the fields and levels of inquiry encompassed within the rubric of systems thinking. Just a few key philosophical contributions are mentioned below; a useful compendium of significant systems thinking articles, many with an emphasis on systems philosophy, can be found in Midgley (2003).

- Bahm (1947) explored emergence as a significant systemic phenomenon.
- The ‘theory of action’ from Talcott Parsons (1964) attempted a unified picture of social sciences and living systems, considered in terms of an evolutionary and teleonomic perspective, using a heuristic scheme for analysis (see Jackson, 2000, 56-7, for a summary of this theory, which was hugely influential in the social sciences of the 1960s).
- Laszlo (1971) introduced and constantly developed the idea of a systems philosophy, based on frontier discoveries in various sciences and studies of cognition and consciousness (some of his work is discussed in chapters 1 and 6).
- Mario Bunge (1977) argued against a non-scientific holism, warned against ‘pseudo-science’ and preferred the use of the term ‘systemic’ rather than ‘holistic’ to describe the general systems approach.
- Niklas Luhmann (1990), who was originally a PhD student of Parsons, proposed a radical new theory of society, seeing social institutions as self-producing via communicative events. This extended key ideas from systems science and cybernetics into sociology, and

- Fuenmayor (1991a,b,c) elaborates an approach to an ‘interpretive systemology’ based on a detailed onto-epistemology expressly developed for supporting this (see §4.5.5 for discussion).

4.3.2 *The Behavioural Sciences (biology, sociology, anthropology, ecology, economics)*

Clearly, the best-known biologist to influence systems thinking was Ludwig van Bertalanffy (as also seen in §4.2). According to Jackson,

“many (example, Emery, 1969; Lilienfeld, 1978) have argued that Bertalanffy’s famous article *The Theory of Open Systems in Physics and Biology* (1950), which first rigorously distinguished closed and open systems, established systems thinking as an intellectual movement” (2000, 48).

Hammond describes the situation at the turn of the 20th century, and the contribution of the new paradigm of organicism in biology, which transcended the mechanistic and the vitalist paradigms (a view that there was a divine or mystic force, ‘a vital spirit’, that guided the life process):

“Questions about the nature of life informed the debates between mechanistic and vitalist orientations that focused on the source of organization in living systems and the nature of consciousness. Organismic biology emerged as an attempt to overcome the dichotomy between these two views and to redefine the relationship between the physical and biological sciences, establishing biology as an autonomous science...organismic approaches sought to understand living organisms in holistic, dynamic, and interactive terms.

The most significant contributions to the emergence of systems thought from the organismic tradition were its emphasis on (1) the source of organization in complex systems, (2) the role of information in the maintenance of that organization, and (3) the importance of considering any system in relation to its environment” (Hammond, 2003, 32- 33).

Checkland (1981) traces the significant contributions and milestones in the school of organismic biology and its contribution to the early stages of systems thinking. Lotka’s (1925) work on population dynamics heralded the idea of open systems. The German biologist Hans Driesch (1914) researching development in sea urchin embryos, adopted the Aristotelean term *entelechy* in biology to refer to a form-giving agency or

force that reregulates and directs the development and functioning of organisms. Driesch also derived the concepts of equipotentiality (the inherent ability of growing cells to adapt and differentiate themselves according to the position or tissue they occupied in the developing organism, and not according to a predetermined role) and equifinality (the ability of an embryo, or even a slice of it, to reach the same eventual final state from many starting points and following diverse developmental pathways). The French physiologist Claude Bernard (see Hammond, 2003, 33-43), evolved the concepts of feedback and homeostasis based on his study of the organism's inherent ability to maintain a stable internal environment despite external fluctuations. Following his work, and adding to the understanding of functional integration of various organs and systems in living organisms, were Sherrington, Henderson and Cannon. Cannon's *The Wisdom of the Body* (1932) was extremely influential in disseminating the systems approach in America in the mid-20th century (reported in Hammond, 2003, 41).

Hammond notes the influences and the interdisciplinary crosscurrents that rippled into and from these contributions from organismic biology:

“The relationship between form and process was further elaborated by Whitehead, who suggested that the concepts of organization wholeness, and internal relations provided a foundation for a new unified science, once the certainties of deterministic physics had been shattered by developments in relativity and quantum theory.

Haraway [1976] describes the similarity between biological organicism and the emerging concept of structuralism in the social sciences, in their respective concern[s] with organizing relationships. Biological concepts of structure, growing out of insights from crystallography into the nature of molecular structure, were central to the emergence of a nonvitalist organicism. Jean Piaget defines structure as “a system of transformations” and has identified similarities between structuralist approaches in different disciplines. Like organicism, the notion of structure is based on the concepts of wholeness, transformation, and self-regulation. Issues of form in structuralism are dealt with not in terms of a static anatomy, but in terms of systematic and dynamic transformations that conserve the totality.

Bertalanffy's original work in theoretical biology drew heavily on Driesch's work in developmental biology. The challenge of explaining the process of differentiation in embryonic development lies at the heart of organismic conceptions in biology. Two other major influences in the evolution of Bertalanffy's work were gestalt psychology and mathematical biology. In their discussion of systems thinking, Nic Kramer and Jacob de Smit credit Wolfgang Kohler with the first impulse toward general systems theory, in his attempts to explain human behaviour using holistic rather than mechanistic principles. What was important for him was the overall configuration of a complex whole rather than the structure of its parts. In his 1924 book on physical Gestalten, Kohler sought analogies between organic and inorganic systems that could explain the unique qualities of organic systems.

...The epistemological parity of the physical and biological sciences was grounded in the concept of emergence, which is a central feature in organismic models. In what has become a defining characteristic of systems thinking, emergence implies that the whole cannot be reduced to the sum of its parts or, in other words, that a reductionist approach to understanding the world cannot contain the whole story...In his articulation of an evolutionary holism, Smuts echoes the Gestalt psychologists, arguing that the motive force of evolution is the formation of "wholes," which is an inherently creative process, not a mere unfolding of immanent potentialities.

...In his elaboration of the feedback concept, Cannon provided an important contribution to this growing preoccupation with information and communication systems, marking a major turning point in the transition from organismic to systems models that came about in the 1940s and 1950s. This transition from the metaphor of the organism to that of the system is reflected in the emergence of cybernetics and information theory and the corresponding shift in emphasis from such concepts as integration and homeostasis to a focus on feedback, information, and communication. It was also profoundly influenced by parallel developments in the fields of engineering and management, providing grounds for continuing dialogue between [these] two ostensibly unrelated fields. This dialogue is at the heart of the evolution of systems thought, and the implications drawn from the interaction between technological and biological developments in theories of information and

feedback have significant consequences for the further evolution of both ecological and social theory” (2003, 37-43).

Subsequently, from the 1970s, the work of Humberto Maturana, a Chilean biologist and his student Varela (see discussion of their work in §5.2.2 and §5.2.3), has very significantly influenced the field. Their two key contributions involve the recognition of the central identity of living systems issuing from their self-reproducing behaviour, for which they coined the term ‘autopoiesis’; and the epistemology they constructed from empirical findings in neurobiology, postulating that cognition is at the centre of the autopoietic process of living at all levels. As Jackson reports,

“Maturana and Varela begin by posing the question ‘What is the necessary and sufficient organization for a given system to be a living unity?’ (Varela et al, 1974)... Mingers (1995), in an excellent introduction to their work, explains that the autopoietic organization ‘produces, and is produced by, nothing other than itself. This simple idea is all that is meant by ‘autopoiesis’. The word means ‘self-producing’ (p. 11)’. This simple idea gets considerably more complicated when Varela et al. (1974) get to work on a definition: ‘the autopoietic organization is defined as a unity by a network of components which (i) participate recursively in the same network of productions of components which produced these components, and (ii) realize the network of productions as a unity in the space in which the components exist’ (p. 188).

...Von Krogh and Roos (1995) argue that since its introduction, autopoiesis theory has gradually evolved into a general systems theory. In our opinion, this has had an impressive impact in many fields... (p. 41)” (2000, 49-50).

The further development of the idea of autopoiesis and its implications are discussed in chapter 5. In very recent years, there is an increased reporting of developments in the field of consciousness studies and neurobiology. Indeed, the discovery of unexpected interconnections and principles about consciousness and intelligence pervading relationships in the biological universe from microbiota and fungi to plants and animals, as well as their symbioses with one another and their links to changes in (and the evolution of) the physical universe, is further underlining the fundamental nature of the mutual entanglement and unfolding of aspects of reality that were until now

considered as belonging to separate realms or levels of organisation (Allen, 2007; Barto et al, 2012; Bancarz, 2014).

I mention a few other contributions from the behavioural sciences in brief:

- Kurt Lewin (1947a, b, 1948) produced path-breaking work on the psychology of groups, which has revolutionized understanding of organisational systems and spilled over into many other areas. He was the first to break the impasse in the nature vs. nurture debate by proposing that it was nature and nurture in dynamic interplay. He is widely credited with founding action research and is well known for his field theory (see Midgley, 2000, 117-120 for a brief discussion).
- Kenneth Boulding (example, 1956) was one of the founders of the Society for General Systems Research, kicking off this idea with a letter to Bertalanffy (Hammond, 2003, 217). His work embraced economics, ecology and peace studies. He was one of the early proponents of GST, and developed his taxonomy of nine system levels representing increased complexity. He emphasized the need for better understanding the role of information in organisation, especially at higher levels, and contrasted ‘knowledge’ with ‘information’ – his 1956 book, considered his most influential, dwells on this subject. He also wrote about conflict resolution, developing an idea of integrative systems; like Vickers’s (1965) idea of appreciative systems, these kinds of efforts indicate how early the systemists were seized with the need for a deeper understanding of cognitive processes. Cynthia Kerman (1974) has written a biography, and a useful summary account of his life and thinking can be found in Hammond (2003).
- Gregory Bateson (1972, 1979; also see Brockman, 1978) undertook highly original inquiries that he conducted in fields as diverse as psychology, anthropology and cybernetics, attempting to formulate a theory of the phenomenon of consciousness or mind. A key idea in this work is that the ‘mind’ goes beyond the confines of the body, in the sense that feedback loops between organism and environment are essential to the existence of the mind.

- Douglas Hofstadter (1979), a scientist and an artist, researched the essence of human cognition, creativity and aesthetics, even as he contributed to the computational basis leading to the inception of the field of artificial intelligence (which he preferred to the term ‘cognitive science’).
- Robert Rosen (1985) was a theoretical biologist who studied relational complexity and engaged with such questions as ‘what is life?’ and ‘why are living organisms alive?’ His book *Anticipatory Systems* describes, in detail, what he termed the ‘modelling relation’. He argues that mathematical thought is really about patterns, and the narrow focus on computability excludes much of this.

Hammond discusses the evolution of systemic ideas in ecology and related disciplines, which have most recently acquired a sharp focus due to the climate change crisis (2003, 77-84). She notes that applications of systems concepts in ecological and social sciences are especially prone to controversy owing to the normative elements in both fields:

“To some extent, the ecosystem model transcends the deterministic orientation of earlier organismic models, which reinforced notions of goal directedness and self-regulation, and instead reflects a more postmodern view of the world as dynamic, contingent, and ever changing.

...Perhaps more than in any other field, this divergence between the applications and implications of systems ecology [to questions about how humans should live] illustrates the paradoxical relationship between holistic/ecological and technocratic elements in the systems approach” (2003, 81).

4.3.3 Cybernetics, Systems/Control Engineering

Apart from the biology and the behavioural sciences, the other key area from which challenges and ideas emerged and fed into and from systems thinking was engineering, management and other related disciplines associated with the military-industrial complex, leading to the development of such specialisations as Systems Engineering and Operations Research. I shall refrain from providing a detailed account of these origins and developments because they have been well chronicled in numerous studies

and accounts. Only a few critical exemplars are noted here, and certainly without a claim that they are representative. It is a peculiar irony of human history that the military and war efforts inspire and generate powerful and effective new technologies, some of which later becomes useful for other productive social purposes. Such ethical dimensions too have been chronicled, exhumed and evaluated extensively. A pertinent brief and engaging discussion in relation to some of the early findings and the pioneers in these areas of systems thinking can be found in Hammond (2003 - chapters 3, 4, 7 and 8).

A brief mention of the contributions of Wiener, Shannon, Ashby, and von Foerster to Cybernetics was made in §4.2. A few other names perhaps worthy of mention are:

- George Dantzig (1963), who provided the simplex method of linear programming.
- John von Neumann, Oscar Morgenstern (see Neumann and Morgenstern, 2007) and Anatol Rapoport (1966), who may be counted amongst the early pioneers of game theory.
- Jay Forrester (1969a, 1971) pioneered the development of System Dynamics, an approach to representing the nonlinear behaviour of complex systems over time using stocks and flows – the two basic kinds of variables involved in feedback loops. System dynamics creates models that can capture equilibrium behaviour as well as indicate what happens when thresholds are breached. Emerging in feedback studies and cybernetics, this has developed into a highly sophisticated and general-purpose tool for representing larger systems and mapping complex relationships. This tool has been used and further developed and refined by a large team of people at the Sloan School of Management in the Massachusetts Institute of Technology. After initial applications in corporate and business settings, it has found widespread application in social policy. Two early successful applications that caught world-wide attention were the Urban Dynamics model produced in collaboration with John F. Collins (a former mayor of Boston visiting to study at MIT) by Forrester (1969b); and the report to the Club of Rome entitled Limits to Growth by Donella Meadows et al (1972), which provided a compelling warning about the dangers of unbridled resource consumption and urban-industrial growth. A sophisticated array of

software tools for causal loop mapping and dynamic systems modelling and enormous teaching resources, off and online, are available today. Teaching simple ways to surface counterintuitive patterns of interlocking dynamics in systems by drawing cause-and-effect diagrams, and identifying a set of common archetypal patterns, the book by Senge (1990) entitled *The Fifth Discipline* is the largest selling management text of all time.

- Mihajlo D. Mesarović (et al, 1970), who provided a mathematical theory of coordination in multi-level hierarchical systems.
- George Klir (1972), who produced some pioneering work on computation, information systems and fuzzy logic.

Some significant later contributors in this domain are Peter Schoderbek et al (1985), who elaborated on the application of the black box and other cybernetic concepts to the design of management systems; Raul Espejo (example, 1989), who developed the concept of managerial variety engineering; and Magoroh Maruyama (1963), who further developed the feedback concept, adding the idea of deviation-amplifying loops. These three elements underlie the Viable Systems Method (VSM), an application of cybernetics to organisational analysis, developed by Stafford Beer (see §4.3.5). Espejo is the most well known subsequent applicant of Viable Systems Modeling, after Beer and has done considerable work applying cybernetic concepts to clarify the management sciences. A vast proliferation of specialised subdisciplines and methods, bearing terms such as ‘systems analysis’, ‘management systems’, etc. have developed in this domain.

4.3.4 The Physical Sciences and Complexity Theory

Curiously, the physical sciences, which systems science criticised for propagating a mechanistic, reductionist, Newtonian idea of the world and the systems it is composed of, is today in a position to inform us anew about interconnectedness, coherence and the increasing possibility of a more fundamental reality than the one we commonly take for granted in the West; i.e., the deeper reality being a principle of intelligence/consciousness, with the entire physical or material world, as we perceive it, being an effect or projective dimension of our senses and apparatus of consciousness. The further reaches of these developments at the frontiers of physics,

chemistry and the like are difficult for a layperson to comprehend. Fortunately, several scientists themselves, as well as other commentators/interpreters of science and the philosophy of science, have offered illumination on this score in simpler everyday language. The classic book, *Tao of Physics* from Fritjof Capra (1975), first noted patterns in atomic physics and their parallels in Eastern philosophy, synthesising these to point to new systemic understandings. Jackson (2000, 77 - 81) has devoted several pages to a summary and review of the ideas contained in Capra's more recent book, *The Web of Life*, and its significance to the systems viewpoint. Capra, along with Pier Luigi Luisi, has now authored a textbook on *The Systems View of Life: A Unifying Vision* (2014), presenting a detailed history of the scientific findings that have contributed to the evolution of systemic ideas. Given that our models of the universe at the atomic or quantum levels are sophisticated mathematical abstractions, as well as the fact that instrumentation and recording of the events and objects at these levels are also dependent on many levels of abstraction, the extrapolation and discussion of the nature of the world from these scientific researches necessarily involves interpretation grounded in philosophical positions. To my mind, therefore, it is an ironic comment on the nature of the uncritical and religious faith in "Science" in the Western world that it seeks confirmation of principles that have been commonplace and self-evident across centuries in most human civilisations. Yet every piece of evidence that does not appear to meet the religious prescriptions of that 'science' is labelled as 'spiritual' or 'mystic', which in effect consigns all such knowing to the garbage heap of this new theology. For example, there are numerous healing traditions across the world, and some of them have had demonstrable successes, yet the singular reliance on allopathy (despite its numerous problems) is unshaken in the mainstream of the West, while effective answers from other systems are routinely condemned (see Shapiro and Selin, 2003; also my example in chapter 2).

Some other contributors from the physical sciences worth mentioning are Jantsch (1980), Bohm (1980), Wheatley (1992), and Goswami (1993) – some discussion of the last two contributors is in chapter 6. Prigogine, with his research on dissipative structures, completely overturned fundamental ideas about chaos, order and time in relation to basic chemical and physical elementary units (Prigogine & Stengers, 1984).

An introduction to the early developments in chaos theory and complexity theory has been provided by the science historian James Gleick (1987). Gleick portrays the efforts

of dozens of scientists - including Edward Lorenz, Robert May, Mandelbrot, Helge von Koch, Robert Stetson Shaw, Norman Packard and Stuart Kauffman. A few key milestones are summarised here: Lorenz's pioneering discovery (first reported by him in a meteorological journal in 1963) of how small-scale shifts in initial conditions in weather can lead to very divergent later consequences is usually regarded as signalling the birth of chaos theory. This paved the way for understanding the vast presence of non-linearity in the natural and social sciences: the image of the Lorenz attractor, resembling an owl's mask or butterfly wings, is a classic emblem for the explorers of chaos (Gleick, 1987). May extended the application of chaos theory to biological populations. Mandelbrot conceived the geometry of fractals – complex patterns found in nature that arise from self-similarity – as, for example, a cauliflower, where the parts are similar to the whole. Koch constructed a mathematical curve to express this idea, giving rise to the Koch curve and the Koch snowflake (see Gleick, 1987, 99). Shaw discovered 'strange attractors', extending the theory to further areas of information sciences; and Packard, his colleague, is credited with creating the phrase 'edge of chaos' to describe a narrow transition zone between order and chaos (Gleick, 1987). Kauffman (1995) applied these ideas to biology and evolution to create a model for 'fitness landscapes' – simply put, the idea of modelling fitness of many individuals in a population like a topological map, which has later found application in immunology and theoretical computer science. Emmeche et al (1997), provided an ontology of levels to explain the phenomenon of emergence. Langton (1990) and others researched cellular automata to look at conditions for emergence of computational activity; an example of work on genetic algorithms is Forrest and Mitchell (1993); John H. Holland (2006), a major contributor, talks about the use of computers to model complex adaptive systems.

4.4 A Summary – What is Systems Thinking?

Systems thinking, described as a 'trans-discipline' (because its ideas apply across several disciplines in the same way that statistics does), is a vast body of theory, methodology and practice. It can best be described as the application of concepts from systems theories to *frame our understanding* of the world and about possible future action - what ought to be or could be (Ulrich, 1983; Fuenmayor, 1991a, 1991b, 1991c). It is important to note that, from a systems thinking perspective, systems theory and models are applied to develop an appreciation of phenomena; there is not

necessarily an assumption that the systems exist in the real world (Checkland, 1981; Midgley, 2000). It applies a range of methodologies that aim for an *adequate understanding* of extant phenomena (Ulrich, 1983, argues that the aspiration to comprehensiveness is illusory), and it seeks to produce more widely acceptable transformations (Jackson and Keys, 1984; Flood and Jackson, 1991a).

In brief, ‘systems thinking’ refers to ways of thinking about the world in terms of systems that influence one another within a whole, and it describes networks, webs and cycles of relationships rather than linear cause-effect relationships (Checkland, 1981; Senge, 1990; Forrester, 1994; Anderson and Johnson, 1997). Systems thinking, therefore, helps in the exploration and definition of the scope of analysis and the reach and focus of possible actions.

While the condensation of ideas in the previous two paragraphs is meant to be broadly summative of the current status of thought, in reality the development of the ideas in the field is far from possessing the clarity and cohesiveness such summarising suggests. This is considered next in §4.5 where we turn our attention to the category of applied systems thinking. This has moved to occupy the foreground and claim significance in the fields of Operational Research/Management Science (OR and MS) since the 1980s, in comparison to systems thinking in the disciplines or the development of systems theory.

4.5 Systems thinking applied to the management sciences – three ‘waves’

Jackson (2000) describes the period during the 50s and 60s, which saw the discovery of systems principles in the disciplines, the attempted formulation of a general systems theory and the application from both these streams to the creation of new methods for intervention in the management and social sciences, as a period of “normal science”, in the Kuhnian sense (2000, 3). The application of these ideas, in organisational and social settings grew apace, and this strand of applied systems thinking can be distinguished from the other two strands of systems discoveries in the disciplines or the attempted building of a systems science. During the 70s, and early 80s, organisational cybernetics (although initiated in the 50s by Beer) and soft systems thinking came to the fore. Jackson describes these approaches as being at war with traditional science as well as amongst themselves, and marks this as an entry into a period of “Kuhnian crisis” (also, see Dando and Bennett, 1981). In addition, these

applications were isolationist (Jackson, 1987) in that they tended to originate in different paradigms and argue that theirs is the only right one, thus leading to a fragmentation of the discipline. This called for a fresh burst of effort in the 80s and 90s to integrate various applied systems thinking ideas under the rubric of Critical Systems Thinking (CST), and a brief description of the development of applied systems thinking from the 1950s to the 1990s follows shortly. However, this is not the end of the story. The idea of CST as providing an overarching integrative scheme came under attack for being insufficiently grounded in sound theory, and therefore underwent further revision in the mid-1990s and early 2000s, resulting in a second phase of CST and the emergence of a new term, ‘systemic intervention’, to characterise the latest approach. Issues of methods and paradigms, problems in combining them, and how to identify the best approach or combination to apply in specific settings, spawned much debate (see §4.5.3).

The whole process is better seen from an evolutionary perspective, rather than the Kuhnian frame, with each stage adding and building further on the previous one, overcoming some of the deficiencies noticed, rather than replacing the previous one. Thus, the usefulness and the strengths of each perspective are available for deployment even as further perspectives and approaches are added to the repertoire. In fact, it is possible to map the successive, unfolding waves of systems thinking to a typology like the Existential Universe Mapper (see §3.4.1), and such an exercise, although not included in this thesis, can add some insights to the picture of development.

It is difficult to describe the vitality, ferment and excitement of the profuse contributions, criticisms and debates that must have accompanied the development of applied systems thinking in the decades until about 2000. Each successive wave or development redefined the key concepts and their relationships. Consider, as an example, three key shifts. *Systemicity*, originally considered a property of the real world to be unearthed (von Bertalanffy, 1968), was redefined as a property of the process of inquiry (Checkland, 1981). *Complexity*, seen at first as a function of highly connected and interdependent parts of a system (systemic complexity, or natural world complexity: Midgley, 1992b), was unpacked and recast to embrace subjective/internal world complexity and situational/social world complexity (Flood, 1987, 1988; Flood & Carson, 1988; Midgley, 1992b); their interaction in multiple ways produces a meta-level ontological complexity (Midgley, 1992b). *Boundaries* are not just about the

edges of real world systems, but equally define the elements of our proclivities which determine which aspects and dimensions of the world to inquire into and in what discourse to frame inquiry discussions (example, Ulrich, 1983; Midgley, 1992a, b, 2000; Midgley et al., 1998).

Applied Systems Thinking, the application of systems theory in social and organisational contexts, is usually seen as having unfolded in three stages. One popular classification (the earliest and simplest formulation, but it has stuck) is to describe these stages as Hard Systems Thinking (HST), Soft Systems Thinking (SST) and Critical Systems Thinking (CST) (Jackson, 1991a); although Jackson revised and tuned the categories later (see 2000) in an effort to ground the field philosophically, and refers to these as the functionalist, interpretive and emancipatory/critical systems approaches, adding a fourth, 'postmodern'. Checkland first coined the terms HST and SST in 1981 to distinguish his own distinctive new approach from the 'hard' systems engineering approaches, which assumed that systems exist in the real world; rather than as a way of describing it according to our own worldviews and perspectives. Jackson has sought, in his 2000 book, to position his version of CST as separate from the others that he has clubbed together into the emancipatory stable, but I prefer to locate it broadly in the same category. Midgley (2000) describes them in terms of three 'waves': the first wave (corresponding to HST) integrated insights from both quantitative and human relations branches of applied science; the second wave (SST) began to see 'systems' as constructs to aid understanding, rather than as real world entities; and the third wave (CST), advocates a critical stance with regard to power relations and the use of methodological pluralism.

A question may arise as to why problem solving in the real world requires reference to theory, and, even more so, philosophy; and conversely, what does philosophy gain from the mess of practical reality? The reader is referred to Midgley (2000) as well as Jackson (2000) for detailed discussions in this regard. The short answer is, they complement and complete one another and ensure some degree of recovery from excesses and blindnesses that might occur otherwise. Jackson also discusses the status of applied systems thinking, arguing that it adds some real and well-tested rigour to problem solving, as against the fads that seem to characterise the field of organisation management (2000, 101-104). Over these decades, growing especially from the

eighties, applied systems thinking has become the key achievement of the systems movement (Jackson, 2000, 92).

A rough summary of the key steps on this journey follows. It is not relevant to the purpose of my thesis to discuss these applied methods in detail. My purpose is to recount quickly the scope and impact of these developments, before going on to analyse in some detail the most recent approach (systemic intervention) that provides the trigger point for my inquiry.

4.5.1 The First Wave – Hard Systems Thinking (the functionalist approach)

HST refers to a problem solving approach which assumes that systems represent reality (that systems exist in the ‘real world’), and the models created can be used to support learning and/or predictions about the reality they represent (Jackson, 2003; Pidd, 2003). It emphasises quantitative data (Checkland, 1981). Jackson finds that two epistemological positions can be identified:

“Some take the positivist position that empirical observation of a system will reveal the law-like relations between parts governing its behaviour. Others take the structuralist view that it is necessary to describe structures and mechanisms operating at a deeper level because it is these that causally generate the observable phenomena” (2000, 107).

Despite many later developments, functionalism still holds strong sway in applied systems thinking, for a variety of reasons (Jackson, 2000). It is a prolific category, spawning immense variety in approaches. The core and ongoing hard systems thinking tradition includes operational research, systems analysis and systems engineering.

The ‘organisations-as-systems’ tradition, developing between sociology and organisation theory, with strands dominated by an organismic or a mechanical analogy. Jackson (2000) reviews the examples of Barnard’s (1938) systems thinking, contingency theory and socio-technical systems theory. The last is associated with the Tavistock Institute of Human Relations and built from their study of coal mining (Trist & Bamforth, 1951). F.E. Emery and E.L. Trist (1965) contributed the theory of socio-technical systems, arguing that work organisations have both social and technical dimensions, which should not be optimised independently. Organisations, seen as open systems, can best realise their goals if their social, technological and economic

dimensions are jointly optimised (Trist et al, 1963; Emery & Trist, 1965; Emery & Thorsrud, 1969, 1976). While this stream of work is a well-recognised milestone in the Human Relations movement, Midgley marks it as a milestone in systemic intervention also because it is a striking example of a synthesis of ideas from multiple paradigms – he traces its influences to the traditions of human relations, psychodynamics, action research and the theory of open systems, and remarks that one of its original and striking findings (at the time) was that of semi-autonomous work groups as arguably the most effective and satisfying way of organising work (Midgley, 2000, 188).

The first wave development of System Dynamics can be said to belong to HST. This is an extensively developed method (and later a soft system dynamics approach was developed as part of the second wave of systems thinking). It essentially maps feedback loops across two kinds of variables, stocks and flows, and can generate complex representations of possible underlying structures and their tendencies to equilibrium or (positive or negative) change, explaining complex behaviour (see the discussion on Jay Forrester in §4.3.3).

Organisational cybernetics, most famously represented by Stafford Beer's (1972, 1979, 1985) Viable Systems Modelling (VSM) – a model of a viable organisation useful to assess real organisations or design new ones. Beer is credited with coining the term 'management cybernetics', and the VSM applies the theoretical principles of cybernetics. Any organisation can be analysed using this highly generic model. The word 'viable' implies a system capable of responding to any 'variety' (possible changes of state, representing threats and opportunities) in the environment. Managing variety (in terms of information) depends on the effective design of five subsystems. These are certain critical functions of viability, and not to be confused with existing structures or departmental boundaries in the system – they are implementation, coordination, control, development and policy, in loose terms. Cybernetic principles allow us to reconsider how effectively these are designed into the current form of the organisation and identify the gaps or weaknesses for redesign. There is an important element of recursion, which sees the overall system as composed of many nested levels, and a detailed and complex procedure to identify these elements before a diagnosis can be attempted.

Although usually categorised as a hard approach, its highly original and penetrating application of the principles of control and communication actually do effect autonomy

and viability of various subsystems at all levels, rather than leading to a highly centrally controlled form: what is being designed is effective organisation and not structure in a traditional sense (see also, Harnden, 1989, 1990 and Jackson, 2000, 278). With much valuable work done by Espejo (example, 1989) in adding softer interpretive elements to the VSM, the value of this approach is increasing. Beer is the author of several highly influential ideas, apart from the VSM.

In later life, Beer (1994a) developed Syntegration and Team Syntegrity: methods for structuring dialogues according to mathematical principles. Team Syntegrity is an approach to ideal dialogue and consensus building for teams of up to 42 people.

Among some other approaches usually seen as belonging to the HST tradition can be counted the ‘living systems theory’ tradition of James Grier Miller (example, 1978), seeking to extend Bertalanffy’s ambition of a GST; autopoiesis, seeing organisations and social systems as self-reproducing in terms of their culture (example, Luhmann, 1989); and complexity theory, seeing organisations and social systems as complex adaptive systems (example, Stacey, 1996).

Checkland (1978, 1981), employing Burrell and Morgan’s (1979) typology of social theory paradigms, was one of the most influential early authors to argue that HST is guided by functionalist assumptions, effectively signalled a movement to the development of the later paradigms. The limitations that came to be associated with HST include the ‘objectivist’ stance, leading to models being regarded as representations of reality rather than aids for the development of understanding (see, for example, Checkland, 1981; Espejo & Harnden, 1989; de Geus, 1994); and also to systems thinkers being positioned as experts (Rosenhead, 1989). Further, these approaches (to varying degrees) view individuals as parts of larger systems, to be manipulated like objects, and do not see them as agents possessing choices and goals that may not completely match those of the larger system (Checkland, 1981; Lleras, 1995). Consequently, this means that the systemic interveners usually assume that the goals of the organisation/management/project are unproblematic and will likely ignore the views or interests of all other persons (Lilienfeld, 1978; Jackson, 1991a). Jackson (1987) and Keys (1987) summarise this as a weakness in dealing with three aspects of human systems: complexity, subjectivity and power (also see Schechter, 1991).

Although socio-technical systems and VSM do not strictly possess these limitations as much as the other approaches here, Flood & Romm (1995a) criticise the VSM for prioritising organisational goals over those of the members; while Ulrich (1981) has distinguished between semantic and pragmatic levels of communication (concerned with meaning and significance) against the syntactic level (or information-theoretic measure) of variety as underpinning the VSM. From all of this, HST can be seen as serving the technical interest in prediction and control of natural and social systems (Jackson, 2000, 206), in Habermas's (1972) terms.

4.5.2 The Second Wave – Soft Systems Thinking (the interpretive approach)

Arising as a response to the limitations of HST, and incorporating some of the newer developments in the social sciences, the SST approaches emphasizes the intersubjective construction of meaning and uses dialogue and appreciation of mutual perspectives as a start point for explorations towards an accommodation of interests and action for improvement.

To quote Jackson,

“Interpretive theorists... do not seek to study objective ‘social facts’ or to search for regularities and causal relations in social reality. Systems possess a much more precarious existence as the creative constructions of human beings. It is necessary, therefore to proceed by trying to understand subjectively the points of view and the intentions of the human beings concerned; hence the importance in soft systems thinking of probing the world-views or Weltanschauungen (Churchman, 1979a; Checkland, 1981), or the ‘appreciative systems’ (Vickers, 1970; Checkland, 1981), that individuals employ in understanding and constructing social reality. Models are used to explicate particular worldviews rather than to capture some truth about the nature of ‘systems’ ” (2000, 211).

The leading proponents of this type of thinking include Churchman (1979a), Ackoff (1981) and Checkland (1981). Some major approaches in this category include

- Geoffrey Vickers (1965) pointed out that the industrial age overlooked the fact that its institutions, such as the business organisation, are social organisations, and it is this that actually provides them their inner coherence. Disregarding the

social leads to conflicts around the introduction of new technologies. His idea of ‘appreciative systems’ (set of tacit beliefs and standards by which people attribute meaning and value to experience) was inspirational for many, including Checkland (see below).

- C West Churchman (1968, 1971, 1979a, 1979b). Widely recognised as being one of the pioneers of management science and operations research, he was a trained philosopher who has a lasting impress on these fields, an example is his being the first to talk of corporate responsibility. He espoused the systems idea from the late sixties, and is credited by Ulrich (1983) for giving us the idea of the boundary critique (discussed in §4.6). During the 70s and 80s, the Wharton School of Social Systems Sciences where he taught saw the remarkable assemblage of great minds including Hasan Ozbekhan, Eric Trist, Fred Emery, Thomas A Cowan and Russell Ackoff. As a leading pioneer of OR in the post-war period in the US, became increasingly disillusioned with its failure to become a holistic, interdisciplinary, experimental science addressed to deal with issues in social systems (Jackson, 2000). His educational programme in social systems design at Berkeley was deeply influential, offering rich and penetrating philosophical insights into the very practical challenges of dealing with social systems. He inspired Mason & Mitroff’s (1981) method (described next), and the work of Ackoff (1981) and Ulrich (1983). He coined interesting aphorisms which are sprinkled throughout his books, and his 1979 call for embracing the ‘enemies of rationality’ (also see Rajagopalan and Midgley, 2015) would certainly have induced much consternation (if not indignation) amongst the proponents of the hard systems school. His approach rests on the idea of generating an antithesis to a proposal based on an alternate perspective (*Weltanschauung*) and, from this, to conduct a dialectic debate between ‘enemy’ viewpoints, as a way of enriching understanding and generating proposals that are more robust.
- W Russell Ackoff (examples 1970, 1974a, 1974b, 1999). Ackoff co-authored several books with Churchman: their introduction to Operational Research (OR) published in 1957 is commonly regarded as heralding the expansion of the discipline from its origins in wartime and post-war society. Credited with introducing the idea of purposeful systems, he is popularly known for his

management aphorisms and his work on design and problem solving. His ideas were implemented in the communications and military offices of the White House during the 1990s. Ackoff was a highly influential pioneer of operations research and equally became dissatisfied with the hard approach (“mathematical masturbation”, he called it – reported in Jackson, 2000, 232). He therefore named his own approach S3, standing for social systems sciences. His intellectual challenge to the reigning paradigm was formidable and has left an indelible imprint on the management sciences and operational research across the US, UK and Mexico (ibid. 233). He is credited with coining the term ‘messes’ to describe systems of interdependent problems (Ackoff, 1981). The main operating method of S3 is Interactive Planning, which proceeds through five phases of formulating the mess, planning ends, means and resources, and finally designing implementation and control. These phases may sound simple but rest on well thought out steps and principles, which, not unlike Churchman’s aphorisms, encapsulate deep insights into the nature of systems. Indeed, the ‘ends planning’ aspect is described as “Idealized design” (example, Ackoff et al, 2006), and involves the development of a vision of an ideal but still feasible future to work towards. In today’s management speak, this is commonly known as ‘back-casting’ (as opposed to forecasting), and Ackoff (1981) was a pioneer of this approach. Also, his case study of “A Black Ghetto’s Research on a University” (Ackoff, 1970), is often cited and describes an excellent piece of action research which involved a whole community in taking control of their own economic and social development.

- Peter Checkland (see 1976, 1981; also, Checkland & Scholes, 1990; Checkland & Holwell, 1998; Checkland & Poulter, 2006) is widely known for creating Soft Systems Methodology (SSM), an approach for exploring different perspectives on a problematic situation and finding accommodation between stakeholders. Checkland identified the limitations of Hard Systems Thinking (see §4.5.1 and §4.5.2) and developed this approach through careful action research. The method uses an iterative clarification process that does not require any great clarity or consensus on the problem definition or goals at the outset, but begins with the multiple perspectives various people bring in. Departing from the systems engineering approach of Jenkins, Checkland

(1981) proceeded to adapt and redesign the hard methods to extend their usefulness to ill-structured situations. Instead of creating models of real world systems, the emphasis is on modelling both perceptions of the problematic situation (without assuming it takes the form of a system) and systems of human activity that might potentially generate improvements. A ‘system’ therefore comes to be a way of thinking about possible strategic actions that fit together into a whole to generate change. Jackson (2000) discusses the reasons for the methodology’s great influence:

“It is clear in fact that soft systems methodology had benefited all along from being theoretically informed; early on by the work of Churchman and Vickers, later by the interpretive philosophical and sociological theories of Dilthey, Husserl, Schutz and Weber, and the social theory classification of Burrell and Morgan. Certainly it is because he has been able to theorize so thoroughly his break with hard systems thinking that his writings do not betray the ‘tensions’ between hard and soft positions that, as we shall see, he identified in Ackoff’s and Churchman’s work. Checkland is the purest of the interpretive systems thinkers because he recognized the theoretical direction in which soft systems thinking was heading, made this explicit and consciously constructed SSM on the basis of new, interpretive theoretical foundations. It is because of this, more even than because of the methodology itself, that his writings have had such a great impact on systems thinking and practice.

...Contemporary SSM is based on some clearly stated principles or ‘constitutive rules’ which guide the process of intervention in ill-structured problem situations. At the same time as it sets out these principles for method use, it does not determine that use. It provides a different response in each situation depending on the user and the nature of the situation. It is this flexibility that ensures its relevance in so many managerial situations. Checkland (1999) regards four intellectual breakthroughs as crucial to this success. These were the delineation of the notion of a ‘human activity system’; the use of models as epistemological devices rather than representations of the real world; the use of models to provoke debate and learning rather than for the

purpose of design; and the extension of SSM to the domain of information systems” (2000, 247, 268).

Criticisms against SSM are that it is based on a consensus worldview, which plays down conflicts of interest and assumes existing conflicts can be solved by debate (Thomas and Lockett, 1979); that Checkland has not actually faced the need to deal with truly incommensurable worldviews since he has always worked with managers – a community with shared interests (Burrell, 1983); and that its subjectivism and idealism prevent it from coming to terms with structural conflict (Mingers, 1984).

- Mason and Mitroff’s (1981) Strategic Assumption Surfacing and Testing proceeds through a structured set of steps to generate widely different approaches (policies) and themes, which are then debated in adversarial fashion, in order to generate a synthesis that is more deeply informed.
- Warfield’s Interactive Management (Warfield, 1994; Warfield & Cardenas, 1994). Originating in Systems Engineering, it was evolved specifically to deal with the soft aspects of complex organisation. It is based on a science of generic design that takes into account two sorts of complexity – situational complexity (arising from the context) as well as cognitive complexity (arising from the limited human ability to gather or process information regarding complexity), and proceeds through facilitated steps of inquiry based on numerous laws and principles to understand the situation and design effective action.
- Soft System Dynamics (Vennix, 1996) is an approach to system dynamics where the model building activity is facilitated in groups. Thus, multiple limited perspectives of individuals are elicited and integrated to create a more holistic view. The models are not usually quantified because it is the insights about relationships that count more than any numbers that can be input into a computer. Facilitation skills are crucial in the group sessions.

One classic and widely read critique of the soft systems approach from the critical systems perspective was Jackson’s (1982) path-breaking paper on the work of Churchman, Ackoff and Checkland. Jackson finds that, while soft systems thinking is an advance over hard systems thinking because it recognizes the importance of

subjectivity, it is unable to deal with issues of power and social change... To Jackson, this stems from its neglect of objective social conditions. Oliga (1988, 1989a, b) argues that the soft systems approach has made an ontological break with empiricism but not an epistemological break. Its assumption about the possibility of the practitioner attaining 'objective' knowledge of the worldviews of the actors is problematic. In addition, it neglects the multiple influences of social structural factors and their effect on the formation and maintenance of worldviews.

On the other hand, the later critical-emancipatory and postmodern schools would hold that the soft approach does not go far enough to challenge prevailing power structures or to accept a plurality of views. The nature of 'accommodations' upon which proposals for improvement or change are founded, may be heavily constrained by power relationships. Thus, the methodologies do not allow people to challenge systematically distorted communication, which masks ideological frames of reference and 'false consciousness' (Mingers, 1984; Oliga, 1988; Clarke & Lehaney, 1999).

Before moving on to the third and final wave, it is useful to consider SST from the perspectives adopted in chapter 3. Although SST has brought the issue of subjectivity into focus, it does not go far enough to ensure that strong second-order reflexivity can be generated through its methods; nor is there any sign of recognition and attention to the being-abiding mode of consciousness, or of an evolutionary principle at work. While the steps of SSM can, in the hands of an excellent practitioner, potentially attend to these aspects, it is not an explicit objective of the methodology. (This criticism is in fact, better appreciated once I have explained how these perspectives can inform the theory and practice, which is done in chapters 5 to 9).

4.5.3 The Third Wave – Critical Systems Thinking

With the recognition that the approaches in the SST wave also suffered from limitations, the field needed to be surveyed anew. It began to be recognised that several disparate methodologies were being espoused by their founders as the most useful or (in some cases) the only robust or relevant framework to apply in all cases, leading to a fragmentation of the field because proponents of competing approaches refused to talk with one another (Dando & Bennett, 1981). These phenomena led to what Jackson (1987) termed isolationist and imperialist trends: isolationism is turning

ones back on opponents and imperialism is seeking to subsume their methods without respecting the original methodological logic underpinning them.

A milestone attempt to pull together the many (then) diverse strands of thought and application into a single coherent discipline or framework was the work pursued individually and jointly from the mid-1980s by a group of scholars working at the University of Hull (although some have moved on). This was a period of intense activity – theoretical questioning, applied research, intense debate and controversy, eventually establishing the currently dominant paradigm called Critical Systems Thinking (CST). Among the outcomes here, two separate strands may be recognised. One is the work under the rubric of CST established by Paul Keys, Robert Flood, Mike Jackson, Norma Romm, Gerald Midgley and Wendy Gregory amongst others - a brief sketch of their contributions and references follows (although it should be noted that these authors had different perspectives, and some of them set out to revision CST following a sustained critique of the first writings in this new paradigm). The second strand is the approach called Critical Systems Heuristics from Werner Ulrich (example, 1983, 1987), which is considered later.

The social role of systems thinking, the issue of radical change (rather than merely organisational improvements), and the need for systems methods to provide true emancipatory potential, seized systemists during the 1980s and 1990s. A landmark paper by Jackson & Keys (1984) heralded this move, describing a variety of problem contexts along two dimensions and suggesting there may be contexts that need to be seen as coercive, soon to be followed by an explicit call for an emancipatory approach (Jackson, 1985). A programme for Community OR (the application of operational research to community development) was also set up at Hull to foster emancipatory practice in CST at around this time.

These theoretical and practical research programs first led to the articulation of a taxonomy of extant systems approaches, called the System of Systems Methodologies (Jackson & Keys, 1984; Jackson, 1987). This also served to initiate the idea that since both contexts and facilitation resources were varied, it was necessary to adopt a pluralistic approach, recognising the value of all the different methodologies for dealing with varied dimensions of problem situations. Simultaneously, drawing upon the critical tradition in philosophy and social theory, various new approaches were developed. The group at Hull turned to Habermas (1970, 1974, 1975, 1984), upon

whom Jackson in particular drew strongly, to develop their critical approaches. The initial fruition of this prodigious effort was the assembling of a meta- methodology called Total Systems Intervention (Flood and Jackson, 1991) that was said to satisfy the requirements of a critical approach. This built on the systems of systems methodologies; the use of metaphors (as advocated by Morgan, 1986, 1997); and provided guidelines for using multiple or mixed methods according to the context, in a three stage iterative process of inquiry and action.

The TSI approach caused quite a stir and much heated debate on the vexed issue of paradigm incommensurability - roughly, this refers to the question of how a typology that allows the selection and mixing of methods arising from different paradigms can achieve coherence, given that the original methodologies make incompatible assumptions about the nature of reality and human knowledge. There was also significant debate around several other thorny issues of theory and practice related to the purposes of systemic inquiry, emancipation, researcher roles, and the like. Only some key contributions are mentioned, which are of general and overall relevance to the CST approach. Mingers (1980, 1984, 1989, 1992a, b, 1995, 1997) mainly reviewed the theoretical and philosophical underpinnings for aST. He has recently veered towards critical realism as a suitable philosophy for aST: see Mingers, 2006 and 2014 for this. Mingers & Brocklesby (1996) review the entire debate around methodology and methods to suggest that at least three ways of dealing with incommensurability could be compatible with CST. Mingers & Gill (1997) produced an entire book that examined what they termed 'multimethodology' (another name for methodological pluralism). Oliga (1986, 1988, 1989a, b, 1990) commented on methodology and provided a critical exegesis of the many conceptions of power and ideology that could be a theoretical resource for CST writers. Brocklesby (1994, 1995, 1997) looked at multimethodology and commented on cultural aspects; primarily the difficulty in a competitive academic culture of getting practitioners to accept methodological pluralism and train the next generation in it. Brocklesby & Cummings (1996) and Munro (1997) both examine the idea of emancipation and evaluate possible new theoretical resources for systems thinking. Taket & White (2000) found a lack of guidance on the role of the facilitator; further, from a postmodern perspective, they saw CST as an approach that seeks to tame diversity and pluralism rather than accept it in its full, contradictory glory. Similarly, Gregory (1992, 1996) argues for a discordant pluralism, rather than a monolithic approach based on a metatheory. Tsoukas (1992,

1993a, b) provided an extensive critique of CST to which Jackson (1993) and Midgley (1993) produced rejoinders.

Arguably a key moment in the development of CST was the publication of a book, edited by Flood & Romm (1996b), presenting a series of critiques of early CST and a new vision to build upon. The principal arguments against early CST included its universalization of morality; inadequate conceptualisations of power, inequality and coercion; an untenable approach to paradigm incommensurability; an imperialistic attitude to other systems approaches, subsuming them into a single framework; and marginalizing important theoretical developments, like boundary critique, which are necessary for any penetrating analysis of a problematic situation.

After several years of revisioning (Midgley, 2000, talks about over one hundred people writing papers and giving conference presentations), and a diversity of proposals for new theoretical and practical ways forward, the debate was eventually consolidated by Jackson (2000) and Midgley (2000) into two clearly articulated and opposed positions. Jackson's was a development of his earlier work, and Midgley abandoned the label of CST and instead proposed a methodology of Systemic Intervention, which incorporated boundary critique (to explore boundaries, values and processes of marginalization during intervention, giving rise to deep diagnoses of issues) and methodological pluralism (drawing upon methods from different paradigmatic sources to address those issues). This will be discussed in much more detail later, as it is the point of departure for my own research.

Bowers (2012) has provided an overview of all these debates around multiple paradigms and multimethodology; he has also neatly represented the history of key developments and ideas around these topics in several visual charts (Bowers, 2012, 197 – 203).

Discussion

The churning and debates eventually rest at a point where three broad positions, none entirely satisfactory, have been adopted by the proponents of CST. These versions can be seen as constituting the revisioning and as the second phase of CST. In the course of the later theoretical development of CST, Jackson (2000) identifies broad characteristics (constitutive features) of the various approaches – functional, interpretive, emancipatory, postmodern, and critical; and outlines the five

commitments of CST (1990): critical awareness, social awareness, complementarity at the methodological level, complementarity at the theoretical level, and a dedication to human emancipation. These characteristics, by 2000, were variously described as a commitment to critique or critical awareness (including social), emancipation or improvement, and pluralism (both Flood and Jackson have preferred the term complementarity: this refers to specific ways of deploying multiple perspectives and methodologies / methods in order to achieve a more comprehensive understanding of the situation, and now embraces theory and methods). He goes on, eventually, to offer a revised form of TSI called Creative Holism (Jackson, 2003), which emphasises explicit recognition of the paradigm underlying the method or methodology in use, and proceeds with a dominant paradigm but remaining holistically open to switching, while cautioning against a relapse into pragmatism or “unreflective pluralism” (2000, 384). Flood (1995) and Flood & Romm (1995a, 1995b, 1996a) revised TSI, abandoning the systems of systems methodologies as impractical and suggesting an organisations-as-systems view, adding many elements to make the method more robust and practicable. Mingers, referred to earlier, has shown how a Habermasian and a critical realist orientation can provide supporting theory in the careful use and mixing of methods. Midgley (example, 2000) is happy to combine methods but puts “boundary critique” at the centre – we shall discuss this in much greater length in section §4.6. Essentially, all of these developments have brought the question of multiple perspectives, and a corresponding call for reflexivity and awareness in facilitation, into focus. This issue is central to my discussions in the remaining chapters.

Finally, to conclude this rapid overview of CST, I must mention that Zhu (2006) locates Jackson’s work, squarely, as systemic-modernist. If that were so, then what would constitute a truly holistic approach that reconciles the modernist and postmodernist viewpoints? Zhu also suggests (ibid.) that research on systems methodology is subject to institutionalization processes, and sensitivity to this is critical for its future. Gu & Zhu (2000) report the development of an indigenous Chinese multimethodology comparable to TSM; and, in a later paper, Zhu (2010), establishes that methodology theorization can proceed differently across cultures, and asks for cultural sensitivity to be built into research. All of these are concerns of my research, and while I shall not take up the justification of these aims later, I flag the

issues for the interested reader to evaluate my suggested approach against, at the end of the thesis.

Before we move on to the next discussion, I would like to dwell briefly on five specific contributions, which to my mind merit some elaboration. These relate to the work of Ulrich, Fuenmayor, Mingers, Georgiou and Cabrera - summarised below. The reason for a special focus on these is the fact that they do not strictly fall under the rubric of CST, but are considerably important thrusts contemporaneous with CST.

4.5.4 Werner Ulrich, Critical Systems Heuristics

In 1983, as CST began its early steps, Ulrich (1983, 1988, 1994, 1996a,b) offered a significant and robust treatise called *Critical Systems Heuristics*, considered a landmark in the systems literature, signalling the advent of what Jackson (2000) called a critical-emancipatory methodology. Jackson summarizes why the name was chosen for the method:

“To be critical, one must reflect upon the presuppositions that enter into both the search for knowledge and rational action...Ulrich takes the systems idea in Kant to refer to the totality of the relevant conditions upon which theoretical or practical judgments depend. These include metaphysical, ethical, political, and ideological aspects...Finally, heuristics refers to a process of uncovering objectivist deceptions and of helping planners and concerned participants to unfold problems through critical reflection” (2000, 316).

Ulrich drew inspiration from Churchman’s ideas about the restrictive nature of viewpoints and his approach to social systems design, and was influenced by Kant (1787) and Habermas (example, 1984; Ulrich has drawn extensively on Habermas’s writing) drawing strongly on the latter’s ideas about communicative and dialogic potential, as well on Popper’s (1935, 1963, 1972) writings about the instrumental use of reason. His method, therefore, proposes a critical evaluation of the basis of any plan or design for a social system. This is achieved by asking twelve questions that span its sources of motivation (values), control (power), expertise (knowhow) and legitimation. These questions, in order to put unwilling planners into a position of truly dialoguing with the intended beneficiaries, have to be asked in two modes – how things currently obtain (“is” mode) and how they should preferably be (“ought” mode). As clients and witnesses (those who may not be involved and yet may be affected) ask these

questions of the planners, and a process of the “polemical employment of boundary judgements” is set up. This enables clients and witnesses to be able to assert themselves against the planners, and for the value basis in choices of design based on certain technologies and expertise to be uncovered, and create a basis for those who will be affected to take these choices back into their own hands. CSH placed the issue of boundary judgements and of the role of values centre-stage in all choices and decisions. It also offered a critical and emancipatory methodology to systems thinking.

Some of the criticisms against critical systems heuristics are that it adopts a limited notion of critique (Jackson, 1985 says it critiques ideas but not the material conditions that shape them; Flood & Jackson, 1991a, and Mingers, 1992c, argue that it fails to acknowledge the importance of examining structural inequalities in society that give rise to conflicting viewpoints); it seems to work only in situations where participation or arbitration is possible (Midgley, 1997b); there is no reason why those in power should ever want to listen to the powerless (Ivanov, 1991; Romm, 1995); steps needed to overcome dogmatic intransigence are absent in the method (Willmott, 1989) and that Ulrich objectifies this intransigence (Romm, 1995); and it is limited methodologically (Flood and Jackson, 1991, argue against its lack of pluralism in theory and method). I would say that Ulrich has not sufficiently considered his mentor Churchman’s argument about the enemies of the systems approach (see §4.7.4 and §10.2), in his sweeping embrace of dialogic rationality.

4.6.5 Ramses Fuenmayor, Interpretive Systemology

Considering that there was not a truly interpretive approach to applied systems thinking at the time he was writing, Fuenmayor set about researching this thoroughly to provide a critique of reductionism, and build a new onto-epistemology for applied systems thinking, which he termed Interpretive Systemology (Fuenmayor 1991a,b,c; Fuenmayor & Lopez-Garray, 1991; Fuenmayor et al, 1991), based on the phenomenology of Heidegger (1962). Fuenmayor traces the roots of reductionism to the “principle of noncontradiction” (the intuitively evident nature of axiomatic principles, which do not need any further proof and thus cannot be contradicted) and suggests that the form of essential recursiveness (a unitary situation composed of two sides, each one essentially founded on/giving rise to the other) is its logical antithesis. Next, he considers the notion of a situation, and uncovers the two essential recursions involved in its noetic and the noematic sides (roughly, the subject and the object

aspects). He offers the idea of holistic transcendence as an alternative to the idea of emergent properties. In his words,

“The idea ‘emergent property’ is dogmatically based on the assumption that such wholeness is a result of the interacting of its parts. Hence, such an idea, which apparently is leading ontoepistemological revolution, is trapped in the aprioristic Reductionist assumption that the world (and each object of study) is a priori constituted by an independent (from the observer) set of interconnected parts from which new properties emerge” (Fuenmayor, 1991b, 471).

In contrast, holistic transcendence is rooted in the phenomenon of comprehending situations. To quote again,

“A thing is not a thing-in-itself. A thing is a holistic transcendental phenomenon whose transcendental can be understood in terms of the essential recursive form Distinction. Since the unitary being of the thing is essentially rooted in its scene, it is obvious that the collection of parts cannot explain such unity” (ibid.).

Now, the above quotation cannot be understood unless one has followed the entire thread of his argument and the meanings ascribed by him to each of these terms. However, the form Distinction referred to above involves an intentionality, a sort of “principle of action”, that situates, or ‘presences’ (brings about), the situation. The “thing” – anything that we distinguish in the situation – cannot exist, independent of the background or “scene” from which it has been distinguished. This scene has to be “opened” in a process of deconstruction (or reversal; his term is de-becoming), which is a dynamic, never-ending recursive process. However, the search for relevant aspects of the becoming is an interpretive process of understanding and comprehension. Therefore, the method to do this is by modelling the various contexts of meaning, explicitly interpreting the phenomenon with regard to such contexts, and discussing these interpretations in terms of those contexts.

Interpretive systemology has been criticised for several reasons. According to Mingers (1992b), it is based on phenomenology, which has an idealist view of critique, targeting ideas rather than material conditions, is essentially an individualistic pursuit, and assumes an anti-realist ontology – reality only exists in the coming into being during a person’s interaction with the world; there is no reality of independent things.

Fuenmayor, insists, and I agree, that Mingers is wrong to accuse him of phenomenology because the latter roots ontology in the understanding of the subject, while he recognises the role that the object plays in a recursive relationship with the subject (Midgley, 2015). Midgley (2000) agrees with Fuenmayor that he has overcome naïve subject-object dualism, but the fundamental recursive form still suggests its persistence, albeit in a more sophisticated form. He also finds an inadequate attention to the role of language. Jackson (2000) finds that, in practice, Fuenmayor's method has little to offer as compared to any other interpretive approaches; rather, it is his implicit Marxist perspective on society that provides a synthesis and an action plan to emerge from the multiple perspectives that interpretive systemology asks people to explore.

My own perspective is that it is only the Western rationality, or dialectical imperative, that calls for a unification of the two sides of a recursion. From other perspectives, a recursion is a singular reality. Zhu (2010) makes the same point when he says (albeit in a somewhat different, yet related, context of synthesis of systems methods across cultures):

“But is Hegelian dialectic universally meaningful (Nisbett, 2003)? Is it compatible with Far-east dialectic that conceives ‘yin and yang never melt down into a synthesis, the lost [sic] of opposites means death’ (Zhu, 2006)?”

I suggest that the essential recursions traced by Fuenmayor do get to the core of the matter. To put it less subtly, *the critical element of a recursion is not the dualism but the nature of the yoking of the two sides*. Taking, for example, intentionality and distinction – these are not objective or material *content* but are *processes*. Thus, the linkage, I would think, implies that one process automatically causes the other to arise. *Therefore, a recursive model points not to split aspects of reality, but to the inherent centrality of the creation and resolution of paradoxes as the evolutionary process of sentience*. However complex the regress of recursions and the network of ideas are, there is no reason for them not to practically function in alignment – it is in their nature to do so, just as the regress of hierarchies in physical organization from quarks to organisms and species function. Neither depend on our conscious rational grasping and ordering to be able to function! In fact, the coherence and collimation of comprehension and understanding, of energies and of skills that is achieved in cultural practices (such as rituals, theatre, yoga, or when practical skills like sports are honed), go far beyond rational comprehension and knowledge. I have routinely seen far too

many ‘mystic’ processes in my theatre based inquiry work and in yoga practitioners, which I describe in §§ 6.2 and 8.5.1.

Another key contribution from Fuenmayor that has been overlooked is his observation about what is ‘critical thinking’:

“Critical thinking seeks to unconceal the ways in which *being-previous* (*a priori* conditions in Kantian jargon) prevails upon presencing. Since being-previous is the ground from which presence is disclosed, it gives both its possibility and its impossibility to freedom.

On the other hand, pure *otherness*, understood as a threat against *intentionality*, represents the alien, the ‘outside’ forces which oppress *intentionality* in its thrust. These are the so-called (within realism) ‘oppressing material’ conditions.

As already argued, without *being-previous* and/or without *otherness* *intentionality* could not *be-being*. However, the horizontal notions of pure *being-previous* and pure *otherness* which ground the *be-being* character of *being-previous* and *otherness* represent the negative power against *intentionality*. This means that both *being-previous* and *otherness* make possible and restrict *intentionality*. In turn, as already stated, *intentionality* is the positive power against that negative power. Both the source of such positive power and what is gained in its strife is freedom. This essential recursive unity of positive and negative power is *power* in its ontological root” (1992b, 459-460, italics in original).

Fuenmayor has evolved a special language (italicised in his text above) for his ontoepistemology and, as I stated before, a quotation cannot be understood unless one has followed the entire thread of his argument and the meanings ascribed by him to each of these terms. However, I will state what I infer here: that *intentionality* (see §3.5) is pulled both forwards by the ‘other’ and restrained by the ‘earlier’: this is the nature of power and the source of oppression. In focusing only on the relationship of the self to the other, Western thinking is only interrogating one-half of the source of oppression. If we really need to think critically, we need equally to interrogate the other half – the ‘earlier’, which corresponds to the subjective aspect in Midgley’s theory of boundary critique (see §4.6) and the preferred schema in the Anticipatory

Present Moment (see §5.2.6). This is a key aspect of my own critique against CST, developed further in §4.7.

In terms of the basic perspectives I am adopting to evaluate systems thinking (see chapter 1), Fuenmayor implicitly allows for ways of knowing other than the rational-analytic (see §9.2), but this is not made explicit. *However, one major aspect that Fuenmayor has missed is the universe of being-abiding; his entire exposition of the epistemology of recursions arising from intentionality concerns itself only with that half of consciousness, which is the universe of becoming-striving. There is no recognition in his work at any point that consciousness also operates from a mode of non-intentionality: that of being-abiding.*

Midgley's (2000) criticism concerning the role of language is valid, but I think it is even more important to pursue an understanding of the extent of knowing that is possible even before language, and that is explored in chapters 6 to 9.

4.5.6 John Mingers, Systems Thinking and Critical Realism

With a sustained record of contributing significantly over three and a half decades to the theoretical development of systems thinking (see discussions at §4.3.2 and §4.6, esp. 4.6.3), Mingers (2000, 2006, 2014) has eventually settled on the philosophy of critical realism as a suitable one that, in his words, “lays out this [the] path from knowledge to action and makes clear the interactions and connections between these varied fields” (2006, 4). A good summary of his development of a concordance between critical realism and OR/MS and systems thinking can be found in his 2000 work. Mingers describes the major divisive issues within the philosophy of science, looks at the arguments about locating the practice of OR/MS and systems between natural and social sciences or as a technology; and then shows how the key tenets of critical realism successfully addresses these unsolved problems. By discussing systems dynamics, statistical modelling and SSM in the frame of critical realism, he is able to demonstrate its potential to provide an underpinning framework for systems thinking.

Although some other systemists have been quick to dismiss this suggestion of critical realism as a foundational philosophy for systems thinking (see Jackson, 2006; he calls Mingers a “critical realist imperialist”), I believe there is much to be said for this attempt at theoretical integration. Critical realism provides a useful basis for a philosophy of science, through postulating a realist ontological domain (of actual

events that are independent of our perceptions of them) whilst accepting the relativism of socially conditioned knowledge in the epistemological domain. However, its retroductive methodology that explains events by hypothesizing causal mechanisms (Bhaskar, 1986; Mingers, 2000), does not detail *the actual mechanisms of knowing* from events and for formulating hypotheses for improved understanding (– the *workings* of what in his language is the transitive domain in which we perceive events that become observable empirical experiences), as the models developed later in this thesis seek to do, and thus remains epistemologically inadequate.

4.5.7 Ion Georgiou; systemic epistemology

Georgiou (2007) has produced an erudite and well deliberated philosophical exegesis and treatise on what could be the foundational articulation of the epistemology underlying systemic thinking, which fits in with a commonsense belief among systemists that systems thinking is actually another way altogether of perceiving and relating to the world, which could be epistemologically justified (Jackson, 2000, 18). This is thus more significant than Fuenmayor's work, since it embraces the roots of all systemic thinking, and is not concerned only with an interpretive approach to systems thinking. However, *his entire inquiry is predicated on the intending-intuiting origins of conscious activity* (or equivalently in a systems language, bounding-judging, see discussion on intentionality in §3.5), which results in a recursive loop of activity of judgement / justification / choice leading to the discovery of the 'infinite receding of objective knowledge'. (This is a condensation of his entire work in a sentence; see 2007, page 174, for his own one-page summary and diagrammatic representation. It is also not unlike Fuenmayor's findings). *Thus, this effort confines its exploration to the universe of becoming-striving and does not venture into the universe of being-abiding, since there is no recognition of the non-intentional, being-abiding mode of consciousness.* (This is identical to my observation about Fuenmayor's work, see §§ 3.5, 7.2.4, 8.5.1, 8.7).

4.5.8 Derek Cabrera: The DSRP framework

One of the greatest challenges facing systems thinking is the fact that it has become an esoteric discipline with many specialised areas and methods, each with its own arcane language; quite inaccessible to the layperson. In a pioneering and original development of some significance, Cabrera (see Cabrera et al, 2008; Cabrera & Cabrera, 2015;

Cabrera, et al, 2015) has distilled down the essence of systemic ideas to four key concepts – distinctions, systems, relationships and perspectives (thus DSRP in short). He argues that these four ideas underlie all systems thinking, and like the early cause-effect diagrams making systems ideas highly accessible to many (example, Senge, 1990), this is accompanied by a simple method of diagramming that is also supported by a software and a range of resources for learning and application. This is highly welcome and only time will tell how far this will resolve systems thinking's esoteric status; however, in terms of my core perspectives for evaluating systems thinking (chapter 1), this approach fails to integrate the four ways of knowing, the evolutionary principle, and the universe of being-abiding. Therefore, while achieving some ontological sophistication, it remains inadequate to the ontology of being-abiding; and achieves no epistemological sophistication. It is, therefore, to be seen in the light of the sort of dangers I warn about in §4.7.1 and §4.7.2.

A few other attempts to provide a cohesive overall framework for applied systems thinking can be noted in the literature; for example, Gharajedaghi (2006) and Boardman et al (2009). However, these do not show the same signs of up-take as the ideas already reviewed, so will not be further discussed here.

We are now in a position to turn to a detailed discussion of one of the key contributions to the revisioned second wave CST: Midgley's (example, 2000) Systemic Intervention. But just one observation before we do so. Jackson (1990) has shown that two specific methodologies, from the HST and SST eras respectively, namely, VSM and SSM, both contain a critical kernel – the possibility of contributing to a critical understanding of a situation. I agree with this position completely, and would suggest one requirement that may operate amongst determinants for such a possibility to be realised. This is the availability, among the key facilitators or actors in a situation, of knowing from Tier 2 consciousness, the idea from EUM (see §3.4). The fact that latent and contingent possibilities depend on systems or constellations that occupy, not one position, but possess a range of identities between them (easier to imagine as a continuum between a leading and a trailing edge), and that the dynamic interplay which engages these tendencies is amenable to reflexive engagement by Tier 2 consciousness, needs to be borne in mind, while considering what could unfold in a situation. The discussions about orientations to systems thinking in this preceding brief

historical narrative and the implications for practice, bracketed within the evolutionary and other key perspectives, are taken up after examining Midgley's work.

4.6 The Theory of the Boundary Critique – Gerald Midgley

In particular, Midgley's work in totality, but especially the cohesive arguments in his book (2000), read along with some key later works (especially 2011) have transcended many of the earlier theoretical problems, and I would go so far as to argue it represents a distinct new wave within CST. He has successfully argued that boundary critique is central to a systemic intervention (which includes normal scientific activity or first order science), and describes this in process terms. To recap briefly: the process of gaining knowledge about the world involves the making of boundary judgements about what to include in the purview of observation and inference; similarly, the process of deciding who or what is or should be creating this knowledge (in his term, a 'Knowledge Generating System') is equally based on an identical set of boundary judgements (he calls these second-order judgements).

“It is possible to make a variety of boundary judgements when looking ‘outward’ towards the world, and a variety of judgements when looking ‘back’ at the knowledge generating system which produces these ‘outward’ judgements. Borrowing from the language of cybernetics (example, von Foerster, 1984), I will call a boundary drawn when looking ‘outward’ a *first-order* distinction. In contrast, I will use the term *second-order* to denote the distinction of the identity of a knowledge generating system which is instrumental in making a first-order distinction” (2000, 80).

Midgley argues that both these sets of judgements involve identical processes, whatever be the content of their outcomes.

“All knowledge is dependent on boundary judgments, whether these are implicit or explicit (Churchman 1970; Ulrich 1983). If we recognize this, then both knowledge generating systems and the world itself come to be defined in exactly the same manner: through the process of making boundary judgments” (2011, 5).

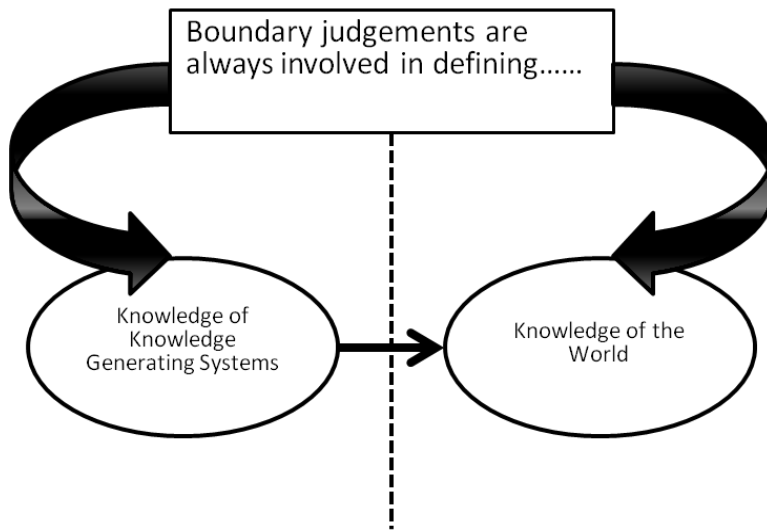


Figure 4.1 Systemic Approach to Epistemology (from Midgley, 2011, page 6)

Next, Midgley goes on to show how critical it is for both theoretical and methodological pluralism to be adopted to be able to achieve this second-order reflection on the boundary judgements associated with our intervention (2000, chapters 8 and 9, 59-216). Finally, as a third requisite, he sees a concern with ‘action for improvement’ as essential to the intervention being systemic (2000, 130).

Let us take each of these in turn.

The analytical primacy of the process of making boundary judgements over the contents of the theories and methods involved appears at first to have solved fundamental problems bedevilling the philosophical conundrum of matching the response to the complexity of the task. If you adopt one particular sole philosophy and attendant methods, you are likely to miss certain other perspectives and not grasp the whole situation; yet, adopting multiple approaches can be prone to inconsistency and incommensurability of the principles and ideas involved.

“*Analytical* primacy is not the same as *ontological* primacy. Something is analytically prime if it is advisable to look at it first, but this does not necessarily mean that it has a more fundamental reality” (2000, 78).

Midgley surmounts the problem of matching the complexity of the situation by accepting that all theories are partial and all methods fallible – so, the way to apply

several of them is by a creative design of methods (1990; 2000, 225 - 236). On the issue of paradigms, he has consistently held the position that it is not possible to evolve a new paradigm to subsume or mix methodologies; any metaparadigm sits at the same level as the paradigms underlying the methodologies, so, at best, this mixing may represent an attempt to formulate a new paradigm. However, he is also sceptical of transcending paradigmatic thinking, so he adopts a nuanced approach:

“...It is because I do not believe that paradigmatic thinking can be transcended that I stress the mixing of methods, not methodologies. ... We can learn from other methodologies to aid the on-going construction of our own, and we can detach methods from their original methodological principles in order to use them in new ways (seen through the eyes of our own methodology). This is now a widely accepted way of thinking about methodological pluralism in both the CST and operational research communities... Clearly, this argument addresses the paradigm problem: there is no need to claim that we are operating across paradigms—we just have to acknowledge that we are setting a new position which encourages learning about ideas from other paradigms, but reinterpreted in our own terms” (2000, 248).

He further states:

“This involves understanding the situation in which an agent wishes to intervene in terms of a series of systemically interrelated questions, expressing the agent’s purposes for intervention. Each purpose might need to be addressed using a different method, or part of a method. The purposes are not necessarily determined as a complete set in advance, but may evolve as events unfold and understandings of the situation develop. In this sense, it is important to acknowledge that interventions take place *over time*, and that different purposes may emerge at different moments of Inquiry, requiring the use of different methods (2000, 226; also see 1992b for more detailed arguments on this point).

The outcome of the various moments or incidents of inquiry are judiciously reviewed (using further iterative boundary inquiry – asking “What has been missed out by our choices here?”) and this will help to forge the path towards improvement. What becomes necessary to acknowledge then, is that the value of all theories, methods and

skills in practice are realized in their applicability to the moment and in the given context (2000, 166-8).

I review this approach in §4.7.1 below, after locating this in the context of a broader examination.

4.7 Critique of systems thinking using systemic intervention as a case in point

The fact that newer critical discoveries at the frontiers of sciences like physics and chemistry (Prigogine & Stengers, 1984; Capra, 1996; Laszlo, 2007) indicate a vastly different ontology from the early theorisations about systems (in the 50s and 60s), suggests that we need to trace and evaluate whether systems thinking has developed an adequate epistemology, and methods, that flow from this new ontology. In later chapters, this report attempts to extend the trajectory of systemic epistemology, and point to the variety of methods in use in various contexts of intervention for development (drawn from American, British, European and Indian examples) that correspond to such an extended epistemology. *My attempt is to show that adoption of an extended epistemology and new methods are fundamentally important to characterize an intervention as genuinely capable of productive systemic change and improvement.* In this way, I establish that it is important to give equal importance to the mode of consciousness that modern western science has forgotten – the universe of being-abiding, which enables knowing of a sort that overcomes some of the dilemmas of rationalism.

Towards this, an interrogation and identification of some key ideas underlying the present state of applied systems thinking will be followed by a discussion of questions towards further development of the field. I will then introduce concepts and models from other disciplines that could fruitfully assist the exploration of these questions. I will therefore begin with a short critique of Midgley, treating this as a case in point, from which the argument can be expanded and seen to hold for most of applied systems thinking.

4.7.1 What is missing?

In Midgley's theory, there is insufficient explanation of *the process of judgement around boundaries* – be they of the first or second order. Midgley applies the abstraction of 'a knowledge-generating system' to the entity that makes the

intervention, but acknowledges that this refers to one or more human beings (including those who might stand in to represent interests such as future generations or the ecosystem, or elements thereof, whenever such concerns need to be ‘swept in’). (2000, 113-5).

My argument is that a theory of how an individual human being, or a group, makes a ‘judgement’, in short, arrives at any knowledge, is central to the practical application of this method of systemic intervention. Midgley pre-empts this question by saying that he cannot privilege any one theory, as that will then become a foundational paradigm (Flood, 1990) and defeat his purpose, which is to provide a unifying basis without creating a grand theory of everything that will then truncate theoretical pluralism (see 2000, 82; also, 2011). This position is understandable, as his thinking has evolved in the period when totalizing theories in sociology were torn to shreds. Moreover, he himself (and others at the Centre for Systems Studies in Hull) played a key role in the rescue of systems thinking from isolationist approaches through his critical conceptual work.

Fair enough, no foundational paradigm. Also, Midgley describes, at several points, a variety of theories about the nature of the world, about the cognitive processes involved, and so on, to argue their utility and limitations (example, 2000, chapters 3 and 4; also 2011). Moreover, he provides case studies from practice that instance the creative mixing of methods (example, 2000). Thus, he remains consistent with his own argument that a variety of theories can be picked and chosen for their value in informing a specific context of intervention.

What then, is my quarrel? Let me first draw a very fine point of distinction (that explains a difference that might make a difference) to strengthen Midgley’s thinking. To belabour a point made earlier, Midgley strongly holds the view that a foundational epistemology that privileges one theory about the nature of knowledge can be stultifying, which I completely agree with. However, what can nevertheless be examined is the *process of knowing* (about knowing – about the knowledge generating system or the subject) not the *content of that knowing* (the theory, the knowledge). Such an analysis corresponds to the operation of re-entry in second-order science (§3.1), since I am applying a distinction he has made back on to his own theory. This will be built upon in chapter 6.

The danger of not doing so is the problem I find with Midgley’s method as it currently obtains. As far as I can see, there is *a clear and definitive privileging of one type of judgement over others*, involved consistently throughout Midgley’s work (see next section). This reduces the potency of his critical contribution, and, in effect, defeats his intention not to rest his conceptual work on a single paradigm of knowing. To understand this, we need to step back and look at the process involved when human beings (as individuals or in groups) ‘make boundary judgements’.

4.7.2 Rationality and rationalism

To Midgley, the value of any knowing or ‘thinking’ arises *only* from the moment it is formed into rational language and entered into discourse. This is because a mystical process (say, intuitive understanding), when not explicated, is of no use to discourse. Midgley explains this, starting with Interpreting into systems language Heraclitus’s description of the *Logos* -

“...the term *Logos* can be said to refer to the ultimate reality of interrelation and change that binds absolutely everything together into a dynamic, unfolding process. When we see and think, Heraclitus felt, we can be aware of only a tiny part of the picture, and the image we have of reality is distorted by our static classifications and the bounded nature of our vision.

The *Logos*, then, escapes adequate description. Consequently it also escapes any possibility of total rational justification. The everyday interconnectedness we have empirical knowledge of is not the ultimate interconnectedness of reality. As far as our everyday thinking goes, the *Logos* cannot be known; it can only represent an ideal that reminds us that no boundary is absolute” (1992b, 154-155).

In fact, this is a refrain in his writings, that all knowledge is partial and can never capture the totality. However, since rational justification and discourse seem to be the only way to develop action for improvement, he builds the following nuanced argument:

“If the *Logos* escapes description, it might seem that the only adequate vision of ontology is one which dispenses with language and thought in the exploration of reality. Indeed, this is what some people writing from a spiritual tradition (example McBurney, 1990) have claimed.

However, I would have to argue that ontology is, most basically, concerned with *discourses* about reality. It is not about “experiencing” reality through spiritual enlightenment. This is not to say that such experiences are invalid — just that ontology consists of *statements and arguments* about reality. Even the writings of spiritual visionaries such as Krishnamurti (1991), beautiful though they are, are essentially discursive: they *guide* one down a spiritual path.

...It seems that an adequate ontology will inevitably be based in language. It will be a series of *statements* about reality, crystalizing elements that, in some sense, will appear to be useful in helping us to understand where we are. “Usefulness” can, of course, be judged only in terms of other discourses...” (ibid. 155, emphases in original).

In the same fashion that Midgley does not reject spirituality, he also takes note of the role feelings and emotions (example, 2000: 106, 226, 245; and in his discussions of Maturana and Varela’s theories), as well as intuition (example, 2000: 228, 236) in our efforts at knowing. He accords a definite role to intuition in practice, which may sometimes retrospectively be reported as if it was reasoned at the point of action during the practice, and exhorts attentiveness to and acknowledgement of the problems associated with this. He also reflects that much of the choice and decision-making in situations actually becomes intuitive after long practice. However, in the main, this is a token recognition of a part of reality that is simply to be acknowledged, for it is for individuals (or knowledge generating systems) to work with on any basis they choose. (Having recognised the role of these aspects, I do wish he had explored them further).

It might appear that Midgley speaks about embracing all philosophies and all forms of rationality –

“...Knowledge is not necessarily the property of academic discourse or the subject of erudite books: it may be seen as the fleeting perceptions of a sentient being (whether human or non-human); the theory-in-use of an organisation; the ideology of a political group; or a scientific theory. All are forms of knowledge which may be explained with reference to many possible knowledge generating systems” (2000, 81; also see chapter 8 therein).

However, this is clearly vitiated in practice by staying within the scheme of things relating to the fundamentals of method and practice that Midgley, CST, and the greater body of work in applied systems thinking, essentially espouse: to wit, rational discourse and dialogue. Before launching into this exposition in detail, let me state two problems that arise from this foundational assumption of systems thinking. I say applied systems thinking, since we are treating Midgley's approach as a limit case that speaks for most of the applied systems thinking. The first wave, HST, embraced positivism, and is inadequate. In §4.5.2, I showed that although the second wave (SST) brought the issue of subjectivity into focus, it does not encompass strong second-order reflexivity in its methods; nor recognize the being-abiding mode of consciousness. CST, and the other significant approaches outside CST (§s 4.5.4 to 4.5.8) are all located in conscious rationality originating in intentionality, and thus exclude the nonintentional mode of being-abiding entirely. Besides this, several approaches (Mingers, §4.5.6; Cabrera, §4.5.8) are epistemologically inadequate, without an explicit attention to mechanisms and ways of knowing. I shall progressively build on this argument.

It is important to understand how carefully Midgley has to choose the ground on which he builds his theoretical edifice, so that it is rationally consistent. *This, I believe, stems from the absence, largely, within modern Western thinking, of an ability to conceive of ways of knowing (other than rational) that can be held in and owned amongst individuals and shared amongst groups and social systems, which provide another basis to act upon. Any shared understanding or basis for action, to the strand of thinking now dominating the Western mind, has to rest on language, discourse and rational dialogue.*

4.7.3 Limiting assumption

To summarise once again: for Midgley, the value of any knowing or 'thinking' arises only from the moment it is formed into rational language and entered into discourse. This is because a mystical process (say, intuitive understanding), when not explicated, is of no use to discourse.

This assumption is a clear throwback to ideas of 'modernity' and 'science' that are consistent with the rationality of First-order science. Thus, although Midgley's work overall does place CST into weak second-order science (and it has been the trajectory

of the entire CST effort to take systems thinking into the realm of second-order science), this aspect of his work reveals how the ghosts of first-order science continue to plague us. Taking systems thinking into weak second-order science is in itself a major contribution of CST.

However, the basis for a strong second-order science (see §3.3) is not at all established, and this now begs to be remedied. This privilege in CST of rationality and language is a hangover from first-order science that has not been sufficiently examined, at least with respect to the idea of systemic or holistic knowing. This becomes a valuable area of exploration and this thesis seeks to initiate the dialogue on it.

The examination of Midgley’s assumption and its limitations require, at the very least, a discussion of rationalism in relation to other philosophies, and an examination of cognition leading to a possible ontology of the knowing process (how there can be an ‘ontology of knowing’ separate from an ‘epistemology’ is explained in the introduction to chapter 5). Further, these ideas need to be linked to ideas about possible alternative and expanded views of the phenomenon of knowing, that tie in with contemporary findings from theory and practice in other disciplines. Examining the logic of the practices obtaining in other disciplines can help us understand where method and practice can complement the expansion of theory for systems thinking. This will be undertaken in chapter 6, where I will establish that other forms of rationality can definitely be ‘swept in’ to the ‘creative mix’ without jeopardy, consistent with the philosophy of Systemic Intervention, so that it is freed from the limitation of being aberrantly tied to one single form of rationality.

4.7.4 Two problems

One clear weakness in theory arises from the lack of internal consistency between espoused principles and suggested practice that I have analysed in Midgley’s approach in the preceding section. Apart from this, there are other ramifications for practice - some obvious and others not so. An obvious one relates to the fact that these approaches fail altogether in a situation that precludes any possibility of dialogue – for example, where brutal social oppression based on power is maintained. Indeed, the literature on CST often refers to this issue. For example:

“Coercive situations are usually characterised by closure of debate. Either those with power simply refuse to talk to other people, they use their power to subdue or get rid of people who challenge them, or they have “reasons” why everything that is being said during debate misses the point. As Willmott (1989), Ivanov (1991), and Romm (1995a) have all observed, in any of these circumstances the use of CSH to guide debate becomes redundant.

However, there is also a deeper problem. Even when there is a willingness to engage in debate, coercion of a kind may still be introduced into a situation by the use of CSH itself. Some people find it very difficult to engage effectively in the kind of rational argumentation that is central to the practice of CSH” (Midgley, 1997a, 46).

Midgley’s criticism of CSH would apply equally to SI, or any applied systems thinking approaches premised on dialogic rationality.

The second problem, linked to the first, is the idea that what we need in order to solve the problems we have created by the existing thinking is simply better thinking: the assumption is that, if the thinking is systemic, and takes into account all the interlinked problems we have uncovered so far (such as impact on gender, ecology, the poor, future sustainability, etc.), and if we could get people to cooperate and apply these systemic solutions, we should be able to lick the ‘problems’ (any systems term can be substituted: ‘wicked problems’, ‘messes’, ‘problematique’, ‘system of interest’ or ‘situation calling for action towards improvement’).

Of course, this is probably not claimed so crudely on behalf of applied systems thinking in so many words. However, there is hardly an admission by systems thinkers that some problems may not be solvable. Every systems conference has case studies presented of how new angles to the conundrums of peace, ecology, poverty and hunger, of governance and the like, have now been comprehensively diagnosed in some situation by a newer application of systems thinking; so that all that is required is summoning the will or mobilising for this new approach to be universally applied. I fundamentally disagree with the likelihood of such a possibility that all our major problems will be solved, even if systems thinking is made universally applicable by a United Nations decree.

The thinking underlying this, indeed, is the continuation of the myth of human transcendence over nature associated with first order science rationality. Midgley, in fact, has a problem with the Flood and Jackson variety of CST (the first phase), because it rests on Habermas's (1972) theory of knowledge-constitutive interests:

“It is also possible to identify a significant problem with Habermas's (1972) theory of knowledge-constitutive interests. By suggesting that human beings have an interest in “predicting and controlling” the natural and social worlds, Habermas risks perpetuating the myth of the human domination of nature. This myth leads people to regard natural phenomena as “resources” for control and consumption, with often unpredictable side effects. As a number of authors have pointed out, many of our current ecological problems stem from this myth. It would be preferable to talk in terms of human beings having an interest in building and preserving a sustainable, interactive relationship with their nonhuman environment (see also Eckersley, 1992)” (Midgley, 1996, 15).

Here, the myth takes the form that rational analysis (of the systemic variety, of course) will help ‘control’ and ‘solve’ the problem. Of course, we have elegantly substituted words like ‘improve’ the ‘situation’ to pretend that we in systems thinking have overcome this myth about management of the larger sphere of nature. Now, I do not disbelieve in the possibility of worthwhile improvement on several varied counts; I see it as a distinct possibility that I am cautiously optimistic about. However, it is my firm belief that this will only come from transcending first-order science rationality, and tapping into human capacities for knowing that transcend rational knowing: meta-rational. I wish to be deliberately provocative here and emphasize the smallness of the rational approach. Because rationality has the status of a theology, a First Commandment, in much of the modern West, any other disguised way of saying meta-rational, such as ‘non-rational’ or ‘other ways’, tends to be automatically classified by the reader as a plea to pay attention to and include another ‘lesser’ aspect. Therefore, rationality has to be emphatically bracketed and deliberately placed in the minor context.

Some tantalising peeks at how knowing beyond the rational can be accessed were afforded in my own life story narrated in chapter 2, and a complete exposition of this will be built in later ones.

Meanwhile, a short explanation. Underlying this blind spot is a specific algebra, the algebra of infinite human (systemic!) reasoning capacity, which can compute all complexity into nested hierarchies, feedback loops, value preferences and multifarious other systems thinking representations; which will then provide a basis to arrive at a reasonably accommodated agreement about how to produce improvement. The geometry of race, nationality, ethnicity, and/ or gender relationships; the trigonometry of State power and realpolitik; the calculus of greed – all of these, then, would step aside and pay homage to sheer algebraic mastery, in such fervent if naïve mathematics.

We know this is not so – the powerful extent of such factors (say, greed, hatred or realpolitik) often cannot be conquered by reason. This is precisely why dialogue cannot obtain in many situations, even if the situations are clearly unacceptable to the human majority. This blind spot confuses, or rather, substitutes cleverness for wisdom, clothing in a new sophistication of language the very blight of the modernity and Enlightenment project, rationalism; the consequences are by now familiar to all. In my use of this term, I refer to the implication that intelligibility (or the basis for understanding), rests solely on explanations based in logic and communicated through language. In effect, systemic thinking has become limited to rationalism. We could even call this affliction ‘systemism’, similar to Scientism. In fact, this belief in the infinite divine power of human reasoning is the fallout of the politics of imperialism and colonization that the first order science project was birthed within, and much of Western thinking is still enslaved to sophisticated versions of neo-colonialism and neo-imperialism, structurally embedded in the institutional systems of academia and publishing (Smith, 1999).

Both the problems (first, lack of internal consistency between espoused principles and suggested practice, and second, systemism – the ghost of rationalism) are vast, with several threads of meaning and several ramifications; the argument is resumed in chapter 6. Before getting there, we need to build a compassionate ground for considering them comprehensively. Indeed, I expect many readers to be highly uncomfortable with my arguments at this point; possibly taken aback by such an assault on the substantiveness and sufficiency of systems thinking. My request is that you abide through the full argument before choosing a position in this regard. Apart from the two problems, mentioned here simply to kick-start an argument, there are further limitations of current systems thinking to be examined, which are considered

in chapter 5.

Elsewhere, I have argued that the theory of boundary critique fits the boundary judgement process for the object, but does not provide adequate detail to explain how the exploration of the boundaries of the subject is to be undertaken (Rajagopalan and Midgley, 2015). In that article, we quoted Bateson and Churchman to show that both have argued for a method that transcends mere rationality, which, in Bateson's terms, is necessarily pathogenic and destructive of life. I suggest that the capacity for critical reflection on the boundaries of knowledge generating systems (knowing subjects) can be greatly enhanced through extended ways of knowing. This argument is taken up in succeeding chapters.

Although I have built a nuanced argument to show certain areas in which the theory of boundary critique may need further development, it has overall been welcomed as a valuable contribution to the development of CST. Most of the subsequent literature (example, Cilliers, 2005; Cabrera, 2006; Foote et al, 2007) have largely corroborated its utility to expand understanding in specific ways in various case study contexts. Yolles (2001) has suggested extending the framework into a concept of viable boundary critique. Hodgson & Midgley (2015) have extended the application to foresight and futures planning.

4.7.5 Illustrative Examples

Meanwhile, it might be easier to appreciate the discussed weakness in the practice of systems thinking by shifting our focus to real life situations. Let us consider three scenarios. In the first scenario, a set of villagers are in revolt against long entrenched corruption in the Water Board, which has cumulatively led up to a seriously problematic situation. There is a need to create some rapprochement and amend the highly compromised institutional system to bring in some responsivity and responsibility. In the second scenario, a terrorist leads a team that has hijacked an airplane in mid-flight, with 350 passengers on-board. He has strapped himself all over with explosives, his two accomplices are similarly 'charged', and several caches of explosives are distributed over the plane. You are in charge of negotiating with him over a phone line, and have perhaps a maximum of 20 minutes to save these lives. In the third scenario, a 90-year old woman has lost all 23 members of three generations of her family in a tsunami. In deep shock, she has refused to do anything whatsoever. She

has only been sitting on a rock, looking at the ruins of her house, refusing food and water for three days.

All systems thinkers (I expect) will instantly recognise a situation worthy of their approach to improvement in the first scenario; some will concede that the latter two also ought to be amenable to improvement through application of their august discipline. However, I am rather less certain about the assurance that can be made about the discipline's ability to respond to these situations with anything nearing, say, 50% confidence about an improved outcome.

These three scenarios are chosen at random, but from situations of some acquaintance. The first is a scenario in India, where a tremendous change of heart among the Water Board officials was accomplished through a documented intervention (Suresh, 2011), leading to requests for similar interventions from several other government departments. The second scenario is the focus of Misino, an expert tasked with training special commandos in the Central Intelligence Agency and the National Security Agency of the US, in extreme negotiation; he argues there is only one form of negotiation that can be successfully deployed in such circumstances (see Coutu & Misino, 2002). The third scenario is a real case from Nagapattinam, where the 2004 Indian Ocean tsunami struck, and was personally narrated to me by Suraag Lambrou, who was part of the trauma services team (Parker et al., 2008). Here, a form of intervention led to the elderly person recovering sufficiently to immediately take up the task of rebuilding her home, after she received nourishment and familiarisation with the relief resources available. These intervention methods have something in common that is missing from contemporary systems thinking, and this argument will be progressively unfolded from chapter 5.

4.8 Conclusion

It can be said that CST has stood the test of time, weathering early criticism and developing some sophistication in its later forms. These provide a unifying (but not monolithic) approach that does reasonable justice to providing the requisite variety to match the complexity of real life situations. However, although a basic theoretical consolidation has been achieved, some gaps remain that appear to be insurmountable when pitted against some of the major challenges of our times, such as the continuation of wars, poverty, hunger and the ecological crisis. In this sense, applied

systems thinking as a whole has still failed the early promise of providing a cohesive scientific response to complex problems. It becomes necessary to interrogate these gaps, recover a sense of the underlying philosophical requirements, and address whether ways to improve our methodological repertoire can be found, so that the promise of applied Systems thinking can be realized in fuller measure.

I will establish in the next chapter that there are at least four contemporary domains of practice within the ‘modern’ *zeitgeist*, which answer to the problems I have raised here. These are drawn from four major world regions and cultures for the reason that they have all demonstrated a maturing of method (and theory, in two cases) and evidence documented results. This set includes the methods applied in the three preceding examples. What would an analysis of methods that work from other domains offer to systems thinking?

In beginning my argument in the next chapter, I first present some new ideas about ontology corresponding to recent systemic findings about the nature of reality. The methods in these four domains can be shown to correspond to the new ontology. Following that, an epistemology commensurate with this ontology, which is able to explain the highlighted methods, and therefore can inform an adequate practice in systems thinking, is assembled. Thus, the gap in systems thinking relating to the means to acquire significant knowings relevant to a situation of inquiry, which overcomes the limitation of operating from a singular rationality, is addressed satisfactorily. It may be noted that these methods correspond to the wisdom and approaches that have always been applied by humankind over the centuries, and have now been rediscovered and redeployed in recent sociological practice, with the corresponding development of supporting theory.

CHAPTER FIVE

An Ontology for Systemic Knowing

Systems thinking has spawned a vast number of ideas and there is no cohesive distillation that reduces it to a core set of axioms like the laws of motion in physics (although some attempts have been made, none have really found wide acceptance – see Fuenmayor, 1991a,b,c; Georgiou, 2007; Cabrera et al, 2008; Gharajedaghi, 2011). As a start point for our exploration, therefore, I shall review three fundamental and interlinked ideas about the systemic nature of the world, and relate them to Midgley’s conceptual treatment of these aspects in systemic intervention. This comparative evaluation surfaces some difficulties that remain in the application of systems thinking (I shall hereafter refer to applied systems thinking using the generic label ‘systems thinking’) for dealing with our current systemic understanding of reality. To address these difficulties, I first make suggestions about characterising this systemic knowledge in terms of an ontology for systemic inquiry (that is, for the purposes of our inquiry into an effective systemic approach) in this chapter. Ideas about an epistemology and methods corresponding to the new ontology are considered in chapters 6, 7, and 8 respectively, and finally the implications for systems thinking and possible further steps are outlined in chapter 9.

In the next three sections, we will consider the utility of defining an ontology for *systemic knowing* as being composed of an *ontology of being*, an *ontology of cognizing*, an *ontology of doing* and an *ontology of learning*. Systems thinking corresponds simply to learning for the most part; while systemic intervention involves the latter three but clearly excludes the ontology of being. The relationships between these four forms and the difference between systemic knowing and intervention is spelt out at the end of this section.

At first glance, theories about knowing and learning might appear to belong to epistemology. As I explain in detail in Section 5.2.6, I am using *ontology of knowing* to refer to a model or theory of the *content* of knowing – *what it might be about*. I am using *epistemology of knowing* to refer to the *process* of knowing – *how it operates*.

5.1 The fundamental interconnectedness of things

One key idea that arises from recent findings about the nature of the world is that of the fundamental unity and interconnectedness of everything: each thing being connected directly or indirectly with everything else. Bateson (1972, 1979) was an early systems thinker who tried to delve into and characterise this phenomenon. Laszlo (2007) draws on findings across a spectrum of sciences, including particle and quantum physics, cosmology, biology, studies on consciousness and parapsychological phenomena. He characterizes the common finding across numerous studies in these fields as the appearance of a puzzling coherence – an instantaneous and dynamic sharing of information across similar entities at all scales (from particle to organismic to inter-organismic to cosmic) that cannot be explained by conventional science. Interestingly, most of the scientists whose work Laszlo follows (drawn from diverse fields like physical, cosmological, and biological sciences, as well as consciousness research; and often including Nobel laureates, which is important to note given that he has moved into an area where metaphysical speculation abounds, and where traditional scientists can sometimes be dismissive), appear to converge on the idea that there is a field of quantum energy, or rather information, which our senses and instruments cannot record. Laszlo calls this phenomenon “In-formation”, and the all-pervading field the “Akashic field”:

“In-formation is a subtle, quasi-instant, non-evanescent and non-energetic connection between things at different locations in space and events at different points in time. Such connections are termed ‘nonlocal’ in the natural sciences and ‘transpersonal’ in consciousness research. In-formation links things (particles, atoms, molecules, organisms, ecologies, solar systems, entire galaxies, as well as the mind and consciousness associated with some of these things) regardless of how far they are from each other and how much time has passed since connections were created between them.

The ‘theory of in-formation’ is not the same as standard ‘information theory’, because in-formation is not information in any of the scientific or everyday definitions. It is neither knowledge received about some fact or event, nor a pattern juxtaposed on a transmission channel, nor yet the reduction of uncertainty regarding multiple choices. Information—in the sense of

knowledge about things and events—may be conveyed by in-formation, but in-formation itself is different from information in the usual definitions.

The idea that information is present throughout nature is a recurrent theme in cultural history, but it is new to Western science. It calls for the recognition that information is not an abstract concept: as ‘in-formation’ it has a reality of its own. It is a part of the physical universe. And because it is present throughout nature, it is best conceptualized as an extended field” (Laszlo, 2007, 68, 73).

Of course, systems theorists have been saying that information spread through nature is the basic unit of reality since Bertalanffy’s (1956) time. In particular, Bateson (1972, 1979) has stressed that mind is immanent in nature, and extends into circuits beyond the physical limits of the human body. However, Laszlo gives sharp form to the idea by postulating the existence of a deep information field, which he calls the Akashic Field:

“...the evidence for a field that would conserve and convey information is not direct; it must be reconstructed in reference to more immediately available evidence. ...In the case of the field that could account for the presence of information in nature, the evidence is the puzzling, quasi-instant form of coherence that comes to light in the physical, cosmological, and biological sciences, as well as in consciousness research. These phenomena call for an explanation, and the simplest and most logical explanation is a field that links the entities that prove to be nonlocally coherent.

...In his previous books this writer named the in-formation field the Akashic Field, or A-field for short” (2007, 73, 75).

In this sense, the idea is metaphysical. This is inevitable, and given the shift within systemists to a concern with systemic thinking rather than a universal science of systems, as well as all the limitations to first order science we have been discussing, it does not pose a problem to my own way of thinking; the epistemological implications and relationships are explored in later chapters. In fact, I see systems thinking as a fruitful meeting ground of science and spirituality, and in this will lay claim to honouring a tradition graced by such eminent thinkers as Einstein (1934) and Bateson (1972). Other scientists such as Bohr (1937, 1963), Bohm (1980) and Prigogine (1989) have also recorded their observations about the nature of objectivity, the role of the

observer and metaphysical ideas (also see Weimer, 1979). Northrop (1967) specifically argues about the inevitability of metaphysics in physics and biology, given that the interpretation of observations is impossible without the input of implicit or explicit theory, and this is prior to, not wholly derived from, observations.

This formulation about a deep information field is not only consistent with findings at the frontiers of the sciences, but also corresponds to commonly shared and deeply enduring ideas and myths across several civilizations. For example, *Brahman* is a Vedic Sanskrit word, and is conceptualized in Hinduism, states Deussen (1996), as the “creative principle which lies realized in the whole world”. *Brahman* is a key concept found in *Vedas*, and extensively discussed in the early *Upanishads*; it is also seen as the collective or common intelligence or soul, of which a part is manifested in each living being. Furthermore, this matches knowings that arise from a variety of hallowed methods of human inquiry – most notably practices relating to altered states of consciousness – that are again sourced from many cultures, including recent rediscovery and investigation in contemporary Western society (see chapter 7 for a detailed discussion). Laszlo notes that (re)learning to access the information contained in the Akashic field would be of great advantage to the contemporary crises – I would add, of the sort that systems thinking claims for its remit.

“At this crucial juncture in the evolution of human civilization it would be of particular importance to cultivate our long-neglected faculty for accessing the in-formation conserved in the A-field. We would also gain crucial insights into ways to cope with the problems of our technologically evolved but largely rudderless civilization” (Laszlo, 2007, 99).

Laszlo provides some pointers to how this has been accomplished in certain areas, such as psychotherapy, or in the outer space experience of the astronaut Edgar Mitchell. We will visit four methods in detail in chapter 6.

“When we do not repress the corresponding intuitions, we can be in-formed by things as small as a particle or as large as a galaxy. This, we have seen, is the finding of psychiatrists and psychotherapists who place their patients in an altered state of consciousness and record the impressions that surface in their minds. It was also Mitchell’s outer-space experience. In a higher state of consciousness, he remarked, we can enter into deep communication with the

universe. In these states the awareness of every cell of the body coherently resonates with what Mitchell identified as “the holographically embedded information in the quantum zero-point energy field” (Laszlo, 2007, 113; see also Mitchell, 2000).

Building on this idea, Laszlo’s speculations are beguiling – he shows how the theory of the Akashic field points toward a way to deal with some of the most profound questions facing mankind: such as about how complexity and life evolved, or what happened ‘at the beginning of the Universe’ or ‘at the beginning of time’. In his synthesis, he follows the best practices of second-order science in identifying the common pattern across theories and models in the disciplines of first order science, adding reflexive elements and meta-framing; and those of first order science, in applying Occam’s razor – the principle of finding the simplest explanation requiring the minimum necessary number of assumptions – in his postulation of the Akashic field (we discussed first order science and second-order science in §3.3).

Laszlo is certainly not alone in his speculation: this idea finds resonance in Goswami (1993), who argues that the primary “stuff” of the Universe is consciousness and that matter is but an expression of it. In a far-reaching examination and synthesis of scientific findings from complexity theory, physics, biology and some other disciplines, Capra (1996) too reaches similar, although not identical, conclusions – that all of life is one interconnected web of cognition:

“Identifying cognition with the full process of life – including perceptions, emotions, and behaviour – and understanding it as a process that involves neither a transfer of information nor mental representations of an outside world requires a radical expansion of our scientific and philosophical frameworks. One of the reasons why this view of mind and cognition is so difficult to accept is that it runs counter to our everyday intuition and experience. As human beings, we frequently use the concept of information and we constantly make mental representations of the people and objects in our environment” (Capra, 1996, 278).

Now, ontology, as a philosophical discipline, is about theories of being and has to be expressed in language (Midgley, 1992b), not that language is the only access we have to reality or that rationality is the sole arbiter of knowing. This is sometimes

interpreted to mean that, although we can have other means of knowing, these do not fall under the rubric of ontology. How such knowing, which is not expressible in language, can be agreed upon as a shared reality, is considered in §7.2. As more and more persons begin to accept a postconceptual view of reality (discussed at §6.3.2), this is becoming an emergent new ontology.

Meanwhile, we must note that there is a danger in the systems perspective that sees increasing complexity and life as emergent phenomena that automatically arise as certain conditions are met; assigns consciousness only to ‘living things’; and treats the intelligence involved as an information-processing algorithm that enables this process of complexification. That this is not so is quite compellingly argued by Maturana and Varela (1987), who show that representationism does not hold up (see §5.2). Further, the question that remains unanswered is: emergence is a fine explanation, but why has life on earth made these specific choices – why is there this particular pattern of unfolding? There is an issue of purpose, direction and control here that needs to be unpacked, which we will visit in §5.3, which follows. One popular possible view is that of simple rules underlying the emergence of complexity, which are not purposive (in the sense of being directed by some universal teleological principle, such as a God), but constrain possible paths for the development of reality. This is often understood as the view about purpose, direction and control from complexity science and the notion of complex adaptive systems, heralded by the classic text, *At Home in the Universe*, by Stuart Kauffman (1995) and other research at the Santa Fe Institute. However, while Kaufmann elaborates his ideas – particularly that of autocatalytic sets (subsequently discovered to operate in some domains), he does not explicitly conclude that, right at the bottom of it all, Newtonian clockwork – this time in the form of quantum biology, is the only principle involved. I believe that he has, in later years, left this question open: note the concluding statements in his book:

“I do not know if the spontaneous order in mathematical models of genomic regulatory systems really is one of the ultimate sources of order in ontogeny. Yet I am heartened by a view of evolution as a marriage of spontaneous order and natural selection. I am heartened by the possibility that organisms are not contraptions piled on contraptions all the way down, but expressions of a deeper order inherent in all life.

... We have only begun to invent the science that will account for the evolving emergent order I see out my window, from spider weaving her web, to coyote crafty on the ridgetop, to my friends and me at the Santa Fe Institute and elsewhere proudly hoping that we are unlocking some kinds of secrets, to all of you making your ways by your own best efforts and own best lights.

We are all part of this process, created by it, creating it.

... Some months ago, I climbed to the first mountaintop I have been able to reach since my wife and I were badly injured in a car accident. ... We reached the peak. The Rio Grande Valley spread below us to the west; the Pecos Wilderness stretched out to the east; the Truchas Peaks erupted to the north. "Phil," I said, "if one cannot find spirituality, awe, and reverence in the unfolding, one is nuts." (Kauffman, 1995, 304)

It is commonsense at one level. Sophisticated mechanisms may be discovered, explaining complex processes in the cosmos, and sophisticated basic processes of life and of the cosmos reproduced in the laboratory. Yet, in its entirety, and in its core reality, we are very far from conquering or controlling the fundamental spark of life – its origins still remains a mystery. Furthermore, the very simplicity in sophistication that these processes display underscores such fundamental questions and mysteries. Once deep interconnectedness is accepted, then the very issue of the location of purpose (and direction and control) in the unfolding processes becomes redundant; we will see in the next section that the processes of life seems to proceed from a highly implicated or entangled, yet creative, encounter or dance between each individual agent or unit of intelligence and its contextual situation.

Laszlo has considered this question of location, and notes the fact that all these millions of decisions and choices being enacted at all levels of the cosmos cannot be explained statistically. The probabilities are extremely low to support an explanation in terms of either a random occurrence (such as evolution based on random genetic mutation) or an information-processing model; so a neo-mechanistic ("systemistic" [RR]) approach to 'emergence' (such as the interpretation attributed to complex adaptive system theory that simple rules explain emergence at all levels without the need for any principle of intelligence underlying the existence or origin of these rules) effectively remains a reductionist explanation. Abram (1996) describes the choices that mediate a spider weaving a web in a specific location: the permutations and the

geometrical complexities involved are far too staggeringly numerous to be encoded in a simple set of rules – see 1996, 50; also see §5.2.2). Bateson (quoting an example from Molière) pointed to the dangers of poor Science that masquerades an act of naming a phenomenon for an explanation of its occurrence (1972, page xx). This approach owes much to the colonialist imperatives underlying the cultural and psychological origins of modern Western science: name a territory or a thing, and it is yours to add to the empire.

In contemporary times, several other scientists and thinkers have arrived at similar formulations regarding interconnectedness or unity: we may count Bohm's (1980) idea of an implicate order– a holographic field where all states of the quantum are permanently coded. This corresponds to Laszlo's idea of the Akashic field as a quantum system or plenum (my understanding of this word is that it is a space of all latent possibilities, a reservoir) where all in-formation is permanently recorded and preserved. Also, Lovelock (1989) and the idea of Gaia, Bateson's idea that mind is immanent and may extend beyond the body and its lifetime (1972, 465), and Maturana & Varela's (1987) conclusion, from careful experimentation and analysis, that there is a structural conjugation between the living being and its environment, and this mutual conjugation or adaptation is so well entangled that the process of cognition (mind) and the physical processes of its living are one and the same process. Certainly, there are points of disagreement in the details amongst these various theories, which I cannot go into here. However, the purpose of this short recapitulation is to draw out the common idea or principle that emerges across these findings, which is *mindful interconnection*.

Now, systems theories of interconnectedness are about co-evolution, mind in nature, etc., but in general they do not assume instantaneous interconnection. Therefore, they are about something different from the Akashic field because they assume time lags and not necessarily action at a distance. We see here at least two perspectives on interconnection. First, that everything is directly or indirectly connected to everything else, and this is a fundamental assumption of all systems approaches (Midgley, 2000). Second, that there is a deeper layer of interconnectedness in addition to the first type, where everything is directly and instantaneously connected at a level that we cannot consciously perceive. My experience leads me to believe in the second, but my argument is not dependent on it being true; even if only the first type of interconnectedness is actually true, it is still the case that it goes well beyond the

capacity of the rational mind to analyse. Thus, other ways of knowing are needed that add to our ability to appreciate interconnectedness. But we need to further consider that, given the overwhelming evidence of presence of a phenomenon, the most simple explanation should be accepted – this is the way of science and rationality. Since this is the exact manner in which Laszlo has marshalled his argument, I find it strange that systemists balk at accepting his theory of the A-field. Moreover, my belief in the second sort of interconnectedness ties in, on the one hand with experiences I have had (and also others; see chapter 6); and on the other hand, yields valuable conceptual possibilities that seem to knit answers to the problems I have raised so far in this thesis.

Another way of looking at this is to say that the power of non-rational ways of knowing comes from the fact that 90% of our knowing is embodied and non-conscious, and this knowing weaves us into the pattern of systemic flow that is the Universe. Thus, the alternative inquiry methods I am advocating (see chapter 7) access this and stimulate learning at both the non-conscious and conscious levels. Such a formulation leaves the possibility of nonlocal connection open and not needing to be specified. In other words, the precise nature of our entanglement is not necessary to describe in exact theoretical terms; what matters is simply that extensive entanglement beyond our rational knowing exists, and that we acknowledge that our embodiment involves connections that are unknowable in their intricacy using the tools of theory. This way of thinking has even greater popularity across a wide range of thinkers: cyberneticians like Bateson (1972, 1979); action researchers like Grof (1988), Torbert (1987) and Heron & Reason (1997); phenomenologists such as Merleau-Ponty (1962); philosophers ranging from Sri Aurobindo (1957), Chardin (1959), Husserl (1964), Krishnamurti (1991), Skolimovski (1994) and Bortoft (1996); a very long line of inquirers into non-Western wisdom traditions such as Herrigel (1953), Abram (1996), Brody (1981), Somé (1993) and Prechtel (1998); and science-philosophers such as Bohm (1980), Goswami (1993), Capra (1996) and Laszlo (2007).

I am happy to stay with a certain uncertainty; in fact, I suspect the possibility of never knowing the final realities. Flood talks about this in reference to systems thinking:

“An understanding of one’s self comes through experience of the essence of things, labelled satori. Each person has the capacity to be awakened or enlightened through satori. Satori is a sort of inner perception – a perception of

wholeness, not of an individual object. Satori cannot be analysed and logically explained because that involves reduction, which of course denatures the wholeness of satori.

Systemic thinking, then, is not something that can be explained easily and understood comprehensively. It is not recommended to rush into rationalisation of this sort. Very quickly we will lose touch with the notion of wholeness in a trivialised account of its so-called properties. Many textbooks that deal with systemic thinking make this mistake. They explain the world in terms of systems and subsystems, what a system is and how a system behaves. An account in these terms does to systems thinking what analysis does to satori – it strips it of all essential meaning” (1999, 82).

From the preceding consideration, I will carry forward the idea of a *deep intelligence field* (I prefer this characterisation; also, the term intelligence avoids the materialistic and mechanistic connotation that information denotes) as the basis of interconnectedness, and show how our experience appears to ratify this phenomenon, and how, in the end, it does provide a satisfying explanation, that links the vital core of experiences often encountered in effective practice (chapter 7) to the systems philosophy.

5.1.1 The systems response to interconnectedness

Midgley’s (1992a, 2000) theory of the boundary critique in essence reflects this idea of interconnectedness. It states that boundaries are artificial constructs, and that we need to examine not only where they are placed but also how these constructs are sourced, to sweep in as much context as practically possible into the inquiry. The theory offers an understanding of the marginalisation process, which could be as much about ideas as it could be about people. The challenge perhaps is about recognising this phenomenon at play in the context of inquiry/ intervention and generating appropriate responses.

How well does the idea of boundaries as aids to understanding provide a basis to understand the essential interconnectedness? Traditionally, a boundary is a concept that is drawn in space and marks off one unit from another – a cell boundary or a nation’s boundary serve to distinguish one autonomous unit from another. In critical systems thinking (Ulrich, 1983; Midgley, 2000), however, the concept of boundary is

abstracted away from its original association with other systems concepts; it comes to be used to do much more than define ‘systems’ (Rosenblatt, 1994). For example, we can define what might, could or should be included in an analysis, even if those things are not currently interacting. At the same time, of course, systems science tells us that material boundaries are permeable and mutable: they regulate and facilitate the movement of matter and energies and the process of dynamic rebuilding of themselves and the units that they mark. Yet, the necessity for our minds to deal with such units of analysis, bracketed off from the whole, introduces certain paradoxes. Midgley recognizes this when he talks about the paradox inherent in recursive analysis (2000, 62-3, 69, 87-8), when discussing the relationship of the ‘self’ to the ‘other’ in Fuenmayor’s thinking: seen alternately from the point of view of the self or that of the other; there is either complete free will to change the other; or none. Therefore, Fuenmayor resolves these two incommensurable positions by binding them in a recursive loop. In the use of language, Midgley (*ibid.* 74-5, 79) discovers, on analysis, that its relation to subject and object again reveals a recursive form. Midgley discovers paradoxes again, in our efforts, be they related to overcoming instrumental rationality (*ibid.* 110) or about mixing methods as ‘fragmentary wholes’ (*ibid.* 255-6). Recent advances in inquiry in physics, psychology and cognitive sciences have shown us that space and time are not necessary elements of the structure of ‘reality out there’; rather, they are part of the way the human mind enacts and cognizes the world (example, Velmans, 1990; Fingelkurts et al, 2010).

The reductionist world of first order science is governed by two primary beliefs: one, that there is a hard, definite material reality that is unchanging; and two, that there is a ‘me’ that can stand separate from and outside of this reality to see it without distortion. These two illusions are powerful because they do provide a helpful structure for most of our everyday experiences in the dimensional scale of our functioning and of our social reality, and therefore became axiomatic realities for first order science. The unfortunate downside is that a linear clockwork concept of time and a three-dimensional lattice ordering of space have become essential filters for the modern Western person to experience anything (Smith, 1999). Boundary critique is significant because it seemingly creates an opening to heal these rifts, by suggesting the primacy of the process of making boundary judgements in both first and second-order inquiries (i.e., about the world or the subject looking at the world). However, I will go on to show that the application of this perspective lacks significant penetrative power when

limited by a sole dependence on the rational mode of knowing. (That is why I said in §4.10 that we could characterise the need to include marginalised voices as a key political challenge presented to Systemic Intervention as a methodology, at a generic theoretical level, and examine the adequacy of Systemic Intervention to this).

For example, it is when we transcend the conventional linear notion of time through the accession of other forms of knowing, we come to realize as a fact that linear time is only one sort of modality, and that we are afforded several other forms, which come to us in a variety of experiences. All of us have an experience of the cyclicity of time – of day and night, of seasonality, of life cycles repeating for each generation. We also have the experience of time ‘standing still’ or ‘rushing by too fast’, of *déjà vu*, and so on. These experiences challenge the idea of simple, linear objective time (Hodgson, 2015).

5.1.2 Time

It is refreshing to look at a wry perspective on our ‘unquestionable’ Western view of time: Malidoma Somé reports a conversation he has with his native peoples, the Dagara, on a visit, while trying to explain to them why people in the modern world are always rushing, because ‘time’ – an idea that does not have an exact equivalent in their language – is in short supply:

“The elder who noticed that moderns don’t have to run toward something that isn’t moving was pointing to the idea that to move is also to keep oneself distracted. The indigenous mind cannot conceive of it otherwise. And so the elder sees those in constant motion (going places, doing things, making noise) as moving away from something that they do not want to look at or moving away from something that others do not want them to look at. When you slow down, you begin to discover that there is a silent awareness of what it is that you do not want to look at: the anger of nature within each of us, the anger of the gods, the anger of the ancestors or the spirit world” (Somé, 1993, 33-4).

The angers that are referred to here are a metaphoric way of referring to the Shadow, a key aspect of the missing piece in the application of boundary critique (see §4.5). A modern Western mind (especially one oriented to science and not exposed to the arts), would probably dismiss the last sentence in the above quotation as tribal pap, voodoo nonsense, for it has often lost an appreciation of the place of metaphoric language in

expression. Ironically, the capacity of the modern scientific mind to access reality, and communicate / express any experience is, in most cases, highly ritualised and circumscribed by a very particular, limited vocabulary, that is culturally exalted as being precise, professional, modern, rational, and so on. This must certainly appear ritualised and full of voodoo nonsense to an impartial observer, who, say, visits from an alien planet! (The place of language in mediating our understanding of reality is dealt with in §5.2.4).

On the contrary, the excessive need for verbiage and the minute literal detail in practically every transaction could appear extremely tiresome to people used to coordinating among themselves more efficiently. (Indeed, we in the modern world cannot have it another way, lest we wake up the millions of these ghost angers that modern ways of being have repressed into our Shadow consciousness!) This is what Brody (1981) discovers, to his consternation, as he goes to live for a year amongst the Dunne-za (formerly known as the Beaver Indians) and the Cree First Nation citizens of the Eastern Rockies in Canada, and struggles to understand their ways. It appears to him for a long time initially, that these people suddenly rise up and go off on their hunting trip, like a flock of birds, without apparently communicating among themselves, until he is able to make the cognitive shifts to understand their ways of being, planning, communicating and doing. I will discuss an important distinction between time-bound, timeless and timely modes of knowing in §5.2.6; see also the discussions at §7.5.1.

I must also draw attention to how Grof (1998) looks at time, since he has presented a radical and, in my view, significant model of consciousness in relation to these multiple other ways of knowing (also see §7.5). Grof refers to these states of mind as ‘nonordinary consciousness’. Here is his view about the experience of time:

“... it is important to realize that the subjective experience of time is radically changed in nonordinary states of consciousness. Within seconds of clock time, one can experience a rich and complex sequence of events that lasts subjectively a very long time, or even seems to involve eternity” (Grof, 1998, 220).

He quotes the thanatologist, Kenneth Ring (1984), who has studied the long-term effects of near-death experiences and notices a remarkable similarity to Abraham

Maslow's descriptions of developments in people following spontaneous "peak experiences" (Maslow 1962, 1964).

"These included an increase in self-esteem and self-confidence, appreciation of life and nature, concern and love for fellow humans, a distinct decrease of emphasis on personal status and material possessions, and development of universal spirituality transcending the divisive interests of religious sectarianism" (Grof, 1988, 220).

Grof has extensive observations about phenomena that constitute experiences beyond conventional notions of time and space, but it is not possible to repeat all of that here (see Grof, 1975, 1988, 2012).

5.1.3 Space

Like time, the experience of space can also be present in multiple ways – not the least of which, apart from dimensionality, is the idea of its quality. We experience spaces as 'warm and inviting' or 'cold and hostile'.

One very interesting paradox is the idea of 'distancing' in the arts and crafts (example, Eriksson, 2011). Both in the practice and in the effect of an art /craft item on the viewer, the notion of 'distancing' is extremely crucial to success. In the practice, the artist is required to simultaneously be engaged and yet disengaged with the process. In terms of engaging the viewer, again, the creation of an optimal balance of 'distance' – read emotional engagement – is sought. This use of the spatial term is expanded upon in §9.2, where I show that reformatting our experience of space and time from the usual linear construct into alternate modes of experience is fundamental to the arts and crafts, and they serve to widen our boundaries (speaking systemically and literally) as well as engage the creative flow.

In Indian philosophy, the distinction is made between *Sukham* and *Dukham*, which stand for the presence or absence of deep joy in living. '*Kham*' actually represents space, so *Su-kham* means the expansion of inner space, while *Du-kham* represents a constriction in one's inner space (or ability to harness the potentialities of the Akashic field or the implicate order) (Ananthanarayanan, 2012). In fact, practices such as distancing (and others explored in chapter 7 and in §9.2), serve to create a liminality or an altered state of consciousness that taps into the deeper potentialities and intelligence

of the deep intelligence field, which I suggest are inaccessible to the everyday consciousness of the Western scientific mind.

5.1.4 The 'modern' outlook and its irrationality

At its core, the effort of these alternate approaches to recovering a sense of the sacred interplay and creative joy inherent in the act of perceiving and deploying ourselves in the world as we meet and shape it, is informed by a variety of techniques for dissolving the perception of hard temporal and spatial boundaries. These approaches, in turn, are underlined by ontologies and epistemologies that are alien and alternate to the modern Western perspective.

The point I am establishing here is that the first order science sort of rationality is characterised by a *preponderance of literacy based thinking and the exclusion of enactive knowing from legitimacy*. (Enactive knowing is disowned, and sharply differentiated from cerebral analysis, except insofar as it is tacitly accessed to establish the *purity* of observation and cerebral analysis. See the discussion of Latour's observations on the process of modern thinking in the third succeeding paragraph). First-order science is also based on the *primacy of discourse as social process*, which leads to the shutting down and active disavowal of several other means we have to access the knowings contained in the plenum (reservoir) of the deep intelligence field.

Current systemic thinking clearly does not step over this particular boundary. It might be argued that other forms of rationality are accessed in systems thinking, or in theory are accessible – as in Systemic Intervention, where the choice of theory and method is left open to decision in the context. It might also be argued that, in the practice of boundary critique (using the approaches of Ulrich, 1983, and/ or Midgley, 2000), alternate values and preferences are explicitly considered; or that non-literary means of description (rich pictures, for example, in SSM) does access these other knowings. How these methods in systems thinking are only extensions of first order science thinking, and do not meet the ontological challenge posed here, is explained in chapter 6. There, methods that work better are explained.

The fact is that certain complex processes of cognising and dealing with the world are active all the time, beneath the radar of our active rational awareness, and often account for new ideas and creative responses. What is more, much of the highly

complex coordinations involved in everyday acts, such as riding a bicycle, are directly managed by such knowing, as Sandlin (2015) records.

This is, indeed, the reason why Latour (1991) titles his work, in wry fashion, *We have never been modern*. In his analysis, ‘modernity’ has been accomplished by creating two artificial dichotomies. One is the separation of human culture from nature. The other is the separation of the work of purification (the first order science project of modernity – which is reified as sacred) from the work of translation (the proliferation of hybrid networks that establish links between various science disciplines, human culture and nature). The translation is not owned up: it is ‘sent underground’ as profane. Restated in terms of our perspectives, ‘translation’ refers to the interconnectedness of everything and the fact that this is accessed without acknowledgement in our creation of the reified, discrete bits of rational knowing that we call ‘scientific’ and ‘modern’.

5.1.5 An ontology of being

In conclusion, we can summarise and characterise this aspect of interconnected knowing as an ‘Ontology of Being’, for which we can continue to use the name ‘Deep Intelligence Field’ (DIF).

This idea of deep intelligence field is what is accessible to our *being-abiding* mode of consciousness (see §3.5). It also corresponds to the realm that Heron has referred to as the fifth domain, “the realm of integral, lived experience, which is both prelinguistic and continuously extralinguistic” (1996, 20). He explains, “it is a fifth domain underpinning all the other four, because these four are constructs which arise out of it, with the emergence of language and its principal pronouns: we, our, I, it” (ibid.). (The reference to the pronouns is related to an earlier discussion drawing a parallel with Wilber’s, 1995, analysis of the same issue. Although both Heron and Reason recognise this separate, fifth domain, they do not dwell on this much in the development of their framework of types of knowing; I want particularly to emphasize this fifth domain because this is precisely the blind spot in modern Western rationalism). Abram dwells at length on recovering a sense of this domain:

“For the primordial affinity between awareness and the invisible air simply cannot be avoided. As we become conscious of the unseen depths that surround us, the inwardness or interiority that we have come to associate with the

personal psyche begins to be encountered in the world at large: we feel ourselves enveloped, immersed, caught up within the sensuous world. This breathing landscape is no longer just a passive backdrop against which human history unfolds, but a potentized field of intelligence in which our actions participate. As the regime of self-reference begins to break down, as we awaken to the air, and to the multiplicitous Others that are implicated, with us, in its generative depths, the shapes around us seem to awaken, to come alive....” (1996, 260).

Finally, my own experience and reflection over three decades leads me to believe that *the deep intelligence field is self-healing*. This is the underlying unifying ground that explains diverse experiences of its accession, ranging from meditation (also termed mindful alertness) and alternate healing practices to Misino’s mirroring (all discussed in chapter 7); Rogers’s (1956, 1957) explanation of psychotherapy; the knowings accessed by other cultures reported by Brody (1981), Somé (1993), Abram (1996) and Prechtel (1998); and it is at the root of creative intuition in arts (Eisner, 2002).

Our consciousness involves a paradox: perceiving ourselves as separate from the world, while nevertheless being, in reality, unified with it (the paradox of separation; see Bateson, 1972). However, the experience of unity is also an available and well-described experience that is only lost to first order science and the corresponding Western mind-set, but has always been accessible to most of humanity (see chapter 6).

The psychotherapist Mark Epstein has reflected deeply on this issue, and describes how the experience of unity is accomplished in Buddhist meditation:

“Culminating in a state of *choiceless awareness* in which the categories of ‘observer’ and ‘that which is observed’ are no longer operational, bare attention eventually obviates self-consciousness and permits the kind of spontaneity that has long intrigued the psychologically minded observers of Eastern practices. This is the spontaneity that Western psychologists confuse with a true self idea. From the Buddhist perspective, such authentic actions leap forth from the clear perception of bare attention; there is no need to posit an intermediate *agent* who performs them” (1996, 111).

Epstein covers remarkable original ground in explaining Eastern ideas by uncovering the false interpretations conventionally attributed to them:

“The final quality of bare attention I want to emphasize is its impersonality....this approach encourages a new version of what Winnicott called “transitional space”.

...meditation is not transitional *in the same way* as the infant’s original object, which helped ease the transition to separateness. Meditation picks up once separateness has been more or less achieved. It is transitional to something new: a state in which the reality of the separate self (and ‘real object’) is called into question. By not identifying with, not holding on to, and not being embarrassed by whatever arises, the meditator moves inexorably from a narrow focus on the content of her experience to an ever-widening focus on the process itself” (ibid. 123-5).

The importance of unearthing perspectives disowned and marginalised by the mainstream is a refrain in most of the works that I cite and cannot be overemphasized; here is what Epstein says about our obsession with the rational and the verbal:

“Indeed, the French psychoanalyst Janine Chasseguet-Smirgel has explicitly referred to this capacity for nonverbal communication as a function of the therapist’s maternal aptitude. Those who question its usefulness, she insists, must have hidden fears of their own feminine side. It is this fear of the feminine that also makes the meditative state so threatening to many psychotherapists. They refuse to offer the state of mind that, by its very nature of non-interference, allows patients to discover their own sticking points. The Buddhist word *sunyata* or emptiness, has as its original, etymological meaning ‘a pregnant void, the hollow of a pregnant womb.’ When a therapist is able to create such a fertile condition, through the use of her own silence, the patient cannot help but come in contact with that which is still unfinished and with which he is still identified, albeit unawares” (Epstein, 1996, 190).

To me, the best outcome of my personal experience with meditation over three decades is this automatic surfacing of issues that I must attend to, during or at the end of the session: I arrange my daily to-do list at the end of my morning meditation, since not only forgotten or buried issues but also the right priorities arise with *total clarity* at that time (more about this at §8.5.1).

I return to Abram:

“The human mind is not some otherworldly essence that comes to house itself inside our physiology. Rather, it is instilled and provoked by the sensorial field itself, induced by the tensions and participations between the human body and the animate earth. The invisible shapes of smells, rhythms of cricketsong, and the movement of shadows all, in a sense, provide the subtle body of our thoughts. Our own reflections, we might say, are a part of the play of light and its reflections. “The inner—what is it, if not intensified sky?” (1996, 262).

When first order science dismisses such knowings as ‘mystical’, ‘primitive’ or ‘incorrigibly subjective’ (as if subjectivity is an evil to be expunged), it is because it is not possible for a person operating from the dominant Aspirational level of Tier 1 consciousness to discriminate the source of knowing enjoyed by another - whether it is from a Mechanistic or a Holistic level. In any case, these two appear identically worthy of rejection to our protagonist (see §3.4.1 for description of these levels). Fortunately, with the emergence of second-order science, these realities are being ‘confirmed’ to first order science and modernity (see chapter 6 for examples).

“Late one evening I stepped out of my little hut in the rice paddies of eastern Bali and found myself falling through space. Over my head the black sky was rippling with stars, densely clustered in some regions, almost blocking out the darkness between them, and more loosely scattered in other areas, pulsing and beckoning to each other. Behind them all streamed the great river of light with its several tributaries. Yet the Milky Way churned beneath me as well, for my hut was set in the middle of a large patchwork of rice paddies, separated from each other by narrow two-foot-high dikes, and these paddies were all filled with water. The surface of these pools, by day, reflected perfectly the blue sky, a reflection broken only by the thin, bright green tips of new rice. But by night the stars themselves glimmered from the surface of the paddies, and the river of light whirled through the darkness underfoot as well as above; there seemed no ground in front of my feet, only the abyss of star-studded space falling away forever” (Abram, 1996, 3-4).

Abram rediscovers the spell of enchantment, the mystery and wonder of inhabiting the vast conscious universe, in his travels; and reflects this ‘Spell of the Sensuous’ through his writing. His book is part testimony and part deep philosophical examination of the conundrum created by our cauterised, highly truncated modern sensibility. This

attempt (through recollected testimony), to interweave a communication of the primary sense of the basic and vital human living experience that he rediscovered, along with a searching examination of what first order science rationality has wrought on the world, is underlined by a conviction that I completely share and endorse. Indeed, it is the same goal that illumines the effort of this thesis: *a privileging of the felt human reality over the runaway construction of an intellectually ordered but effectively grotesque world*. What Abram and I do not suggest is an atavistic return to tribalism. (Ironically, truly considered, as I explained earlier, it is the ‘modern’ that is tribalistic in terms of Malhotra’s evolutionary perspective). To speak in existential universe mapper terms (§3.4), we need to favour an ‘include and ascend’ approach that restores and uplifts the first order science model by reintegrating these varieties of human experience and consciousness, adding the Humanistic (with vital dimensions of the Mechanistic and Conformistic) to the excessive anchorage in the Individualistic and Aspirational. By a balanced (re)alignment of all these levels, an enlivening and the awakening of a truly holistic perspective is invited. (‘Holistic’ is a badging that should, I imagine, be acceptable to Systems Thinkers!).

“It may be that the new “environmental ethic” toward which so many environmental philosophers aspire—an ethic that would lead us to respect and heed not only the lives of our fellow humans but also the life and well-being of the rest of nature—will come into existence not primarily through the logical elucidation of new philosophical principles and legislative strictures, but through a renewed attentiveness to this perceptual dimension that underlies all our logics, through a rejuvenation of our carnal, sensorial empathy with the living land that sustains us.

A genuinely ecological approach does not work to attain a mentally envisioned future, but strives to enter, ever more deeply, into the sensorial present. It strives to become ever more awake to the other lives, the other forms of sentience and sensibility that surround us in the open field of the present moment. For the other animals and the gathering clouds do not exist in linear time. We meet them only when the thrust of historical time begins to open itself outward, when we walk out of our heads into the cycling life of the land around us. This wild expanse has its own timing, its rhythms of dawning and dusk, its seasons of gestation and bud and blossom. It is here, and not in linear history, that the ravens reside” (Abram, 1996, 69, 272-3).

The recovery of this ethic of being, the reconnection with reality, is only possible when the noisy whirlwind activity of our rational mind that is constantly scanning, evaluating, thinking, judging, planning and plotting, can be adequately calmed. Such an attitude must necessarily lie at the centre of any sensible approach to living.

This can be restated in terms of a simple consideration. Systems thinking aims at a holistic approach. Yet, by its very nomenclature, it privileges Thinking over other dimensions of living. Applied systems thinking, including systemic intervention, restores a balance by adding the dimensions of doing, and cognition (cognition is the process of making sense and meaning from our perceptions and can in large measure proceed unconsciously; in contrast, thinking is conscious and deliberate). This is why I am introducing the term *systemic knowing*: it goes that extra mile. At the core of these three dimensions of life (thinking, doing, and cognition) sits being-abiding. Systemic Knowing reinforces an understanding of how we can recognise and act in consonance with this dimension, beyond thinking in the usual limited sense.

Let me elaborate this in yet a third way. Systemic Thinking, anchored as it is in the ghosts of modernism, rationalism and first order science, especially when stuck in the mire of the limitations of a noun-based language such as English (see 5.2.4), can only promote *systemicity-hood* (definition follows). On the other hand, Systemic Knowing – composed in equal parts of Thinking, Doing, Cognising and Being – anchored in the way human knowing always was and is meant to be, promotes *systemicity-ness*. By *Systemicity-hood*, I refer to an exalted position that comes from the recognition of belonging to the modern tribe of Systems Thinkers by virtue of the expert use of a specific language and grammar connotative of such membership. *By Systemicity-ness, I refer to an ability to reside in Systemic Knowing – a quality of being permanently in touch with the fundamentally mysterious, paradoxical and idiosyncratic processes that characterize the systemic nature both of the world and how we disport ourselves in and on it.*

A path to access this core ontology of being, the deep intelligence field – which I refer to as the N3 way – is sketched in §8.4. Methods for accomplishing this are explained in chapter 6.

5.2. Reality is always being co-constructed

Having considered the idea of interconnectedness, the second fundamental idea about the systemic nature of reality I wish to introduce is the idea of enactive cognition: that reality is always being co-constructed. This means that an objective reality does not exist out there, which we access passively through our sensory perceptual mechanisms. The act of perception (of receiving, grasping information) as well as that of cognition (making sense and building meaning from that information) are both directed by choices we make about what we ‘wish’ to grasp (consciously or non-consciously) and how and where we shall pay attention to achieve that purpose. (Usually unconscious and fleeting, millions of these decisions inform small everyday actions). Hence, the reality that is experienced and perceived through human cognition is constructed by these unconscious choices (Gallagher & Shear, 1999; Núñez & Freeman, 2000; Núñez, 2012; Engel et al, 2013; Núñez & Cooperrider, 2013).

Furthermore, from moment to moment, as things present themselves to us and as they change and unfold in their dynamism, this in turn influences our selection and deployment of frames for perceptive and cognitive choice and action. Thus, we respond to the environment in a mutual dance of co-construction.

This view of enactive cognition follows logically on the idea of embodied action, and is best detailed in Varela et al (1991), following on from Maturana’s pioneering work (example, Maturana & Varela, 1987). We will now first examine the history of ideas in this field, focusing on the cognitive sciences, before turning to a brief consideration of enactive cognition in §5.2.3.

While the idea of embodied action (as in autopoiesis) is now accepted within systems thinking, the idea of enactive cognition is not so well assimilated (for example, the terms cognition or enactive cognition do not appear in either Jackson, 2000 or Midgley, 2000, even though the latter devotes several pages to a discussion of autopoiesis). However, even autopoiesis simply remains a conceptual observation that largely remains unused in our actual practice of living or systems thinking (examples of exceptions are Bilson, 1997 and Cordoba & Midgley, 2006). This links back once again to the Western approach to life, as will be explained shortly. On the other hand, in several other traditions (for example, Hindu and Buddhist thought), methods for practice corresponding to an enactive cognition have been explicated, experienced and

validated over many generations. This will be touched upon here and expanded in later chapters.

5.2.1 *The phenomenon of human knowing*

That our approach to understanding the core phenomenon of knowing might be flawed and constitute the real underlying cause of the present global malaise is a refrain that has been articulated several times – for example, in the report to the Club of Rome by Botkin et al (1979). Their report entitled *No Limits to Learning* was a response to the diagnosis of *Limits to Growth* (Meadows et al, 1972). While the latter foretold, through a system dynamics simulation, the possibility of a global crisis (the ‘world problematique’, arising from human activities), Botkin et al’s report stressed that, in fact, a better approach to human knowing about the world is possible, which can avert the crisis. They described their approach as ‘innovative learning’ - a conceptual framework composed of ‘anticipatory’ and ‘practical’ learning.

Maturana and Varela, again, restate this argument in their chosen language:

“We affirm that at the core of all the troubles we face today is our very ignorance of knowing. It is not knowledge, but the knowledge of knowledge, that compels. It is not the knowledge that a bomb kills, but what we want to do with the bomb, that determines whether or not [sic] we use it. Ordinarily we ignore it or deny it to sidestep responsibility for our daily actions, as our actions—all without exception—help bring forth and validate the world wherein we become what we become with others. In that process of bringing forth a world, blind to the transparency of our actions, we confuse the image we want to project with the being we want to bring forth. This is a misunderstanding that only the knowledge of knowledge can correct” (1987, 248, italics added for emphasis).

There is a clue to a way forward here in this statement, in its reference to ‘image’ and ‘being’, which will become clearer as we look at how cognitive science has set about examining and uncovering an understanding of the process of knowing, and in further arguments later in the thesis. What has caused this misunderstanding? Varela et al refer to the deep tension in our present world between science and experience:

“In our present world science is so dominant that we give it the authority to explain even when it denies what is most immediate and direct—our everyday, immediate experience. Thus most people would hold as a fundamental truth the scientific account of matter/space as collections of atomic particles, while treating what is given in their immediate experience, with all of its richness, as less profound and true. Yet when we relax into the immediate bodily well-being of a sunny day, or of the bodily tension of anxiously running to catch a bus, such accounts of space/matter fade into the background as abstract and secondary.

When it is cognition or mind that is being examined, the dismissal of experience becomes untenable, even paradoxical. The tension comes to the surface especially in cognitive science because cognitive science stands at the crossroads where the natural sciences and the human sciences meet. Cognitive science is therefore Janus-faced, for it looks down both roads at once: One of its faces is turned toward nature and sees cognitive processes as behaviour. The other is turned toward the human world (or what phenomenologists call the ‘lifeworld’) and sees cognition as experience” (1991, 12-13).

This can be said for the larger systems field as well, as can be seen in Midgley’s response (2008) to the attempt by Cabrera et al (2008) to articulate the essence of systems thinking. Midgley (2008) traces the historical reasons for the split between systems science and the application of systemic principles to practice (referred to in the article as systemic action research, which we may now include under the rubric of systems thinking): again, science vs. experience.

Interestingly, phenomenologists have paid strong attention to experience. The reason why they fail to explain the phenomenon adequately, however, is their directedness to just one-half of the story: they focus exclusively on subjective truth (Mingers, 1992b), while first order science focuses exclusively on objective truth. Thus, both these approaches are actually quite within the mainstream of Western philosophy, argue Varela et al (1991: see, for example, the discussion of Husserl on page 19; also, an explanation about how Anglo-American analytic philosophy has steadfastly attempted to find meaning as a fixed relation between words and the world, from Mark Johnson, on pages 149-150). Not only that, but in fact, the “craving for an absolute ground”, with the basic underlying logic of representationism, leads eventually to nihilism. This

is because the ground cannot be found in our representations; it can only be found in accepting the “...possibility of working with our everyday experience in a way that is liberating and transformative” (Varela et al, 1991, 235).

Having examined the sources of the obfuscation of our understanding of so basic a process as human knowing in the West, Varela et al look at what has obtained elsewhere in human civilisation. They realize that “for millennia human beings have had a spontaneous understanding of their own experience—one embedded in and nourished by the larger context of their time and culture” (1991, 6). Throughout this thesis, I will refer to, and sometimes examine in some detail, several of these other approaches. Cognitive science, interestingly, has become inextricably linked to this spontaneous folk understanding through discoveries from experiments (Varela et al, 1991, 6), and we could say it has perhaps been recovered in their formulation of enactive cognition.

5.2.2 A perspective from cognitive science

Let us now turn to a brief recapitulation of the history of cognitive sciences, as narrated by Varela et al. They record three significant paradigm shifts in our understanding of cognition. They have termed these approaches as Cognitivism, Connectionism and Enaction.

Cognitivism

“Cognitivism consists in the hypothesis that cognition – human cognition included – is the manipulation of symbols after the fashion of digital computers. In other words, cognition is mental representation: the mind is believed to operate by manipulating symbols that represent features of the world or represent the world as being a certain way” (Varela et al, 1991, 8).

The key implications of a cognitivist approach, according to Varela et al, are two intertwined issues:

“(1) Cognitivism postulates mental or cognitive processes of which we are not only unaware but of which we cannot be aware; and (2) Cognitivism is thereby led to embrace the idea that the self or cognizing subject is fundamentally fragmented or nonunified” (ibid. 48).

The reader would agree, I am sure, that we are unaware of the many processes that underlie most of our everyday acts of cognition. Indeed, far too many psychology experiments demonstrate this. While, post-Freud, we do believe in an unconscious component of the mind, the sense in which processes in cognitivism are not available to our conscious awareness is different. In psychoanalysis, these can theoretically be brought to consciousness (and with varying degrees of success in practice). Not so in cognitivism: it postulates processes that cannot be brought to consciousness at all (ibid, 49).

“Thus cognitivism challenges our conviction that consciousness and the mind either amount to the same thing or there is an essential or necessary connection between them” (ibid). The cognising subject is split in two - unconscious symbolic computation at one level, and conscious experience at another. Varela quotes Jackendoff, who argues that the distinctions made in the phenomenological mind are mere adjuncts, projections of the computational mind, not good for anything” (ibid, 56).

Ultimately, cognitivism cannot explain the enduring human experience of a self that has continuity.

Connectionism

Let us now consider connectionism:

“...Emergence ...is typically referred to as connectionism. This name is derived from the idea that many cognitive tasks (such as vision and memory) seem to be handled best by systems made up of many simple components, which, when connected by the appropriate rules, give rise to global behaviour corresponding to the desired task. Symbolic processing, however, is localized. Operations on symbols can be specified using only the physical form of the symbols, not their meaning. Of course, it is this feature of symbols that enables one to build a physical device to manipulate them. The disadvantage is that the loss of any part of the symbols or the rules for their manipulation results in a serious malfunction. Connectionist models generally trade localized, symbolic processing for distributed operations (ones that extend over an entire network of components) and so result in the emergence of global properties resilient to local malfunction. For connectionists a representation consists in the

correspondence between such an emergent global state and properties of the world; it is not a function of particular symbols” (Varela et al, 1991, 8).

Connectionism, then, remains a representationist model, one that continues to be based on symbols as representing features of the world. It postulates the emergence of global behaviour states, patterns or configurations; yet what causes this ‘emergence’ is not adequately known. In fact, such phenomena are by no means limited to neuronal ensembles, but have been reported in such diverse systems as vortices and lasers, chemical oscillations, genetic networks, developmental patterns, population genetics, immune networks, ecology, and geophysics (This is the subject of study of complexity sciences and complex adaptive systems, a vast area in itself. See Prigogine & Stengers, 1984; Emmeche et al, 1997). In each case, a network gives rise to new properties, and this has been simulated in laboratory experiments in such separate areas as the spontaneous creation of life-supporting molecules to Bittorio cellular automata (Wolfram, 1984).

Where does this take the dialogue between cognitive science and human experience? Varela et al use a simple example of driving a car, to demonstrate that this is composed of the continuous use of common sense or background know-how, which is, perhaps, impossible to package into explicit, propositional knowledge (1991, 147-8; also recall the example of bicycle riding discussed earlier in 5.1.4). In the two and a half decades since their book, computer science and robotics have advanced to build artificial intelligence systems that can learn through the accumulation of experience; but this remains restricted to specified and highly limited domains.

Following on this and the discussions about interconnectedness in the preceding section, let us see what explanation is offered by Varela et al:

“If, however, our lived world does not have predefined boundaries, then it seems unrealistic to expect to capture commonsense understanding in the form of a representation— where *representation* is understood in its strong sense as the re-presentation of a pregiven world. Indeed, if we wish to recover common sense, then we must invert the representationist attitude by treating context-dependent know-how not as a residual artifact that can be progressively eliminated by the discovery of more sophisticated rules but as, in fact, the very essence of creative cognition” (1991, 148).

Varela et al recount several experiments in biology that underline a key central point they make: “...the neuronal network does not function as a one-way street from perception to action. Perception and action, sensorium and motorium, are linked together as successively emergent and mutually selecting patterns” (ibid, 163). For example, in relation to colour cognition, it has been discovered that “distinctly cognitive operations are required to generate these focal colors. The cognitive operations appear to be of two kinds: one is universal for our species and the other is culture specific” (ibid, 170). Therefore,

“These examples show that color categorization in its entirety depends upon a tangled hierarchy of perceptual and cognitive processes some species specific and others culture specific. They also serve to illustrate the point that color categories are not to be found in some pre-given world that is independent of our perceptual and cognitive capacities. The categories red, green, yellow, blue, purple, orange—as well as light/warm, dark/cool, yellow-with-green, etc. are experiential, consensual, and embodied: they depend upon our biological and cultural history of structural coupling.

We can now appreciate, then, how color provides a paradigm of a cognitive domain that is neither pre-given nor represented but rather experiential and enacted. It is very important to note that just because color is not pre-given does not mean that it does not exhibit universals or that it cannot yield to rigorous analysis by the various branches of science” (ibid, 171).

They report extensively on various experiments that also indicate how not only biological templates for the human species but also cultural templates for specific social and language groups influence colour cognition (ibid, 171). The use of the term ‘structural coupling’ represents their understanding of the discovery from careful research that, in each moment of experience and enaction that represents the activity of any living creature, the impress of the perception (cognition) of the situation and the response to that actually alters the structures of the apparatus involved in the activities of perception and cognition: the record of each moment, as it were, is indelible and physical. This runs counter to the dominant view, still prevalent amongst most laypersons, that perceptive and cognitive tasks involve some form of optimal adaptation to the world. In a ‘sleight of mind’ (my expression) similar to reverse engineering, western science deduces that, since deductive logic is the very paradigm

of human thought, it must be the basis of cognition and intelligence in the natural world! (See Varela et al, 1991, 103). Let us now consider the alternate view to the prevailing Western perspective that Varela et al have put forward.

5.2.3 Enactive cognition

To understand the idea of cognition as embodied action, I prefer to provide extensive direct quotations from Varela et al (1991). This is because their use of language is very specific, and meaning could easily be lost in paraphrasing. Continuing on with their study of colour perception:

“... We have seen that colors are not “out there” independent of our perceptual and cognitive capacities. We have also seen that colors are not “in here” independent of our surrounding biological and cultural world. Contrary to the objectivist view, color categories are experiential; contrary to the subjectivist view, color categories belong to our shared biological and cultural world. Thus color as a study case enables us to appreciate the obvious point that ... world and perceiver, specify each other. It is precisely this emphasis on mutual specification that enables us to negotiate a middle path between the Scylla of cognition as the recovery of a pregiven outer world (realism) and the Charybdis of cognition as the projection of a pregiven inner world (idealism). These two extremes both take representation as their central notion: in the first case representation is used to recover what is outer; in the second case it is used to project what is inner. Our intention is to bypass entirely this logical geography of inner versus outer by studying cognition not as recovery or projection but as embodied action.

Let us explain what we mean by this phrase embodied action. By using the term embodied we mean to highlight two points: first, that cognition depends upon the kinds of experience that come from having a body with various sensorimotor capacities, and second, that these individual sensorimotor capacities are themselves embedded in a more encompassing biological, psychological, and cultural context. By using the term action we mean to emphasize once again that sensory and motor processes, perception and action, are fundamentally inseparable in lived cognition. Indeed, the two are not merely contingently linked in individuals; they have also evolved together.

We can now give a preliminary formulation of what we mean by enaction. In a nutshell, the enactive approach consists of two points: (1) perception consists in perceptually guided action and (2) cognitive structures emerge from the recurrent sensorimotor patterns that enable action to be perceptually guided” (1991, 172-3).

Outside of the cognitive sciences, several other studies and practices reinforce the idea of cognition being directly related to sensorimotor patterns and the idea of learning as embodied. Two such practices, theatre based process work at the Sumedhas Academy in India and Holotropic Breathwork, are detailed in chapter 6.

Returning to Varela et al (1991), in summarising their position, they conclude that,

“The basic level of categorization, thus, appears to be the point at which cognition and environment become simultaneously enacted. The object appears to the perceiver as affording certain kinds of interactions, and the perceiver uses the objects with his body and mind in the afforded manner. Form and function, normally investigated as opposing properties, are aspects of the same process, and organisms are highly sensitive to their coordination. And the activities performed by the perceiver/actor with basic-level objects are part of the cultural, consensually validated forms of the life of the community in which the human and the object are situated— they are basic-level activities” (ibid, 177, italics added).

At last, we are in a position to summarise the understanding that the Santiago School (Maturana and Varela being the two most famous names associated with this) has generated through painstaking and sophisticated research and contemplation. Varela et al (1991) summarise the Enactive Approach in these words:

“As we can now appreciate, to situate cognition as embodied action within the context of evolution as natural drift provides a view of cognitive capacities as inextricably linked to histories that are lived, much like paths that exist only as they are laid down in walking. Consequently, cognition is no longer seen as problem solving on the basis of representations; instead, cognition in its most encompassing sense consists in the enactment or bringing forth of a world by a viable history of structural coupling” (ibid, 205-6).

Embodied cognition – some footnotes

The literature on embodied cognition is vast and cannot be discussed in its entirety here; however, the interested reader is directed to Garbarini & Adenzato (2004) and Shapiro (2010) for a preliminary current overview. Particularly relevant to the arguments I am building here are Sennett (2008) and Crawford (2009) – discussed in chapter 7.

5.2.4 The action paradox and the language paradox

The fact that knowing is therefore directly linked to doing results in what Heron has formulated as the ‘*Action paradox*’: “We learn more about our worlds when we are more interested in enhancing them with excellence of action than in learning about them” (1996, 114).

In connection with this, it is also important to understand the role of language in both cognition and knowing. This, of course, is a vast topic that could be one or more books in itself, and much has already been written on the subject, which has to be placed outside the scope of this thesis. One classic text is Luria (1975); I personally like the reflections in Cassuto (2004).

It is unfortunate that the West tends to view this relationship in terms of a polarised either-or framework: either language is primary and determines cognition, or cognition is primary and is expressed in language. It seems more sensible to view it in terms of principles similar to the foregoing elaboration of enactivity: a mutually co-implicated mechanism like structural coupling (between knowing and language); a proscriptive rather than prescriptive mechanism in the affordance of choices; and, finally, as in everything, evidencing a certain paradoxical nature.

The *language paradox* consists of this: language is very important for us to describe our experiences to one another and build a shared, collective image of the world, so that we can act in cooperation with one another: we are fundamentally social beings. *Yet this very articulation can lead to a problem about identifying or recognising that which is true knowing.*

According to Heron (1996), our primary meaning, which is the tacit, inchoate impress of our interaction with the world, is purposed towards realising an ever-progressive end-state of explicit or secondary meaning, in which the primary knowing is raised

into conscious relief (see §4.6.4). While modern thinking in fields such as knowledge management tend to treat tacit knowledge as simply unexpressed knowing in an individual's head that needs to be drawn out and articulated (see Nonaka & Takeuchi, 1995, for a seminal example), revisiting Polanyi's original formulation of the term and his ideas about knowing clarifies the picture:

Polanyi (1946) examines the process of discovery in science in detail. He states that “all the efforts of the discoverer are but preparations for the main event of discovery, which eventually takes place—if at all—by a process of spontaneous mental reorganization uncontrolled by conscious effort” (20). He finds that

“...the process of discovery is akin to the recognition of shapes as analysed by Gestalt psychology. Köhler assumes that the perception of shapes is caused by the spontaneous reorganization of the physical traces made by sense impressions inside our sense organs.

...the conditions in which discovery usually occurs and the general way of its happening certainly show it in fact to be a process of emergence rather than a feat of operative action” (1946, 19).

According to Polanyi, this is true of mathematics, as well as all other creative activities of the mind:

“The solution of riddles, the invention of practical devices, the recognition of indistinct shapes, the diagnosis of an illness, the identification of a rare species, and many other forms of guessing right seem to conform to the same pattern.

All these processes of creative guesswork have in common that they are guided by the urge to make contact with a reality, which is felt to be there already to start with, waiting to be apprehended.great discovery is the realization of something obvious; a presence staring us in the face, waiting until we open our eyes” (1946, 20-21).

He identifies two disparate formulations of discovery — namely:

“... (1) spontaneous organization of mind and clues to the realization of potential discovery and (2) extra-sensory perception of reality called into consciousness by the aid of relevant clues. He further conjectures that these would become identical if we were to assume that the ordinary perception of

Gestalt includes a process of extra-sensory perception. That is, if sense impressions were normally accompanied by an extrasensory transmission of the meaning to be attached to them” (1946, 24).

Mooradian (2005), analysing contemporary knowledge management, retraces Polanyi’s work and reaffirms that tacit knowledge is not always easy to recover because it lies in the background of our thinking and makes that thinking possible. Tsoukas (2003) also believes that tacit knowledge has been greatly misrepresented in management studies, which ignores its essential ineffability. However, this ineffability does not mean that we cannot discuss the skilled performances in which we are involved. New knowledge comes about, not when the tacit becomes explicit, but when our skilled performance is punctuated in new ways through social interaction, which involves many dimensions beyond language.

To relate this to systemic theory, I shall use Midgley’s (2000) distinction between content and process. The very expression into language of *any thing* generates and privileges *content*; the moment that is done, a *processual connect* with the experience of living is diminished. All expression in language is instantiated content – the thing has been named, its boundaries frozen; and thus, likely, automatically labelled, categorized and assigned a preference ranking. This is particularly the problem with a language like English where the root forms of words are mostly nouns – everything spoken is therefore *named, classified content*. This is also the preferential approach to knowing in the first order science project – naming, labelling, classifying, measuring, are all the fundamental activities that signify its approach: which, therefore, prescribes a highly specific and limited language to use in its articulation of knowledge. It is arguably this problem in first order science (although the first and second order science terminology didn’t exist when he was writing) that Midgley (2000) is rebelling against when he advocates a primary focus on the processes by which content knowledge comes into being; by consciously changing the process we potentially make the content more amenable to critique and change.

However, not all languages are alike; the first order science way is not the only way to use language. There are numerous traditions that deploy language in a way that gives the possibility of dealing creatively with frozen content. Oral traditions in many cultures were privileged and maintained as a basis to keep the language and the knowing plastic and responsive to emergent realities. The naming of places and people

in terms of descriptors that signified qualities and/or processes that inform significant characteristics or identities (for example, place names such as Quinnehtukqut – beside the long tidal river, corrupted into Connecticut now; and person names that translate crudely into English as ‘forever blossoming’; ‘she returns from war’, ‘red cloud’, or ‘sitting bull’) indicate a brilliant and creative use of language that the First Nation Americans developed. The terms *Sukham* and *Dukham*, mentioned earlier in §5.1.3, are processual names – the focus for users of the language is always to ask how the signified process has manifested in the current experience – to link the processual natures not contents; simultaneously, in understanding the process at work in each instance, the user has to concomitantly evaluate the newness or uniqueness of each experiential instant. Bohm (1980) takes us through a very interesting experiment with English language that would privilege the verb form as its root rather than the noun form that encourages fragmented thinking: he describes how this could be done using a word form he calls the ‘rheomode’, and shows how this improves the ability to tackle questions of truth and falsity, which normal English is unsuited for. He demonstrates elegantly that the form of language codifies and privileges a worldview (Bohm, 1980, 27-47).

In fact, language first and always arises in the mind as a *pattern* (often first recognised in the form of a metaphor), which provides a basis to describe the original inchoate quality of an experience when it is new. This can only be done by comparing to what is similar in the old; else, a new word has to be established in the language for that specific quality of experience. The significance of patterns, symbols and metaphors is that they can signify complex relationships and dynamics; so a seed is both the product of a tree and the tiny latent form of a whole tree that it can grow into.

Artists recognise these origins and value and honour them; they are trained to refine their senses, appreciate the impress of the moment of experience, locate its unique and unusual dimensions that do not correlate with past experiences, and translate or express their experience into appropriate forms, selecting the relevant media and forms of expression to do so effectively. It is important to recognise that this is also language of a sort whose importance has been forgotten within the Church of modern science. To quote Elliot W. Eisner,

“...literal language and quantification are not the only means through which human understanding is secured or represented. So much of schooling

privileges discursive language and the use of number that types of intelligence and forms of understanding not represented in these forms are given marginal status.

Ideas rendered in non-discursive form or in number need to be ‘read’ to be experienced. The ability to read these forms constitutes a form of literacy...” (2002, 204-5).

Eisner’s book is a fascinating discourse on the cognitive functions of the arts, and the importance of their development, and I would recommend this as an essential primer for any systemist wishing to expand her/his capacity for knowing beyond the grip of rationalism. In chapter 7, I talk about the nature of primary and secondary meanings, and the ways of knowing and expressing them: these will explain how such knowings both prior to and extensive beyond language can be accessed by us.

Finally, we need to realise that it is only when boundaries are established to define and freeze behaviour, as for example in prescribed ways of doing “Science”, that language becomes a way of merely confirming and reinforcing the old content, rather than experiencing the new. In systemic terms, exploring or critiquing these boundaries needs considerable expansion of perspectives – in just a few paragraphs, Smith (1999) (recommended reading for systemists who believe they are free of thinking conditioned by language) describes pithily how old worldviews are reinvented or reproduced in new forms of language (as when imperialism dons new masks) when the necessary maturational processes are not transacted. Here are a couple of lines in illustration, relating to forms of neo-imperialism:

“Territories are called markets, interesting little backwaters are untapped potentials and tribal variations of culture and language are examples of diversity. Evangelicals and traders still roam its landscape, as fundamentalists and entrepreneurs” (Smith, 1999, 98).

Heron believes that research inquiry must be seen as “...an intersubjective space, a common culture, in which the use of language is grounded in a deep context of non-linguistic meanings, the lifeworld of shared experience, necessarily presupposed by agreement about the use of language itself” (1996, 11). When systems thinking develops an elaborate superstructure of specialised concepts and terminologies and privileges understanding in rational and propositional terms, it denies this possibility.

Abram (1996) raises the question:

“How did Western civilization become so estranged from nonhuman nature, so oblivious to the presence of other animals and the earth, that our current lifestyles and activities contribute daily to the destruction of whole ecosystems— whole forests, river valleys, oceans—and to the extinction of countless species? ...How did civilization break out of, and leave behind, the animistic or participatory mode of experience known to all native, place-based cultures? (Abram, 1996, 137).

His research shows that,

“...animism was never, in truth, left behind. The participatory proclivity of the senses was simply transferred from the depths of the surrounding life-world to the visible letters of the alphabet. Only by concentrating the synaesthetic magic of the senses upon the written letters could these letters begin to come alive and to speak. ‘Written words,’ says Socrates, ‘seem to talk to you as though they were intelligent. . . .’ Indeed, today it is virtually impossible for us to look at a printed word without seeing, or rather hearing, what ‘it says.’ For our senses are now coupled, synaesthetically, to these printed shapes as profoundly as they were once wedded to cedar trees, ravens, and the moon. As the hills and the bending grasses once spoke to our tribal ancestors, so these written letters and words now speak to us” (ibid, 138).

While tangential to our current exploration about language, the implications of Abram’s far-reaching inquiry and testimonial are nevertheless relevant to the larger goals of systemists:

“In the absence of formal writing systems, human discourse simply cannot isolate itself from the larger field of expressive meanings in which it participates. Hence, the linguistic patterns of an oral culture remain uniquely responsive, and responsible, to the more-than-human life-world, or bioregion, in which that culture is embedded.

It should be easy, now, to understand the destitution of indigenous, oral persons who have been forcibly displaced from their traditional lands. The local earth is, for them, the very matrix of discursive meaning; to force them from their native ecology (for whatever political or economic purpose) is to

render them speechless—or to render their speech meaningless—to *dislodge them from the very ground of coherence*. It is, quite simply, to force them out of their mind. The massive ‘relocation’ or ‘transmigration’ projects underway in numerous parts of the world today in the name of ‘progress’ (for example, the forced ‘relocation’ of oral peoples in Indonesia and Malaysia in order to make way for the commercial clearcutting of their forests) must be understood, in this light, as instances of cultural genocide” (ibid, 178, italics in original).

Finally, we must note that Abram (1996), Heron (1996) and Smith (1999) have all argued as well as demonstrated that the recovery of expression through the creative modification of language is critical to transcending this problem and moving to a postconceptual knowing (§6.3.2). The power of this has been demonstrated by Paulo Friere’s (1972) work, albeit in a specific context of adult education: Friere created a programme of adult literacy when the power of social and political analysis in dialectical conversation was harnessed to bring about both literacy and empowerment among the oppressed In Brazil. In addition, the power of other forms of expression, including the arts as stated by Eisner (2002), is explained in §6.2 and chapter 7.

5.2.5 The systems approach to cognition

In the light of preceding discussions, we can begin to appreciate that systems thinking has not adequately considered the role of cognition in its development of methods. While systems thinking in itself involves reframing, and several systems methodologies (example, Checkland’s, 1981, Soft Systems Methodology and Beer’s, 1985, Viable System Model) incorporate specialized and robust tools to empower reframing and a creative expansion of perspectives, most existing methods do not actively incorporate a deeper understanding of cognitive processes as explored in the preceding sections. This becomes clearer when they are contrasted with the alternate methods described in the next chapter (6).

We must now consider: what might be a suitable articulation of a generic epistemic goal for systems thinking? I would suggest that a suitable aim would be the development of a theory adequate to the systemic ontology (offered in this chapter in terms of four simple dimensions, as a start).

5.2.6 *The Ontology of Knowing: Inside the Enactive Process*

Just as we designated the interconnected intelligence field as an ontology of being, it would serve the purposes of our exploration to refer to this reality of enactive cognition as *the ontology of knowing*.

Usually, any theory of knowing is considered as an epistemology. However, this terminological classification, originating in Western philosophy, effectively refers purely to conscious rational knowing; while here we are discussing the emerging picture of the nature of the knowing. Since the phenomenon turns out in large measure to include processes that are not available to consciousness, we need to characterise this understanding first. This is why I use the term *ontology* of knowing. In seeking to describe the reality of the other-than-conscious aspects of knowing, this articulation identifies additional *content* to knowing. We will next need to understand how to integrate and act upon such knowings, which will separately constitute, in my understanding and usage, an *epistemology* of knowing, that is outlined in chapter 8. To restate the manner in which I am using these two terms: I am using ‘ontology of knowing’ to refer to (our model or theory of) what constitutes the *content* of knowing – *what it might be about*. I am using ‘epistemology of knowing’ to refer to what constitutes the process of knowing – *how does it operate?*

Hodgson (2015) has developed a conceptual model to describe exactly how this enactive knowing is instantiated, called the Anticipatory Present Moment (APM), and this is recapitulated here in brief (note that the quotations below are unpaginated because I had access to a pre-publication draft, and the final work is not yet in the public domain).

In developing the APM, Hodgson has researched and synthesized a vast universe of fundamental ideas in Western philosophy, systems thinking and futures thinking. It would be impossible to retrace this exploration in anything less than a book-length text; only the bare bones of the final synthesis are presented here. This necessarily means that the richness of ideas and processes signified by the terms used in this model cannot be communicated to the reader, who is advised to refer to the original work for this purpose.

Hodgson (2015) draws on Poli’s (2011) idea of the thin and the thick present moment: “The idea is gaining acceptance that the present has both some duration and some

depth and therefore a rich multifarious complex series of structures”. He quotes an example from Husserl to illustrate this:

“For example, if we are listening to the sound of a clarinet lasting seven seconds we hear it as a continuous duration. When we get halfway through to the fourth second the sound of the first second is no longer audible. In terms of our experience, however, it is still a component of the present tone that we are hearing. Also, the recent past is fed forward into the auditory signal and anticipates the perception of a temporally continuous time-object (i.e. sound that endures). Husserl pointed out that the experience of the earlier part of the sound in our experience is not the same as a memory of that sound. It has a certain immediacy that is not a qualitative property of a memory that we heard previously a clarinet sound. Husserl made a distinction between retentions of experience and memories. He also introduced the notion of protention as a horizon of a temporally extended present. ...The idea of a knife-edge present, a thin instant, is abandoned. Retentions are qualitatively different from memory reproductions in that they are all part of the current consciousness of the present. Protentions are the emergent proximate future distinguished from fantasied futures” (2015).

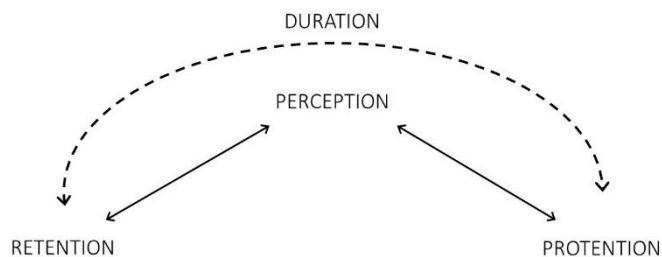


Figure 5.1 Husserl’s Present (reproduced from Hodgson, 2015)

Although Hodgson (2015) has sourced some of his ideas from the philosophy of Husserl (1964), Bennett (1966), and several other influences, his emergent theory is entirely consistent with the idea of enactive cognition, and serves our purpose of

understanding the inner dynamic of the process, as will be seen once his model is described. He develops the idea of the *Anticipatory Present Moment* systematically:

“In the ordinary way, experience is of that which is now being actualised, namely the content of the present moment with its traces of the past and expectations of the future. Within the personal present moment, freedom is limited by the commitments of the past and latent patterns of potential. These have the effect of turning the present moment into a conditioned state in which the self has little power of choice. It is, however, possible to transcend this conditioning by abandoning attachment to the current content of the present moment and thereby entering a larger present moment with more degrees of freedom.

The future exists, but it does not exist within a small conditioned ‘thin’ present moment. It exists in a greater ‘thick’ present moment. Our future is not yet now for us, but it is already present. We cannot say that the future is “in” the future in a linear sense. What we can say is that an event that will occur in our future is already present in a larger present moment”. (Hodgson, 2015).

Now, the theory of enactive cognition talks about instantaneous moment-to-moment structural changes, and we saw that these are highly complex responses that may not be available to conscious knowing or control (see Levine with Frederick, 1997; Levine, 2005). However, we also saw that it is a tendency of the conscious mind in the modern West to pattern things in terms of templates of linear time, causality, continuity, and so on (see 4.1 and 9.2). When these templates or frameworks are redefined, other perceptions become possible. Such a redefinition of many accepted notions is underway in Hodgson’s model, beginning with the idea of time.

Apart from the phenomenology of time experience (a), Hodgson draws on five further conceptual models: (b) the ontology of the present moment; (c) boundary critique; (d) the nature of anticipatory systems; (e) the nature of cognition; and (f) the scenic stance. While some of these are simple, and the relationship in some cases logically cumulative, the APM concept has more to it than simply the addition of these six factors. Each component idea or model questions ideas that underpin axiomatic foundations of our currently dominant Western model of reality, so it is helpful initially to consider them each in turn and then see how they are interrelated and incorporated in the model.

Building on the idea of duration in time, Hodgson draws on Poli (2011) to establish that, outside of linear clock time, the idea of the present can be seen as a “rich multifarious complex series of structures” rather than as a “knife-edge between the past and the future” (2015, 113). In saying this, Hodgson is attributing to a sense of time two simultaneous dimensions: that of measurement as in physics, as well as a phenomenological dimension in terms of the *experience of duration*. This experience, according to him, can include six dimensions: namely, traces and memories; interacting commitments (to multiple systems we may be a part of, relevant in a given situation); passive forms (ideas and concepts that may tacitly relate to the context but have not been invoked to conscious mind); active patterns (ideas and concepts we are consciously deploying into the situation); expectations and hopes; and, finally, capacity for creative decisions. This is the idea of the ontology of the present moment (b).

We have discussed (c) boundary critique at some length in §4.6. Conceptually, the APM is bracketed in a notional boundary shown as a circle. This represents the boundary of both the system in question and the scope of the present moment of the reflexive aspect of the system. The notion of boundary critique is extended from the boundary of system space to include timespan in all its six dimensions of experience in the present moment. The line is dotted to symbolise that the present moment system boundary is permeable and subject to the judgement of the reflexive agent at the heart of the system. Apart from loosely delimiting a container for the idea of the APM, boundary critique makes its presence felt in the very act of knitting and synthesizing this model from six component idea frames: as stated, each of these involves the reframing of conventional notions of the nature of reality, which is boundary critique in practice. Further, the synthesis offers a model that is highly conducive to supporting a reflective, second-order practice of science.

Regarding the basic nature of anticipatory systems (d), Hodgson expands from Rosen’s (1985) definition and Poli’s (2011) work to say:

“Treating anticipation as a fundamental distinguishing quality of living entities from material entities, it is necessary in systems terms to go beyond the basic concept of feedback. A feedback loop will feed into the present of a system, information regarding past relationships of the system which clearly can be of value in adjusting its present behaviour. But if the only information feeding

back into the system is from the past then it does not sufficiently meet the criteria for an explanation of anticipation. It is necessary that the system is able to adapt its behaviour including also information from the future. The simple term Rosen used for this is ‘feedforward’.

Of course, this raises the question as to how can information from the future be acquired by the system in question. There are two ways of approaching this. The usual one, which in some way bows to the domination of reductionist science and a unilinear view of time, is that an anticipatory system contains a predictive model of itself and its environment which enables it to make choices which are not entirely based on past information. In scenario planning circles this is referred to as “memory of the future”, as put forward by the neuroscientist David Ingvar. The unusual one, which I wish to explore further in my research, is that in some sense aspects of the future already exist and therefore an anticipatory system might also have the capacity to pick up information regarding the future which is neither inferential nor based on a predictive model. Clearly there are issues around how far prediction is itself adequate in a world of complexity which exhibits unpredictable emergent properties” (Hodgson, 2015).

Hodgson (2013b, 2015) refers to a form of generating information about the future where the dimensional energy of the present moment opens the possibility of authentic retro-causality. However, this is not the idea of the universe as a pre-programmed clockwork toy, where the future exists in the sense of its predetermined inevitability, which can somehow be seen in the present through a kind of extra-sensory perception. Rather, Hodgson’s viewpoint is based on Bennett’s (1966) notion that there are more dimensions or determining conditions than simply chronological time and the normal perception of space. Retro-causality becomes creatively available from two sources. First, identifiable patterns underlie how some phenomena unfold: the attention to or sensing of timeless, ageless patterns is a dimensionality of time he refers to as *aionios*. Second, another dimensionality to the experience of time is the idea of its pregnant possibility for the creative emergence of the completely new, which is called *hyparxis* (ableness-to-be, manifestation, realised being, capacity to subsist). These two additional perceptions of time stand in contrast to the conventional chronological time – *chronos* (Hodgson, 2013b, 30).

Our discussion of cognition (e) in terms of the enactive model has not really considered the basis of the choices for change that the organism makes while in structural coupling with its environment. Necessarily, there is an issue of anticipation of the future involved here: the change is made towards viable existence in the future environment, not purely in response to the present or extension of the past. Hodgson states this as a paradox: “the important distinction here is that anticipation needs the capacity to *imagine the unimaginable and see the invisible*. Entertaining multiple representations of a possible reality that has not yet happened is one way a system can become anticipatory” (2015, italics added). Ideas related to availability and accession of information about the ‘future’ can be found in §5.2.6, and chapters 7 and 9 of this thesis.

Extending these ideas, Hodgson (2015) talks about the critical importance of *reperception*. To some extent, this depends on adopting a scenaric stance (Ogilvy, 2011). This means the

“...entertaining of multiple, simultaneous scenarios of the future that may be contradictory (for example, pessimistic and optimistic) and leaving room for the unknown and the creative. This frame of mind also clearly is consistent with opening to anomaly and contradiction which can support anticipation. To practice this we need a capacity to embrace permanent ambiguity and to put our confidence in acting in the present but with a greatly enriched multi-dimensional experience of the present moment” (Hodgson, 2015).

In sum, the characteristics of the APM model include:

- Multiple futures, not necessarily compatible, held in the consciousness of the present;
- Openness in that consciousness to the presence of choice and creative action;
- Capacity of the mind to be firm in its embrace of this openness and complexity; and
- The implications of responsibility for choice in relation to the unfolding future.

We are now in a position to appreciate the APM, depicted in Figure 5.2 below.

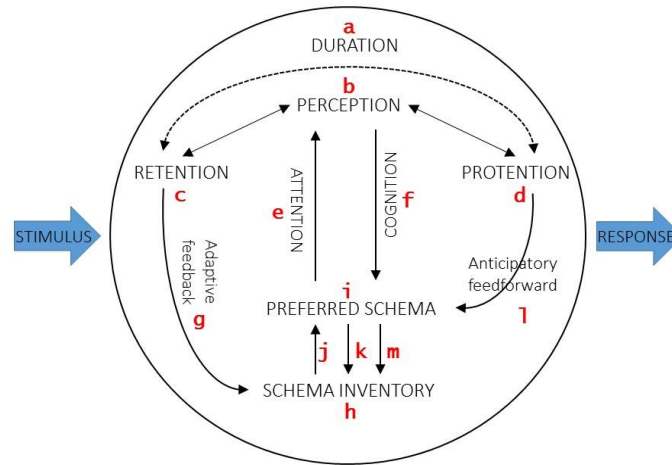


Figure 5.2 The Anticipatory Present Moment (reproduced from Hodgson, 2015)

In the following paragraphs, I have retained the explanation of the terms from Hodgson (2015), except for a few minor changes, while omitting some interspersed details and discussions that are not critical to our study. The APM is a model of

“...the experience of duration (a) which depends on the attention (e) and cognition (f) of the reflexive subject. Duration is the experience of the present as having more to it than simply the knife-edge instant between the past and the future. Attention (e) is the capacity to direct and sustain interest in the present event... Cognition (f) is the capacity to configure and interpret the experience... Perception (b) is the engagement in the experience by a conscious self. Retention (c) is the presence in experience of temporally recent aspects of the currently ongoing event; this is not the same as the reproduction of the experience in memory. Protention (d) is the counterpart to retention in the experience of anticipation of the currently ongoing event; it is not the same as the imagination of a future... Adaptive feedback (g) is the capacity of the experiencing conscious self to take heed of and adjust behaviour to what is occurring within their present moment” (Hodgson, 2015).

Anticipatory feedforward (l) is based on the anticipatory notions of *aionios* and *hyparxis*. In addition to these cognitive processes, he emphasizes

“...the presence of a capacity for re-perception. Any reflexive mind has a repertoire or inventory of schema or mental models that inform behaviour at

different levels. Schema inventory is the repertoire of cognitive interpretations that are available to the conscious self. These schemas cannot be understood as equivalent to blueprints within the mind that are in some way implemented. The situation is far more dynamic and plastic than that” (ibid.).

Hodgson views cognition as neither wholly schematic nor wholly inactive but some hybrid of the two: “In the APM diagram, this is represented by the relationship between the schema inventory (h) and the privileged schema (i) which is in action, selected as appropriate”. Privileged schema are the automatically or consciously selected schema that are dominant in the current interpretation.

“In behaviour which is principally adaptive, the privileged schema will be part of an existing historical repertoire which may well be applied in a novel way but essentially remain based on past experience. In anticipatory behaviour, the privileged schema may emerge from a shock factor, which has invalidated the current repertoire as ill-fitting and inappropriate. There can also be internalised forms of anticipatory re-perception that emerge from a more intuitive source. This can be observed externally in fields from competitive sport to entrepreneurship. A player in a ballgame may have an uncanny capacity to be ahead of the game in just the right spot to make winning moves. An entrepreneur may have a hunch that something unbelievable will work against all conventional wisdom revealing a confident capacity in opportunity overlooked or dismissed by others.

So in terms of the APM diagram the pathway (g) -> (j) represents adaptive behaviour that determines attention (e) and perception (b); the pathway cognition (f) -> (k) represents the mainstream of choosing how to look at the situation; the pathway of anticipatory feedforward (l) -> (m) represents the way additional degrees of freedom become available to the APM. (m) is the enrichment of the schema inventory by the learning brought about by anticipatory feedforward which would not occur reliant on only adaptive feedback” (ibid.).

The link between the APM and enactive cognition can now be established. The adaptive mechanism in the APM corresponds to the representationist models of the cognitive sciences. On the other hand, the anticipatory mechanism corresponds to the enactive approach. Although the Santiago School appears to reject the representationist

model as incorrect and postulates cognition as wholly enactive, it might be more accurate to say that enactivity provides a more fine-grained view; but representationism is not a wholly inaccurate view when applied to certain levels/modes of functionality – it too can approximately model human cognitive activity in some circumstances. Modelling of the world based on first order science, as well as much propositional thinking, for example, can well fit a representationist explanation, although, as Latour (1991) has pointed out, this does not obtain in reality as a ‘pure’ modality, since the enactive process is always operational below our radar of consciousness. (Given our nature of social communication through language, the representative modality is also functioning nearly all the time). I bring up this point here since the link between these modes of knowing, and the methods to develop awareness of the enactive cognition (or anticipatory mechanism), follow from understanding the value and place of these various models to systemic practice.

After all, the APM model as a cognitive tool also remains first-order science. It is certain practices of reflective awareness resting on this understanding, which will enable its transformation into second-order science.

5.3. Intelligence underlies emergent phenomena

Finally, a third fundamental idea that it is necessary to pay attention to is the question of ‘purpose’.

In applied systems thinking, there is no doubt that any endeavour, whether termed an inquiry or an intervention, has purpose(s). Midgley, for example, treats this as the one element amongst three minimal criteria he suggests for characterising systemic efforts; referring to it as ‘action for improvement’ (2000, 130-2). Now, leaving aside the debates about where the agency for action may or should be located amongst the human actors in a situation, let us consider another aspect of systemic reality arising from whatever we have understood about sentient beings in the two preceding sections of this chapter.

I assume that the reader is broadly accepting of my arguments about the nature of reality in the two aspects of systems we have explored so far: interconnectedness and enaction. What do these phenomena tell us about purpose? If there is a manner of informational field that connects all things instantaneously, then every action and

change in any part results in a seemingly infinite cascade of changes across the whole system leading to new overall configurations and predispositions.

This is precisely where systems thinking scores over nonsystemic approaches, since it exhorts the sweeping into consideration of all identifiable ripple effects across as many systemically linked elements as feasible and necessary (although comprehensiveness can only remain an ideal). Still, this does not tell the full picture, because we have to evaluate the meaning of interconnection in relation to the next property, enactment. We have seen that we may usefully consider human efforts in terms of two cognitive models, which can be seen as simultaneously in play. One is a representationist mode that generates responses based on past experience and its construction into models of the world (or its elements); both the realist (neo-positivist) and idealist (phenomenological) approaches essentially fall within this frame. The other mode, which we are mostly unaware of, and is therefore less amenable to our conscious use, is the enactive response.

For convenience, let us for the moment think of the second mode in terms of the unconscious in psychology, somewhat in the wider sense of the dimensions that Jung (1916) describes. We do know that there can be unconscious drives and purposes that steer our responses and actions, sometimes with no conscious awareness on our part, sometimes with a dim and vague foreboding that we collude with, for want of a better way to manage ourselves. On the other hand, there are times when we deliberately try to awaken and tap this dimension to generate creative responses for a situation; at other times, we find responses emerging from the unconscious without deliberate effort. Clearly, when we consider the range of such enactive or anticipative behaviour, it follows logically that the unconscious must operate through some process of information selection and decision making towards its response. Where is this agency located? Is it entirely within the boundaries of the human organism? The discussions in the last section in this chapter show that there are several mysteries involved here, including the sourcing of information about the future, of which we are unaware. Information, such as that concerning the future, it appears, can be sourced in ways that cannot be known to the organism even in its unconscious memory. I will discuss, in chapter 7, methods that enable such accession of information beyond the conventionally held notions of the boundaries of the human mind. (This is the reason why I stated in §4.10 that the key pragmatic challenge for systems thinking is in terms

of methods that empower us to better realise systemic knowing). For now, the question arises: can we restrict ourselves to a model of agency in Systemic Intervention that is held by one sentient being, or shared amongst a few?

There appears to be compelling evidence from multiple sources that life proceeds by some form of teleological process. I for one am open to such an idea and like to picture that process, purpose or direction as one large wave, within which our own egoistic strivings and actions play out as smaller ripples. Let us examine some of the sources of the idea of a universal teleology for life on Earth.

The earliest expressions of such ideas can be traced to animistic beliefs; the idea of a vital force and ideas such as *telos* in Kant's philosophy (the word itself means goal; and there is now some agreement among scholars of his work that he saw the reason for morality as grounded in man's higher purpose – see Tillman, n.d.) and *entelechy* in both Aristotlean thinking (as latent potential that is to be realised, see Wattles, 2006) and the early physics of energy (as the ultimate reality of material beings in virtue of their inner self-determined activity, see Wattles, 2006). In early systems thinking, Bertalanffy (1956) reviews Driesch's (1914) argument for vitalism in the principle of equifinality, issues of entropy and increased organisation, and information and feedback in cybernetics, to argue that causality as conceived by mechanistic science cannot explain the range of aspects that involve teleology and directiveness in living organisms: adaptiveness, purposiveness, goal-seeking and the like (Bertalanffy, 1956).

Sri Aurobindo's (1957) integral vision of human psychology also traced an arc of the evolution of human consciousness into the future. While these early intimations were informed by some study of evolution or psychology, they remained speculative and philosophical in nature. In 1959, Tielhard de Chardin, an evolutionary biologist and theologian, speculated about the nature of evolution in relation to the growth of consciousness and postulated that there seems to be a pattern like an arc of increasing consciousness, through and within the evolution of lifeforms.

Recently, there is increasing confirmation of such possibilities from studies in the fields of quantum physics (Bohm's, 1980, idea that an implicate order drives the direction of movement in the explicate world); mathematics (the idea of syntropy from Fantappiè: see Vannini, 2009; Corpo & Vannini, 2009, 2010); in futures studies (Hodgson, 2013b); and chaos theory (the idea of attractors; see Prigogine & Stengers,

1984), and in various eclectic studies that provide a panoramic sweep over the emergent frontiers of the sciences, such as Capra's (1996) *Web of Life* and Laszlo's (2007) *Akashic Field*.

Speaking of Laszlo's idea of the information field, let us review his theory, and the concept of enactive cognition (together, this is the ground covered in the first two sections of this chapter) in this light. Although Laszlo talks about interconnectedness as being informed by an all-pervading intelligence, he does not explicitly talk about the location of purpose, or the mechanism through which such intelligence informs actions and changes in the constituent units of the overall system, such as each human being's life. (Capra, on the other hand, in the conception of the web of life, refers to a planetary autopoietic system – 1996, 208-211). Enactive cognition talks about the organism and the environment responding to stimuli (perturbations) from one another through coupled changes in structure, where the purpose is to maintain viability and identity, although the details of the mechanism is unspecified. It is difficult to say that agency is located entirely within the organism in such a model.

While early ideas about teleology referred to some metaphysical or innate source of purpose or direction, Mayr's (1974) definition of the new term 'teleonomy', for processes that owe their goal directedness to some program, has found better acceptance amongst adherents of science. Although Mayr's own position and that of most supporters veers towards a causal and mechanistic interpretation, there is nevertheless room for imagination to speculate on what might be the sources of information or intelligence that must feed into the program for the emergence of goal choices (see Mayr, 1974, and Thompson, 1987).

It appears that a variety of speculative explanations about purpose informs these inquiries from various domains, leaving room for further clarity and understanding. However, what may be safely concluded from all of these explorations is that to assume that agency in the form of rational, conscious human striving can control and manage all our endeavours and their outcomes falls short of meeting the complex dimensions of reality as we are now beginning to fathom them. Clearly, there is sense in conceding a high possibility of a larger teleonomy informing processes in a world of which we are a miniscule component part. A lucid communication of the logicity of this insight is effectively communicated by Torbert (1991, 219-238) in terms of the

certainty of the inadequacy of our knowledge in the ongoing present moment, and *the experiential testing by which each one of us can verify this for ourselves.*

In fact, ultimately, this is the simple ground where all this exploration must begin and end: our own experience. This, however, is not to embrace a naïve interpretivist or phenomenological view (of pure subjectivism) in toto; we will be exploring and unpacking the knowing process in chapter 8, where we consider several approaches to making sense from our experience, over and above either the narrow rationality of the modern, scientific outlook, or a purely subjectivist stance. What is more, for those who have experienced inquiring through such approaches, it becomes possible to evolve a personal model of being in the world with inquiry about the nature of things that is enabling of making decisions and action choices in a manner not fraught with constant doubt and uncertainty about correctness and effectiveness. Such conduct becomes part of the enactive chain in a satisfying way and engenders a substantive sense of being, so that the feeling of being divided, fragmented and separated from the unfolding whole is considerably mitigated. *(Paradox and irony –such agency and centeredness is afforded only through relinquishing the desire for full knowledge and control).* We need to – and can – progress from systemic ‘thinking’ to systemic ‘being and doing’. *Paradigms of ‘Inquiry’ and ‘Intervention’, with their malodour of exclusive, instrumental, Western, white, male, anthropocentric atomised control-seeking egoistic agency, must now urgently be replaced with a paradigm of immersive systemic knowing that is automatically inclusive, generative, human, androgynous, non-anthropocentric: an enlivening being-in-the-world, celebrative of the diversity of the human race and the world, with all of its life forms, other forms, and processes.*

5.3.1 Purposing in Systemic Intervention

Midgley has defined intervention as “purposeful action for improvement” (2000, 128). In elaborating his vision of systemic intervention, he further describes how these purposes are determined in actual situations: they may not necessarily be articulated as a complete set at the beginning, but could evolve as “events unfold and understandings of the situation develop” (ibid, 226). We need to recognise – as serious practitioners often do – that purposes are determined through and in engagement in a complex, evolving situation, and are not always or necessarily deliberate and conscious. If we take this practical wisdom and insight of practitioners into account in our theory of engagement, and allow for the joint shaping of purpose, we must recognise that (at

least in part), this may be melded, fused or aligned across the system at levels not accessible to conscious interrogation. Ironically, this very relaxing of an attempt at full conscious control will, when deployed within certain methods (chapter 7), often generate a deep alignment and sense of shared purpose that infuses the effort at improvement with great confidence, vigour and potency, resulting in quantum improvements of a lasting nature.

5.3.2 The Intentionality Paradox and an Ontology of Learning

The complexity of purposing and alignment of purposes results in what I call the intentionality paradox. The world is more likely to respond in ways that match our intentions if we do not seek complete conscious control and do not act as if we can direct all things towards our purpose through the application of rational logic. This call for suspension of conscious control and purposing is not a call for abandoning directed effort or responsibility. *It is a call for action from a heightened state of awareness, one that includes our conscious and rational modalities but also includes other ways of knowing; an acceptance of our smaller place within a larger mysterious whole.* This approach corresponds to such ideas as critical subjectivity (Heron & Reason, 1997) and “consciousness in the midst of action” (Torbert, 1991). Such an awareness of our perspective – its authentic value and its restricting bias – echoes Torbert’s (1987) “refraining mind”, Bateson’s (1972) “Learning III” and other similar ideas in the literature.

We may now characterise this aspect as an *ontology of learning*: the reality and paradoxical aspects of the process of human learning. For when we pit our rational, logical thinking and intents against the purpose and movement of the larger cosmic system, then we are not truly learning in the sense of ensuring the mutual viability of both. How we may align our purposes with the larger evolutionary systemic purpose – and how we can know that we are doing this – is considered in chapter 7.

5.3.3 The Ego Paradox and an Ontology of Doing

Another paradox involved here is what I would call the *paradox of the modern ego*. This is related to a true understanding of freedom and creativity. Mainstream Western thinking has misunderstood how both of these desirable qualities can be achieved. To my mind, a large part of the reason for this is its disavowal of the universe of being-

abiding; the ego is all about striving. Attempting to find freedom and creativity solely at the level of individual egoistic striving has led to problems related to comprehending and managing relationships of the individual to larger wholes s/he is a part of. Freedom and creativity, seen as a property of individuals, is then regulated solely by external frames of law and order, resulting in such outcomes as the current absurd situation of excessive monitoring and universal spying by Western corporations and governments on their own citizens. The nature of the relationship of the individual to the larger whole can be understood in terms of the paradoxes and conundrums of *achieving a dynamic balance between autonomy and collaboration, within a holarchic knowing of the world*. When this is achieved not merely intellectually or rationally, but as a deep felt sense of one's place in the world, the potential value of systemic knowing is unleashed. This offers a true sense of unity (overcoming all feelings of dualism which lie at the root of the narcissistic pursuit of notions of individual freedom), a true ability to dynamically dance in deep social and cultural mediation of human knowing and in joint actions with others; and finally, exercise true individual freedom (not requiring elaborate legal policing) in the natural exercise of agency which does not damage the larger world because it does not feel the angst of separation from it.

Lest the reader imagine this is a utopian description, let me add that, while I am describing an ideal, it is one that has been frequently experienced in the practice of several postconceptual approaches that are described in the next chapter. The aspect of knowing that derives from practice and not from mere intellectualization may be characterised as *the ontology of action or ontology of doing*. In §5.1.3, we discussed the idea of *Du-kham*, or unhappiness, as constriction of inner space. The lingering conscious 'image' (the entirety of memories, preferences, prejudices) from a past moment that is summoned – *asmita* – produce a distortion of the present reality, and create the constriction; on the other hand, allowing the innate intelligence to harness the appropriate information and inform non-egoistic action in the present, produces freedom: an ability to flow freely in the here and now. An understanding of suffering, related to the poor recognition of the tensions and conundrums inherent in the entangled and mutually implicated dimensions of reality, affords the emergence of the shadow side or negative features of wrongful practices. These conjectures are summarised in **Table 5.1**.

Table 5.1 Key ideas to consider for a systemic ontology

DIMENSION and GOAL	SYSTEMIC PERSPECTIVE	PRINCIPAL FEATURE and potential value	SOURCE OF TENSION	SHADOW ASPECT
Political: inclusion of margins	Interconnectedness – an ontology of being. The paradox of separation	Holarchy (nested hierarchy): sense of unity with the whole.	Domination, oppression	Fascism
Epistemic: theory corresponding to the systemic ontology	Enactive cognition – an ontology of cognition. The action paradox and the language paradox.	Collaboration: Deep social and cultural mediation of human knowing; joint action.	Uncertainty or lack of dependability of all knowing.	Herdism
Pragmatic: overcoming current weaknesses in methods to tackle global problems	Teleonomy – an ontology of learning and an ontology of doing. The intentionality paradox and the ego paradox.	Autonomy: true agency for individuals that does not damage the larger world.	How to achieve social cooperation.	Narcissism

5.4 Conclusion

In this chapter, I have proposed three elements that are fairly central to a systemic ontology: the interconnectedness of all things that is informed by a Deep Intelligence Field (DIF); the co-constructive nature of knowing which can be represented by the Anticipatory Present Moment; and finally, the teleonomic principle in operation in the world, which, in turn, is informed by the deep intelligence field and plays out through the co-constructive nature of our interaction with the world. Conventionally, these kinds of ideas are treated as metaphysical, not to be entertained in scientific or rational thinking, according to first order science. However, systemists have begun to contend with the deeply paradoxical and entangled nature of reality, where the material and the spiritual do not seem to be two distinct and separate realms. As these spookier aspects of the reality of the world are unravelled by science at the frontiers of atomic physics, or quantum biology, or cosmic physics; how are we to contend with such dimensions on a *day-to-day lived basis*, and how are we *to operate* based on such considerations? The answers to such questions are considered in the following chapters.

CHAPTER SIX

Introducing Innovative Knowing Methods from Other Disciplines

6.1 Introduction

In this chapter, I will describe four methods that I have studied, amongst numerous ones that have been discovered and formulated over the ages, which help access other ways of knowing. More importantly, as I see it, these four methods access the deep intelligence field and/or systemic interconnectedness, and thus produce aligned change towards improvement of an unusual order of magnitude. (Hereafter, I shall only refer to the deep intelligence field but that would also imply systemic interconnectedness). The four methods to be described here are the *Process Explorations of the Sumedhas Academy for Human Context*, India (see www.sumedhas.org for extensive resources); the *Cooperative Inquiry* form of action research from the UK (Heron, 1996); the *Action Inquiry* frame from the USA (Torbert, 1987, 1991, 2015); and *Holotropic Breathwork* originating in Czechoslovakia (Grof, 1988; Grof & Grof, 2010). The first three are forms of action research in a broad sense; the last is an approach to healing, usually applied to individuals seeking alleviation from distress.

The healing method may appear at first sight to be unrelated to the domains of practice that are commonly addressed by applied systems thinking – the fields of operational research, management sciences and community development. However, as argued in this chapter at §6.1.5, it is in the nature of the deep intelligence field to produce healing and growth, and this is true for groups of people as much as it is for individuals. Seen from that perspective, there are two ways to conceptualise the link between the healing methods and the domains of systems thinking.

One, holotropic breathwork is deployed not in dyadic one-to-one contexts but to groups of people, and therefore, in my opinion, perfectly compatible with deployment in organisational or systemic settings – although this is not reported in the literature. (Such deployment is in a restricted sense: most of the holotropic breathwork within group contexts is usually transacted in dyadic arrangements. Nevertheless, the

relevance of such methods to group work of the organisational / systemic sort - briefly stated below - will be expanded later).

Two, these methods, like thousands of others from the domains of art, crafts and cultural and spiritual practices, can easily be included in the repertoire of systems thinking. All it needs is recognition that accessing the deep intelligence field and allowing its expression through us is fundamental to bringing improvement in the human situation.

My selection of this particular set of four methods has to do with my own familiarity, through either personal practice or literature study, which enables an explication of their correspondence with the ontological and epistemological imperatives of systems thinking. cooperative inquiry and action inquiry are sophisticated approaches to improvement in conventional contexts of the sort that systemists deal with; however, both rely on a radical approach to gaining knowledge of the situation and thus embrace a post-conceptual (see §6.3.2 later in this chapter) approach. Implicit in both of them is the skill and knack for obtaining such knowings. The Sumedhian process explorations and holotropic breathwork approaches lay bare and make explicit the mechanics of such knowing that surpass rational knowing. In highlighting two examples for each sort of application, I wish to demonstrate that each of these methods is by no means unique or unusual; indeed, they rest on wisdom approaches that are commonly sprinkled across human cultures and civilizations and have only been lost to modern, rational man.

A note of caution and a ‘disclaimer’ of sorts is required before proceeding to the descriptions. The caution is that these methods refer to approaches that go beyond the propositional to encounters related to emotions, ‘felt sense’ (see §6.2) and ‘sense-of-being’ [RR] existential questions. They are related to deep psychological and existential realities, which are often experienced as powerful, quixotic, paradoxical and highly disquieting. These are therefore not realms of inquiry normally ventured into by persons accustomed to the modern, rational outlook on life. Necessarily, the journey into such inquiry commences when there is a failure of the conventional outlook to provide an adequate foundation/ground to come to terms with some life experience. For those who have never experienced such a provocation or at least some kind of evocation (pull) to explore beyond, the descriptions that follow may perhaps appear strange. In that case, they will be unable to summon or elicit a resonance with the

quality, tonality and reality of my narrative. For such readers, the effort in this writing is directed to providing some glimpse, evocation and beckoning to hearken to the call for such exploration and a deeper embrace of the vital significance of being human.

The ‘disclaimer’ is that the preceding caution should not raise excessive expectations of what follows. Each of the methods here merit a whole book (in fact, some are referenced to multiple sources). What follows, therefore, is a highly condensed and selective description of facets that reveal the manner in which the puzzling systemic realities described in the preceding chapter can be directly experienced, and harnessed for harmonious and effective human action. One key issue to keep in mind while reading the descriptions that follow, is that the classifications and other ‘content’ descriptions refer to transient and progressive ‘process’ outcomes, and it is worthwhile to consider the simultaneity of these aspects rather than be stuck with the polarities or distributive dimensions alone. (Since content descriptions necessarily highlight one aspect or element, we see multiple content as separate elements; yet, as we saw in chapter 5, reality is paradoxical in that these elements are all part of the same, shifting reality). In practice, these methods make possible the simultaneous experience of seemingly opposed felt senses or relationships to reality, such as a simultaneous sense of power and vulnerability, or simultaneous opposition to and identification with some ‘thing’.

6.2. The Process explorations at Sumedhas

6.2.1 History and background of process work in India

The Sumedhas Academy was formed in 1996, and represents the third generation of organisations in India exploring human behaviour through group work. Formal work in this area commenced in India in the 1950s, based on Western traditions, and focused on the organisational context. Representing the Human Relations stream of the American school (Kurt Lewin’s work, see 1947a,b; 1948), the Indian Society for Applied Behavioural Sciences was formally registered in 1972 (although founded earlier). The creation of the Indian Society for Individual and Social Development (ISISD) in 1978, a second contemporary sub-stream as it were, represented a major step towards integrating the ancient tradition from Indian schools of *Sankhya* and Yoga thought with the Western group process approach, drawing on a larger base including European traditions (Banerjee, 1997).

Sumedhas continued the arc of this exploration in the ISISD paradigm. As Banerjee, a former ISISD member and co-founder in Sumedhas, and thus a key figure for the past four decades, observes:

“...there are two clear streams contributing to Process Work in India, the Eastern tradition centred on enquiry and self-discovery leading to new definitions of man and his reality, and, the Western tradition of using knowledge and insight of the social sciences and applying them to enhance the functioning of individuals, groups, communities and organisations. The two streams are neither inimical nor exclusive. The contribution of each is highly significant. I believe the different schools active today are distinguished by the relative focus they give to these two streams of Influence, that they are in their own ways, sustaining each other Is quite certain” (Banerjee, 1997).

Banerjee explains the Indian perspective and usage of the term ‘human process work’:

“Process Work is a tripodal body of knowledge, philosophy and praxis aimed at enhancing the well-being of individuals and their collectivities simultaneously, it is characterised by the use of groups, man’s inherent need to enquire into his condition and existence and is firmly committed to action for learning that will lead to further action. The three legs of the tripod are: Self-reflexivity, groups, and commitment to action for learning.

The purpose of process work is to create space for a visit to the inner world of human existence and phenomena with a view to taking one step closer to the truth. The truth not as an objective entity lying “somewhere” but the truth as it lies within each of us that keeps us human in spite of much that is destructive, undignifying and demeaning. The truth as in the truth of the human spirit and its infinite resilience, creativity and its magic, the very magic that keeps turning pathos into creation, cacophony into music, indifference to love, and human to divine. Here there is no need to conquer or overcome but to recognise, acknowledge and take the next step, individually and together” (1997).

Today, Sumedhas sees its approach as a work-in-process and values its diverse and eclectic sources. It has successfully navigated a leadership transition from the original founders to a new generation, elaborated its credo and approach, built diverse

modalities for offering exploratory avenues by developing a sophisticated meshwork of roles and processes, and is continuously engaged in self-reflexive explorations that renew its vibrancy and relevance.

A giant contributor to this domain of practice was Pulin Garg, who brought in the concept of returning to what he termed the “experienced reality” rather than being governed by the “constructed reality” (Banerjee, 1997). This is in keeping with the discussions in earlier chapters about primary meaning (§4.6.4) and the deep intelligence field (§5.1, 5.2, 7.7).

6.2.2 *Sumedhas Perspectives and Stances*

A key milestone in the institutional maturation of Sumedhas is the renewed articulation in 2012 of what the institution is and how it functions. This is expressed in the form of a statement of its ‘perspectives and stances’. One keystone in this articulation is the use of the term ‘*dharma*’, rather than Goals or Purposes, to describe its intentional stance. This puts the focus on an affirmation of a chosen way to be rather than an outcome (paths laid down in the walking, to borrow Maturana & Varela’s, 1987, expression). The idea of *dharma* has been translated into English as –

“...that which holds, receives, regenerates: that which is standing [sic] is enlivened; that which is falling it reinstates; that which is fallen it regenerates.

Dharma means acting in the following ways: (includes several other actions at various levels, some of them are) nourish and enliven that which is wholesome; enable and empower that which is dysfunctional to discover functionality; and to that which is disconnected and fragmented to reconnect and find inclusion; heal that which is hurt.

Dharmic action is expression and relatedness that arise simultaneously out of the ground of ones being” (Sumedhas, 2012).

There are several levels of *dharma* – one’s own personal *dharma*, that of intimate groups, that of role-playing, that of a human being, and that of a cosmic being. Building on this foundation, the *dharma* of a Sumedhas member, the nature of its expression, the forces and contexts that it will encounter, and the *dharma-sankatas* (unresolvable conundrums) that can arise from an affirmative commitment to and practice of a *dharma*, are explicated. The nature of the unresolvable cycle and its inherent dilemma for a Sumedhas member, or Sumedhavin, is expressed as: “A

Sumedhavin will experience the pull of being fully received and embraced without judgement in one's rawness and vulnerability in Sumedhas and will simultaneously experience the push or the demand of transcending oneself' (ibid). The fostering of a space that upholds an invitation to enter this cycle repeatedly, is Sumedhas's *raison d'etre*, as articulated in Sumedhas (2012). Additionally, this document explores and makes tentative statements that express an evolving view about the nature of transitions and memberships in the Sumedhas spaces; and further discusses aspects of diversity and inclusion-exclusion, with an elaborate statement about its stance on marginalisation and minority identities. There is a description of processes in the inherent and fraught relationship between the two universes of the individual's narcissistic needs and hurts as against the universe of connections across the collective unconscious (ibid.). This expression of Sumedhas's *dharma* fits in with the purpose of Indian process work.

Among the changes organically established over time are group processes that provide a secure, nourishing space rather than a neutral and objective space, and modalities that are invitational more than confrontational. Emerging spontaneously and organically in concordance with this is increasing reliance on non-verbal modes of exploration, as the sophisticated use of words or jargon related to behaviour and its sources often obfuscates: words may not necessarily lead to penetrative understanding, insight or change, but rather assist in developing elaborate mental ruses and rationalisations. Nonverbal explorations, such as the use of yoga, theatre work, or work with symbols, yield spontaneous expressions of the concealed inner realities, conflicts, paradoxes, and conundrums in the here and now space. Such expression is difficult to refute in its authenticity and immediacy: it proves to be an arresting revelation; and provides a basis to explore what has hitherto been unexplored.

Thus, two of the active principles that inform the group explorations involve working in the 'here and now' context of one's feelings and thoughts, rather than memories or constructs carried from the past; and seeking to be in touch with one's inner universe of 'being' in terms of the existential tonalities of the psyche, rather than one's universe of external behaviour and struggles in the role spaces one occupies. (These aspects of being and becoming are linked; however, this approach privileges the exploration of this link in terms of owning up to one's existential issues rather than by problem solving in role related issues).

A disavowal of finalities, of a final ‘truth’, of a parametric set of rules that can produce a world as we wish it to be; and at the same time a refusal to be drawn into a nihilistic or narcissistic response to this lack of a fixed ground or compass for navigating life, are the departures this approach indicates. As Banerjee says,

“For as long as history will tell man has devised different ways, with varying degrees of efficacy, to do just this. To visit the inner realms of the mind at an individual and at the collective level. Process work is a later day innovation with the possibility for more people to visit the inner world, together and with a new discipline.

Having revoked the classical ‘scientific’ approach of being ‘objective’ students of the subjective world the process worker, is as much a recipient of his process work as those that become members in the groups where he works. He is as much ‘in process’ as the ‘participant’. It is perhaps his surrender to the human processes and his undying spirit to rise and learn from it that makes him human.

Perhaps man has reached that threshold where the ‘pragmatic’ and the ‘imaginative’ can come together to weave a pattern that is closer to the ‘as is’ world rather than keep creating ‘as if’ worlds and crown himself the conqueror.

Perhaps process work is one of the new-borns that, in struggling to find and create its own identity will strike a blow for this move of man. Perhaps the ambivalence and the diffuseness is an invitation for process workers to find ways to the at-one-ment with the secrets and mysteries of human existence. Not for the sake of knowing but for the sake of being at one with the universe.

...Process work it seems to me is that outsider, that body of insights which takes upon itself to study the world of man as it is, to arrive at a world that ‘ought to be’ rather than evaluate the present reality with old frames permeated with parametric assumptions, in the full knowledge that the world it conceives too may go into disorder. Remaining engaged with the process of the study, of the evocation, of the action is process work. Perhaps that is where it is headed” (1997).

Having attempted to understand Sumedhas’s philosophy, we shall next consider the means to its pragmatic realization. A significant part of the work of Sumedhas is accomplished through group processes, and I will now outline some techniques. After

that, I will describe a specific offering that I have considerable familiarity with, having worked with it in over a dozen situations.

6.2.3 Methods

Sumedhas group spaces are invitational: there is no coercion. At the same time, the facilitators create a pull towards sharing of personal data and reflections on the group processes, by setting examples. After some preliminaries to set boundaries, clarify modalities and attend to administrative aspects, the group work begins. Typically, the groups sit on the floor (as is customary in Eastern traditions), in a circle. There may be some simple ritual to invite people into the space of exploration and to affirm commitments. Often a start is made from what has drawn people to enter the group, what concerns have they brought with them, and how they feel at this moment of entry. A strong focus is on adhering to here and now data. I may wish to recall a specific trauma that I want to review / work with using the group support; importance is accorded to the (residual) thoughts and feelings that are alive and emergent in me in this moment, rather than the data (accuracy of recall) of what happened in the past. Many a times, people are unable to access this level of currently emergent thoughts and feelings with clarity. Pre-formulated, previously processed ideas and expressions, and clichéd and socially acceptable expressions, can substitute for the real current evocations. The separation of these two, and bringing alive the connection with the latter, is supported through a variety of means. Recourse is often made to specific exploratory exercises and activities, which involve use of body movement, expression through voice, movement, art or sculpting, yoga, meditation, dream exploration, exploration of the world of symbols, work in pairs or small groups, and so on. This follows a specific design for each particular programme offered. There is a cycling between exploratory work that surfaces evocations and spontaneous thought, reflection and consideration of these articulations (considered ‘live data’ in Sumedhian process explorations terms), and reflection on the dynamics and processes of participation in the group. With some degree of skilled facilitation and genuine self-reflexivity among the facilitating members, this cycling leads to a deepening of exploration, touching the areas of real hurt and unmet needs that lie in each member’s psyche. This includes not only the individual pathos and angst but also the component of collective feelings that each person carries. Usually, such aspects are triggered and connected with by the second day, but it may take a day or two more for the group to establish a comfort and

rhythm about staying with the pain of such exposure and revelations; and for exploring ways of working with and through it. The fear and terror of bringing such aspects up for conscious examination triggers defensive tendencies that seek to subvert such exploration; this can assume sophisticated external behavioural forms. This is where the process skills of the facilitating team are needed to support the members to stay with the discomfort and the exploration, to own up to pulls toward disruption (which can manifest in group dynamics of collusive acts towards denial, turning away, or otherwise subverting), and wait for something to emerge.

It must be noted that unresolved matters usually have an element of contradiction or paradox in them. In something that has hurt us or left some needs unmet, there is that aspect which has disappointed but also another aspect that binds and attracts us to an element or person that has caused this feeling; otherwise, there would not be a sense of hurt. Likewise, that which we feel unable to accept, and thus cast as the “other” (hence the target of our dislike or other negative sentiment), corresponds to a latent or unexpressed part of ourselves that we are ashamed or otherwise unwilling to own up to for some reason: perhaps, it is held in shame or guilt, or in normative ideological frames of unacceptability, or has never been awakened. Herein, therefore, lies the answer to the resolution of some of these aspects and the release of energies and positive feelings of hope and optimism to reengage with one’s life. (Of course, there are many problems and dilemmas in the world that are too vast to reconcile with in any manner: the continued persistence of war or hunger cannot be resolved in this group work; yet the shared evocation of these deeply felt human responses to our limitations, vulnerabilities and ignorance – individual and collective – goes some way towards replenishing the vibrancy of living, and produces change within the individuals/groups involved in such practices).

I am amazed at how often the group mysteriously converges on one or two issues that seem to hold importance for many members – it is almost as if some pull (‘attractor’?) has serendipitously brought together this particular set of persons into this specific exploratory space. The unfolding process also holds a great capacity for magic and mystery: the sheer willingness to enter such a *witnessing state* invariably leads to spontaneous emergence of deep creative insights, or actions in the group, which generate a higher level of consciousness to co-hold the simultaneity in the contradictions and the paradoxes that were hitherto unresolvable. This is akin to

mindful alertness and other modes of accessing the deep intelligence field (see next §6.2.4).

These methods may be better illustrated through a description of my experiences and some vignettes. I have been a participant, a co-facilitator, and subsequently a facilitator, at over a dozen labs in one of Sumedhas's programme offerings, called Learning Theatre. (This offering has been developed and offered by Raghu Ananthanarayanan, who has pioneered theoretical work on identity and role-taking processes in the Indian cultural context, a legacy extended by several followers of Pulin Garg. The programmes I facilitated were outside of Sumedhas space and offered under other titles; they have differed in some design respects, but essentially followed the same principles).

6.2.4 An example and testimonies: Theatre-based process explorations

The idea of applying aspects of theatre to inquiry in the behavioural domain is not new. A range of approaches has gained legitimacy in the context of psychotherapy, social oppression and political empowerment (Boal, 1979; Elsass, 1992). In the organisational context, the understanding and application is often limited to role-play – doing a 'pretend you are the CEO of a company....' kind of role assay to simulate the behavioural demands and coping levels for typical situations. In contrast, in Raghu's Learning Theatre, we have blended and improvised from psychodrama (Stanislavsky, 1989) and from the nature of preparatory work involved in actor training – drawing from both a specific Indian folk theatre tradition (*therukoothu*) and a variety of globally accepted techniques.

A programme is typically a residential one lasting four and a half days, in a suitable ambience where other distractions are minimised. It may involve up to 25 participants and 2-4 facilitators, including persons with experience in theatre training and other arts.

Typically, an early exercise that might get the programme into a rhythm of focusing on the body and senses might be what we call the 'space walk'. The participants are asked to keep walking continuously in a specific delimited space – preferably outdoors, or in a sufficiently large hall. Initially, the focus is on staying attuned to one's own movement and rhythm. The rules are simple: focus your sight on the medium distance, avoid eye contact with others and bumping into other people or any obstacles, and turn

away on reaching a boundary in the space and continue walking in another direction. Participants are asked to use a comfortable, normal pace, remain aware of their breathing and stay attuned to their own body movements and rhythm, and, if it is outdoors, to listen to all the sounds in the environment. (The design combines principles of yoga with theatre exercise). This activity may be kept up for 20-30 minutes, and at some stage, further instructions will be added. There are countless improvisations – it depends on the purposes in that context to which the activity is being addressed. Typically, the brief given is that participants continue to walk as instructed and to comply with the new instructions as they are added. For example, the pace of walking may be varied, by stepped degrees or randomly. The space limits may be redefined to make it more crowded or expanded. Sometimes, participants are asked to imagine a variety of purposes for the walk – rushing to collect the child from the nursery when it is already late; walking on a beach, running to catch a bus, attending a funeral, climbing a steep hill, etc. Sometimes, they may be asked to shift from being unfocused (remember, the visual focus has been kept vague and in the medium gaze until now); they are asked to focus on one specific small point/element/object and walk purposively towards examining it, then turn around at the boundary, quickly and randomly seek another point to fix the gaze, and then continue in that manner). This may gradually be segued into the group being now allowed to cognize one another: at first, for some minutes, to allow fleeting neutral glances when they cross one another; next, to allow a stopping and exchange of neutral eye contact for some moments (no other expression or communication is permitted) before resuming in one's chosen direction. The exercise could also be segued into any one of several other theatre exercises that are compatible to such progression, again depending on the design purpose.

What such an initial activity does is to produce the relaxation of the grip of strongly held mental patterns that inform our day-to-day existence. Ideally, a participant should feel slightly tired and numbed, yet simultaneously exhilarated – this is not unlike the mental zone one enters when a certain physical activity or game breaks the initial barriers of the body's normal load of effort and then shifts gear into a reflex mode – usually not activated by us consciously (although practised athletes, players and other users of the body learn to switch it on consciously on demand). The underlying theme of this adjustment is “now we are in it for a longer haul and need to calibrate the effort for optimality” – it is a complex mind-body pattern reconfiguration. Rhythms of

breathing and muscle work are established that are uniform and comfortable, the mind relaxes into a mode where all other distractions and worries are laid aside but a slightly elevated level of alertness to the internal and external environment is established in relation to a focus on the specific effort underway. Of course, the various improvisations described will add other layers and patinas of experience to this. The relaxation of the grip of multiple templates at various levels of our cognitive system – from rational frames of processing information and making choices and decisions, to the templates that govern our usual calibration of sensory inputs (such as a linear sense of time), to reconnecting with the substratum of spontaneous emotional and instinctual responsiveness, is useful to the initiation into this Learning Theatre sort of group exploration.

Another activity that is commenced early in the programme, and sustained and developed into its later stages, is an introduction to the alphabets of theatre work: voice exercises, body movement, facial expressions, and gestures – in terms of a range of emotions. All of these are designed simply to establish a comfort with the body and its expressive capabilities – to exercise these ‘muscles’ which can often lay dormant for long periods in conventional life circumstances. For example, voice training might call on participants to learn progressively complex sequences of notes – starting with single ones – Do Re Mi, to combinations – Do So Do, onto some simple melodies. This may have been preceded by an exercise in simply learning to control the voice – its pitch, timbre and body (volume). A single note may be worked on – sustaining pitch, lengthening time and/or increasing volume. One exercise I love is one we call the voice tree. The participant imagines that s/he is a tiny seed that is growing slowly into a vast tree. S/he is expected to start from a sitting or crouched position (body totally compacted), and slowly, slowly, unfold, arise, spread limbs out, all accompanied by increasing the volume level of a simple sound – an aah or ooooh, repeatedly expressed. In graduated steps, the voice expression is continued, each rendering lasting a comfortable ten to fifteen seconds, in consonance with the unfolding body movement, punctuated by a short few seconds for intake of breath in between. The whole exercise must be stretched out for at least 10 minutes. The final crescendo, when all the participants are hitting the highest note and stretching their limbs out fully to the sky, invariably involves an incredible sense of lightening oneself – of seemingly having divested oneself of many reflexively self-imposed constrictions and disciplines that accrue from the demands of everyday life, of awakening deep spaces and parts of one’s

body, and of having transcended somehow - gone beyond somewhere, into a completely, unexpectedly, new sense of self. Each of our senses has a certain primal quality associated with its experience at a core level, which is deadened in the routinized contemporary existence. Seldom can we find opportunity to experience the pleasure of screaming fully, in a primal manner. This awakens a whole universe of forgotten inner space, and simultaneously forges a new unspoken compact amongst the group participants. It also begins to lend a certain quality of sharpness, clarity, resonance and safe containment to the space (room) that will provide the container for the experiences that will unfold in the group over the next few days.

Among the multitude of actor preparation exercises that can be invoked and deployed, one key, pivotal exercise type is ‘mirroring’. *This term denotes a principle encompassing a far-reaching and fundamental understanding about information sharing amongst people, and covers a vast array of exercises.* So, several of these variants are introduced or mixed into activities throughout the programme, and in some ways, we might say mirroring represents a core strand of experience that illuminates the new learning at the heart of this programme. (I previously referred to the use of mirroring in another context of negotiation at §4.7.5; see also, Coutu & Misino, 2002).

In one simple variant, the participants are teamed into pairs. The pairs face one another, and the brief is simple: one of the pair begins to move in an improvised manner, sort of a freestyle slow dance. The other member of the dyad must copy these movements – like a mirror, since they face one another, there will be a lateral inversion with the left hand of the follower imitating the right hand of the leader. After some time, the pair exchanges roles, the leader becomes the follower and vice-versa. A variant of this exercise, which has the potential to nearly always surprise with the sudden raw intensities it can release in participants, is called ‘giving and receiving energy’. In this, the participants face one another, and do not touch one another throughout the activity. One of the pair will begin by assuming the role of ‘giver’, and roles are switched after a suitable interval. The brief is provided and the facilitators, typically, will make a demonstration. The pair has to stay in constant eye contact throughout the exercise. The ‘giver of energy’ quite naturally tends to sway over the ‘receiver’, and the receiver will be backing away and down; there will be a coordinated slow dance of sorts. Interestingly, while the use of the term ‘energy’ is meant to

convey an apolitical status to the activity and the two roles, the exercise invariably results in an unconscious slip into some internally assumed or encoded stances of power, authority, status, dominance or control; so deep are the social encodings about how people orient to one another in an encounter. A silent, experimental, exploratory encounter not obviously loaded with a brief about establishment of any sort of hierarchical relationship results (in most cases and with very few exceptions), in some deep atavistic reproduction of such encodings. In nearly every programme, this can lead to startling evocation of power, aggression, fear or terror for at least one participant resulting in a snap (breakdown) of some sort. *Suddenly, there is a tear in the fabric of our rules of civil behaviour and the masks across which we dance this. The elephant has manifested in the room. Often, facilitation has to engage with healing this tear in the fabric; this sudden glimpse of a vast subterranean lode of aggression or fear, with an acceptance and coming to terms without seeking to dispel, suppress or discount it; while at the same time to diminish and/or come to terms with the shock and awe aspect of “I have met the enemy, and it is in me”.*

Sumedhian process work within the learning theatre consists of being able to observe, gain insight into, embrace (own up) and finally reintegrate the energies that rise to our consciousness through this “tear in the fabric”. This utilizes principles of intensifying or abating emotions by applying the principles from folk theatre and yoga, or using self-reflective exploration through drawing, creating mandalas, etc. An excellent aphorism handed down by Pulin Garg that reflects the principles of Indian process work are – to “act the withheld, own the disowned, see the invisible and articulate the unarticulated”.

This description should suffice to point to the nature of the explorations that can be generated with the actor’s knowing and skills, which are, roughly: *Knowing* that we are barely aware of the deep emotive and instinctual processes that guide and control our behavioural repertoire, as much as we are only partly aware of the cognitive templates through which we process our meanings and choices. *Skill* lies in continuously experimenting with and interrogating that territory between the raw sensory input and evocations that one receives and the multiplicity of templates and frames which could guide or impede an expression of response to the input. Anybody who has watched serious theatre knows there is a clear, lucid realisation of spontaneity that is the hallmark of a good performance. Even a very miniscule and momentary

lapse in spontaneity renders the evocation in the audience incomplete and the experience inauthentic. What to a lay watcher seems finely flowing ‘spontaneous’ performance is a creative flow that has been developed through a rigour of parsing and interrogating the choreography with a deep reflexivity to the very process of that emergent expressivity.

I have suddenly been referring to creativity and flow. Before I explain what I wish to indicate by these terms, let me describe one final type of exercise, through two examples. These illuminate a certain dimension to the ideas of flow and creativity, and are the final link in the chain that will help us close the circle to understand how such theatre technology corresponds to the several paradoxes of reality and the four systemic ontologies we have discussed in Chapter 6; and therefore, how its application to behavioural exploration becomes valid and valuable.

An exercise that I would like to describe at this stage is one we simply call ‘impulse’. It is usually carried out late at night, post dinner, when there is a hushed magic in the air amongst the quietness, starlight, and the muted night sounds of nature. Participants are formed into groups of maybe 5 to 7 persons, and asked to go into a huddle, like rugby: standing in a circle, heads together, the two hands on each neighbours shoulders. They are asked to focus, stay silent, and tune into the silence and the calm. The brief provided is that, having achieved a quietude, if (and when) any member experiences the spontaneous emergence of an impulse, they must simply surrender to that impulse and act on it. Typical impulses may be to yield to a voice or sound emerging from within and give it outward expression, or to move in some way, or respond to some sound or stimulus from the environment: maybe there was a birdcall or insect chirp that suddenly exerted a pull. When the group is able to follow these commands – a highly unusual brief that may make no sense in our normal modern world, but using a new language and reality to which by degrees the workshop has slowly acculturated this group, an unusual result emerges.

The moment a person follows a genuine impulse, there is a spontaneous identification and mimicking of her/his actions by all the remaining members – a completely unthinking, reflexive coordinated group wide activity that may well carry on for many minutes. I have never failed to be wonder struck by this powerful outcome that I have witnessed repeatedly: my favourite memory of it is from the time I was first introduced to this activity as a participant. I had an impulse to simply run, as zestfully and

fleetfully as possible, not toward or away from anything but just to experience the sheer exhilaration of running, as a child might, until that call was satisfied – perhaps my run lasted 3 or 4 minutes. I did not realise it during my wild run, but when I finally stopped, I found the entire group around me: they had simply run right behind me.

Let me describe another activity. I was first introduced to this during an actual theatre preparatory workshop amongst a group of actors in 2003. Let us call it ‘role call’. The brief is simple – each member in the group simply assumes any random spot to stand on in the room – some maybe facing in, some out, some may have much of the room or other members in sight, some only an outward view. Maybe they were doing the space walk – the first exercise described in this section, and were suddenly instructed to freeze. (Sometimes, the exercise is conducted with the members blindfolded). The brief goes like this. The group members must call out numbers sequentially ...one, two, and so on, each spoken aloud by one member, until each has called out once. There is to be no planning or coordination. Once the signal to start is given, anyone can begin the count. Each next number has to be called within three seconds. If three seconds elapse without number calling; or else two members simultaneously speak, the exercise is rewound and repeated from the start.

Interestingly, with a group that is serious in its exploration (I have seen groups with up to 30 members), there may be several false starts. However, each time the exercise proceeds in a new order; members, listening to the inner silence and prompted by impulse, rarely assume previously strategized positions in this little bit of theatre. Sure enough, in a few rounds, often about five or six, the group is able to complete the activity successfully. In a few instances, when they have wished, they have repeated this success one or two consecutive times further. Of course, there are instances where the group never succeeds.

There are numerous variants of this sort of experience. A solo game I play with coin tosses and with number combinations on say, locks, is one where I randomly pick an outcome in advance and achieve it successfully on tossing or spinning, with far greater felicity than the rules of probability allow. I have amused myself at airport lounges by picking on some stranger whose back was to me, at distances of up to 20 feet, and silently sent an impulse message saying, “turn around to look at menow”.

Nearly invariably, I obtain the desired response. My experience with all of these is that *when there is a complete surrender of all conscious effort, or artifice, and an aliveness*

to the magic of the emergent, a strange alignment is produced, where such impulses invariably succeed, provided that they do not clash with any level of dharma (i.e., they are not dis-enlivening at any level or selfish in any manner). Thus, entering the flow of the deep intelligence field, or, to put it another way, invoking the consciousness of abiding in full measure, results in an unleashing of creative intuition.

In my description of a sample of theatre activities, I have been selective: this is not representative of a whole range of other sorts of theatre-based techniques (some more complex than these) that are brought into play in the programme. My purpose has been to provide a glimpse of how such non-verbal exploration proceeds, and to illuminate some of the strange realities that emerge and principles that appear to be at play within individuals and groups, when normal modes of conscious *striving* are surrendered and exploration of the mode of *abiding* is taken up.

I have deliberately refrained from describing the process theory and modalities employed by Sumedhas: this is not possible here nor relevant to our purposes. I just wished to show how we use this ‘compost’ of the hurt and debris accumulated in everyday consciousness, surfaced by a purposeful journey into other modes of consciousness, to procure the ‘manure’ of realization: that this accumulation is the essence of the shared human condition, and simultaneously the source of fragmentation and suffering, as well as the very source of creative replenishment and meaning. Nevertheless, I must mention a breakthrough of far-reaching significance recently incorporated in the Sumedhas approach to process work since 2011. This is the deliberate curtailment of the sharing and dialogue in the cliniquing sessions between the facilitators to ‘here and now’ data, eschewing recall/analysis of the group sessions and recourse to theory. (Another significant element that has been incorporated is the use of feedback from the existential universe mapper profiling (see §3.4.1) in specific offerings. Overall, at multiple levels, the Sumedhas approach considerably transcends the simplistic theory and methods of group work developed in the West).

What can we learn from these outcomes? Such accession of information of a sort that cannot be explained by other means (including information of long past events, future outcomes, and data pertaining to complete strangers), is a rather familiar repeated experience in several domains (see discussions in §5.1). Take theatre itself. Many theatre artistes I have interacted with have confirmed the routine and repeated

encounter with such experiences and shared their own anecdotes. The literature is rife with examples: here is one:

“In January 2006, I was improvising with another clown in response to a story we’d been told from the real life of a woman who’d been knocked off her bicycle by a silver car while she was cycling in London. We walked on stage (with no plan) and laid down on the ground to become the tarmac road, and then I became the bicycle, my partner became the silver car and eventually she crashed into me. I moved in slow motion, and as I reeled, I accidentally knocked over a large wooden candlestick which had been standing on the stage draped in a white cloth. I heard the candlestick fall and turned to see what had happened. I looked down at it. I looked up at the audience.

The audience looked at the candlestick. I couldn’t ignore the accident and what ran through my head was ‘this is a dead body. If this is a dead body then who am I because I was the woman coming off the bike and she’s clearly alive because she’s in the audience. I don’t want to say she’s dead. So, whose is this dead body?’

My mistake, of course, was not to transgress the scene, break the rules, move to a metalevel and say all these thoughts out loud as a clown. I looked to my clowning partner as she came over to see what had happened. The improvisation went on and the moment was lost. At the end, during the feedback, I explained everything about how I’d seen the candlestick as a small dead body, and that I hadn’t felt able to name this. The woman whose story it was asked to speak. ‘Yes, that would have been my dead brother. He was killed 47 years ago when he was one and a half years old. He was knocked down by a silver car as well. Sorry, I forgot to tell you’.

We work the material we have at hand” (Seeley & Reason, 2008, 42, emphasis added).

Thus, in these kinds of explorations, the group members experience two new realities: one is the sense of flow and unity within themselves in terms of discovering a spontaneous expression (with the eschewal of deliberation) in the moment of action. (Deliberation can precede an activity: a small skit or role-play exploration may be permitted a few minutes of preparatory thinking; however, the emphasis is on spontaneous evocation and expression in the actual enactment). The second is a similar

sense of unity and flow with the external environment – nature, the music or beat to which they may dance, or the group with whom they are performing a synchronised exploration such as impulse or role call. This is what Seeley and Reason have to say about the creative response to evocation in such a practice of the performing arts:

“Accidents are the lifeblood of improvisational clowning. Vivian says ‘you don’t have to do anything. Something will happen. It always does’. And when it does, the nature and response to the accident is very often highly congruent with the unfolding story” (in Seeley & Reason, 2008, 42)

In enacting, arises a whole Universe of Knowing inside a moment of improvisation.

6.2.5 Systemic ontology and Human Process Inquiry: Connecting theory and experience

The reader may have recognised, in the discussion of such happenings and unconventional revelation of information, the confirmation of the idea of the deep intelligence field, what I termed the ontology of being. I am trying to make the point that the *idea* of the interconnectedness of all things, which is probably best envisaged as the deep intelligence field (– a largely accepted tenet in systemic thinking arising from findings in physics and other sciences) – is simply that: *a conceptual, cognitive artifact*. However, in the explorations such as the applied theatre that we have examined here, we access it in a *direct experiential manner*. If there was not some deep connection between me and all the other people present in a group that is experimenting with ‘role call’, of a sort that we do not presently understand much about, what can explain the rather frequent success of this activity? (An involvement of minute non-verbal sensory communication is ruled out, since these results obtain equally using blindfolds).

We might also explore what theatre activity can tell us about the other systemic ontologies and paradoxes described in the last Chapter. For most participants of such a programme as ‘Learning Theatre’, the outcome is a significant leap in understanding about themselves and their relationships with the world. Thus, in my *action* to explore my own behavioural propensities and internal realities that mediate the world I bring forth in and through my interactions, I clearly learn far more than in my *thinking* about my behaviours. This reinforces the truth of the action paradox.

We may see language in a new light now: apart from the use of words, there is probably a learnt, familiar ring about various non-verbal elements of our everyday actions, another sort of language. In exploring our expressional dimensions, we are set free of the trap of this other rehearsed language. The point about language – that by privileging the reconfirmation of previously established categories of knowing and data, it becomes a trap against realising the new in later experiences – was made in the last chapter. Rational thinking reinforces this trap; but techniques have been developed across cultures to address this issue. The answer lies in shifting the focus of our conscious awareness to that interface between the new sensory input and the perceptive-cognitive activity of its imprint: as can be seen, explorations such as Learning Theatre help rediscover a more spontaneous language of self-expressivity and thereby, a realization of deeper knowings: the very aspect Abram (1996) argues modern humanity must recover.

This process (the awareness of the interface in the preceding sentence) is parsed and explained conceptually in Chapter 7 with a Ways of Knowing framework. At this point, I wish only to mention that techniques in the various classical performing arts, in craftsmanship, yoga, in meditative practices such as *Vipassana*, in various healing practices such as *Ayurveda* (we review one called holotropic breathwork in §6.5), and several cultural practices amongst many peoples, notably the hunter-gatherers – all of them share a common ground *in returning attention to its source and replenishing the possibility of making fresh meaning and discovering newness in experience*. I refer to all of these collectively as the *wisdom approaches*.

In shifting the focus of our intentionality from any conscious striving to paying attention to silence and the arising of impulse, we realise the truth of the intentionality paradox. Learning comes from letting go, and there is often an abundance of knowing that is reaped through explorations in the Sumedhas programmes and other wisdom approaches. We understand alignment with larger purposes (other levels of *dharma* than the personal one) in a new, experiential light through these explorations and the adoption of such wisdom practices. An alignment with groups (as the experiences of applied theatre we just visited), alignment with nature, with larger human collectives, and with the cosmos are all accomplished through proven and time-tested means in several of the wisdom practices.

In the early stages of exploring any of these wisdom practices – even in the simple act of signing up for a workshop at Sumedhas or a holotropic breathwork programme – there is already a letting go and relinquishing of rational frames in a willingness to encounter another form of consciousness. In the first experience in such a new space, our conventional frames and ways of responding to the perturbations from the environment are bound to fail us: we are in a foreign land, and necessarily have taken a leap of faith, surrendering our normal grip of rational control for a led adventure. This kind of initiative is *an essential first step towards discovering a larger systemic knowing*. It involves the embrace of the possibility of new ways of doing, and arises from listening to an evocation, or responding to the provocation when our normal modes of dealing with life having failed us. This is therefore a practice of boundary critique, but not of the rational-analytic kind; hence, we may call these methods ‘systems doing’, and I continue through the rest of my thesis to establish the importance of complementing *Systems Thinking* with a corresponding *Systemic Being, Doing and Cognizing*.

Let us now consider three more methods – widely differing in source of origin and addressing somewhat varied outcomes – yet, sharing common ground in the principles described here. Hence, I cluster them together (along with others not discussed) under the rubric of wisdom practices.

6.3 Cooperative Inquiry

6.3.1 Origin and principles

Co-operative inquiry (CI) was pioneered by John Heron in the late 1960s, and he has provided a robust and detailed account in his 1996 book. It is a participatory research method based on his work in 1968-69 on the social gaze (1996, 1; also see Heron, 1970, 1992; Heron & Reason, 1997; Reason, 1988a; Reason & Rowan, 1981).

As with the other methods described here, Heron sees in cooperative inquiry an approach to living; a basic of relational and participative spiritual practice. He notes that “it has overlaps with one form of feminist research (Olesen, 1994), Appreciative Inquiry, Participatory Action Research and action science (esp. Torbert’s action inquiry detailed later in this Chapter)” (1996, 7-9). Against Lincoln and Guba’s (1985) four paradigms of research (positivism, post-positivism, critical theory et al, and

constructivism), cooperative inquiry rests on a *fifth* inquiry paradigm, that of participative reality:

“This holds that there is a given cosmos in which the mind creates, and which it can only know in terms of its constructs, whether affective, imaginal, conceptual or practical. We know through this active *participation* of mind that we are in touch with what is other, but only as articulated by all our mental sensibilities. Reality is always subjective-objective: our own constructs clothe a felt participation in what is present. Worlds and people are what we meet, but the meeting is shaped by our own terms of reference” (Heron, 1996, 10-11).

As he indicates, the *participative paradigm* has a long-standing precursor in the thesis of the interpenetration of the knower and the known, in ancient civilizations as well as both early and contemporary Western philosophy. It has two wings – the epistemic and the political. I shall dwell in some detail on Heron’s explicitly articulated philosophy, since among the four methods I have selected for highlighting in this chapter, this is the only one that has covered such extensive theoretical ground. It is interesting that this is so: perhaps it is a result of the combination of its being a rare method that balances an inquiry into internal realities with a focus on external reality and outcomes (action inquiry is one other method with this balance; the other two methods here focus more on the internal realities of being). Given Heron’s strong background in psychology and, thus, an ability to reflect powerfully on the internal aspects, that realm of inquiry has been elaborated into sophisticated theory and practice. It is also a measure of the man that he allowed nearly three decades of gestation before elaborating his theories in the form of books. Heron (1996) elaborates his theory of cooperative inquiry in terms of two wings - the epistemic and the political.

The *epistemic* wing, concerned with *truth-values*, is characterised by an explicit ontology, epistemology and methods. The reference in the quotation above to four types of mental constructs (affective, imaginal, conceptual and practical) is detailed in a framework of participatory knowing that I shall refer to as the ‘Four Ways of Knowing’ framework – this is described and enlarged in Chapter 7). According to Heron,

“...’true’ is applied not just to propositions but to the forms of expression of the other cognitive modes. So we can speak of true encounters, true presentational

portrayals, true actions, as well as true statements. Valid knowledge, whether experiential, presentational, propositional or practical, is knowledge whose form of expression is true, in the sense that it articulates reality. We can't call these four modes forms of *knowing*, without at the same time acknowledging their relationship with *truth*" (1996, 163).

Participative knowing has five corollaries:

A first corollary is that "knowers can only be knowers when known by other knowers. Knowing is mutual awakening, mutual participative awareness" (1996, 14).

A second corollary is the "distinction between explicit and tacit knowledge. To participate in anything explicitly is to participate in everything tacitly. The whole is thus implicit in the part". (Heron cites references for this holonomic principle in sources ranging from Buddhist logic, theoretical physics and biophysics to philosophy, - see 1996, 14).

A third corollary is the "distinction between participative knowing and alienated non-participative knowing in which the knower conceptually splits subject from object" (1996, 14).

A fourth corollary is the "idea of three stages of integration" (1996, 15). Heron puts forth a detailed model of personal psychology in *Feeling and Personhood*. This considers four psychological modes, akin to the four ways of knowing framework described in Chapter 8; and involves a stage theory of maturation, involving eight stages. For our purposes, this model can be seen as paralleling, in a very broad sense, the existential universe mapper model described in Chapter 2, although no neat correspondence can be drawn between the stages or the theories of the maturational processes. What is similar, though, is the idea of a principle of entelechy – an inner drive to unfold latent growth potential. This refers to Heron's idea about the maturation of a person as proceeding through successive stages of greater integration across the individuating and participative poles of the four modes. For details, see Heron (1992).

The fifth corollary is holism of inquiry, in which "the researchers' conclusions and applications are grounded in their own participative knowing" (1996, 16).

The *political wing*, concerned with being-values, is informed by an axiology that treats human flourishing as intrinsically worthwhile. This means that:

“a) It is valuable as an end in itself. It is construed as a process of social participation in which there is a mutually enabling balance, within and between people, of autonomy, co-operation and hierarchy. It is conceived as interdependent with the flourishing of the planetary ecosystem.

b) What is valuable as a means to this end is participative decision-making, which enables people to be involved in the making of decisions, in every social context, which affect their flourishing in any way” (1996, 11-12).

It too has five corollaries:

One corollary here is the “asymmetrical interdependence between thought and action”. As he puts it, “Action in the form of reshaping our worlds – economically, technologically, ecologically, aesthetically, politically, socially – is the end of thought, thought is not the end of action; this is the basic asymmetry” (1996, 16).

A second corollary is “that of universal political rights. The universal version comes to the fore when every social situation of decision taking is regarded as political. Then we have the all-pervasive right of persons to participate in any decision-making that affects the fulfilment of their needs and interests, the expression of their preferences and values” (1996, 16). This bears comparison with Ulrich’s (1983) view that rational boundary setting must involve dialogue with the involved and affected, except that Ulrich reaches this conclusion because he equates rationality with the use of socially shared language, while Heron privileges action over both language and rationality.

A third corollary is that “action manifests personal value or the suppression of it” (1996, 17). This is similar to Midgley’s (2000) definition of ethics as “values in action”.

A fourth corollary is “that autonomous preference precedes authentic cooperative choice” (1996, 17).

A fifth corollary is “about research subjects’ political rights. Every human subject in a piece of social science research has a right to participate actively, directly or through representation, in decisions about the research design” (1996, 17). It is worth noting that Heron & Reason were using the term ‘participant’ instead of ‘subject’ several decades before this language became the norm in mainstream psychology (Midgley,

2015). Interestingly, in my postgraduate course³, we were not referred to as students but as participants in the programme, and treated accordingly.

6.3.2 Methods

Heron refers to *six overarching features* that are defining of his cooperative inquiry approach: involvement of all the subjects as co-researchers in all decisions – about both the contents and methods of research; an intentional interplay between experience/action and sense-making/reflection; attention to validity procedures; application of an extended epistemology; a range of special skills attendant on these features; and the deployment of the full range of human sensibilities as an instrument of inquiry.

Cooperative inquiry can be applied to a whole range of situations and can generate a variety of outcomes, described in the next section. Appropriately, there is a range of inquiry types or modalities. Inquiries may be initiated internally or externally – where externally initiated, if the initiating researchers do not share the domain of practice that the inquiry is about, they are unable to participate in the experience/ action phases completely. It is, in such a case, regarded as a partial cooperative inquiry rather than a full inquiry. In inquiries that focus on practice within a given social role, all the researchers may share an identical role (all doctors or all lawyers), or have equal roles (spouses, partners, colleagues) or may be drawn from different kinds of roles. Then, action phases can involve joint work within shared settings, or be conducted separately by each of the researchers. Some kinds of research may involve only the members of organisational or practice domains and thus be set within a closed boundary; others may include the remit of studying their interactions with the larger world. One circle of inquiry consists of four stages:

Stage 1 is the first reflection phase when the inquirers choose the focus/topic of the inquiry and discuss its type in terms of some of the parameters described earlier; articulate the inquiry topic in the form of a launching statement; decide a plan of action

³ In rural management at the famed institute IRMA at Anand, India set up by Dr. Verghese Kurien of the 'white revolution' fame.

for the first action phase to explore some aspect of the inquiry topic; and agree on a method of recording experiences during the first action phase (Heron, 1996).

Stage 2 is the first action phase when the inquirers are exploring, in experience and action, some aspect of the inquiry topic; applying an integrated range of inquiry skills; and keeping records of the experiential data generated (Heron, 1996).

Stage 3 is described as a full immersion in stage 2 with great openness to experience; the inquirers may break through into new awareness; or simply lose their way; or else the breakthrough may be so profound as to transcend the inquiry format (Heron, 1996).

In Stage 4, the second reflection phase; the inquirers share and make sense of data from the action phase and accordingly review and modify the inquiry topic; choose a plan for the second action phase to explore the same or a different aspect of the inquiry topic; and review the method of recording data used in the first action phase and amend it for use in the second (Heron, 1996).

There is extensive guidance for each of the elements described in these terse phrases – for example, Stage 2 might read like any action research beginner’s guide; however, ‘integrated range of inquiry skills’ and ‘keeping records’ have radical meanings that the theory explains at great length, with reference to the skills and techniques for attending to the extended epistemology. The rigour implied in such careful exposition of the attendant theory can be seen from the following brief quotation about the validity of this method:

“I think that the outcomes of a co-operative inquiry are valid if they are well-grounded in the forms of knowing which support them. And I believe that the forms of knowing are valid if they are well-grounded in the procedures adopted to free them from distortion, and in the special skills involved in the knowing process. The validity of each form of knowing also depends on how sound it is in the light of standards internal to it, of autonomous criteria at its own level.

So, for example, when practice is a valid outcome, it is well-grounded on propositional knowing by being evaluated in terms of a range of verbally stated criteria of sound practice. These include executive, technical, psychosocial, intentionality and value criteria... And a valid practice is one that is sound by its own internal standard, which is having the knack, an inherent knowing of the excellence of its doing.

I take the view that validity itself, concern with the justification of truth-values, is interdependent with that which transcends it, the celebration of being-values, of what is intrinsically worthwhile in our experience” (1996, 57-58).

(The term ‘knack’ refers to one element in a suite of skills for radical perception and radical practice. This is covered in Chapter 7 in the elaboration of an extended epistemology, wherein truth-values and being-values are also explored further).

These four stages complete one full cycle from reflection to action to reflection; and may be repeated many times, with such divergences or convergences as the group decides, and brought to an overall closure with a suitable recording of outcomes.

The entire inquiry can be seen as a braid woven of three strands – the inquiry strand, relating to cognitive and methodological empowerment; the collaboration strand, related to participative decision-making and political empowerment; and the emotional strand, related to the climate in which emotional states can be identified (emotional and interpersonal empowerment). These ideas resonate with my own formulation – see discussions at §6.3 and Table 6.1)

Heron takes care to spell out certain key aspects of the inquiry process, which represent a major challenge to its initiators. These relate to facets of our immersion in the larger culture, such as aspects of the modern Western society that we could all be blind to; making it very possible to collude with a group not wanting to know about them (see Heron, 1996, 66). In particular, he notes that:

“One important thing ...is having some skill in dealing with emotional distress from past trauma and oppression, so that it is not unawaresly displaced into current activities in ways that distort attitudes to self, to others, and to the task... The importance of this [emotional and interpersonal] strand needs to be affirmed at the induction meeting and its unconventional nature in an emotionally repressive society made clear.

...If you launch an inquiry without a contract to work with emotional processes and interpersonal tensions, you will have no warrant to address and resolve distressed distortions of the inquiry process, such as consensus collusion, lack of rigour and so forth.

Once such a contract is in place, then the facilitator of this strand can do many things, such as – ...Keep an eye out for the appropriateness and relevance of doing more in-depth work with people, using breathing, bodywork, uncovering memories, psychodrama. This is in order to abreact hidden distress and get some insight into how it has been distorting current attitudes and behaviour. This assumes that you are competent and willing to facilitate such work.

...[You could] seek a contract to complement the discharge of distress emotion by two methods of transmuting and transforming it. The first is through simple, non-contentious, transfiguring ritual, and meditative practices of inner centering and expansion of consciousness; the second is through symbolic rendering in presentational forms, through drawing, painting, movement, sound, music, drama, story.

There may be very real issues in the present that need dealing with in their own terms, in which case any past associations are of secondary import. On the other hand, there may be virtually nothing at work but strong projections from the past” (1996, 70-71).

I quote the above in full, because the entire methodology of cooperative inquiry assumes that at least some facilitators are willing to work on learning the use of such art and craft based approaches to knowing that transcend the rational. This is also the case with action inquiry. The reference to “past emotional distress” is likely to be dismissed by readers unacquainted with psychodynamic theory as inapplicable to a reasonably functional practitioner of Systemic Intervention. They could not be more wrong. It is in the nature of lived experience that small events and tiny emotional impresses and memories from any stage of the past always do conflate into the present moment, because it is in the nature of our sense-making through pattern identification at the sensory level that operates unconsciously all the time (the interested reader is referred to Levine, 1997 and 2005). Hence, an awareness and attunement to this dimension is fundamental to any critical reflection on our own subjective orientations to experience. In fact, this is the central exploration in the Sumedhian process explorations and in holotropic breathwork.

Then again, it is critical for facilitators

“...to make a fundamental distinction between the disruption of the inquiry process by emotional and interpersonal distress, and the chaos, disorder and confusion that is an integral part of the inquiry process. It would be a great mistake to try to clean up and get rid of the latter by the methods appropriate to the former. When the group is in the midst of chaos that is the harbinger of a new kind of order which may eventually emerge from it, members need to be encouraged to tolerate the anxieties and frustrations involved, to stay with them and undergo them. To climb out of these states as soon as they occur by some kind of emotional processing would simply produce premature closure and spurious order, and this would undermine the inquiry” (Heron, 1996, 72).

Curiously, while there is a need to have strong conceptual clarity about these challenges, their solution emphatically does not lie in conceptual work. The mechanics of resolution of such issues is what I have attempted to lay threadbare in the few examples of what applied theatre can offer, in the previous section discussing Sumedhian process explorations. This is because our conceptually created world is secondary; and the imprints of the felt experience and their shadows on the present occur prior to rational thought. Heron articulates this enhanced understanding as a postconceptual view:

“These complementary kinds of participative knowing engage us with the primary meaning of lived experience. Such primary meaning is the meaning the world has as constituted by our co-creation of it, our transactional generation of it. It is the meaning inherent in the process of perceiving and feeling the presences in our world. It is nonlinguistic and is grasped by actively, alertly and awarely deepening our intuitive-imaginal, and empathic-resonant, participation in our world.

Secondary meaning is linguistic and conceptual, arising from the ascription of class-names and general terms to the content of our lived experience. It is grounded on primary meaning. The use of language presupposes an agreement about how to use it; and this agreement rests on a shared tacit grasp of primary meaning. Secondary, linguistic meaning is a partial and incomplete transformation into conceptual terms of the primary meaning inherent in our imaginal and empathic participation in our world. So

propositional outcomes of an inquiry are to do with revising our conceptual transformation of our lived experience of the natural world, and with elaborating explanatory theory on the basis of this revision.

Such outcomes articulate[s] ...the postconceptual world. This a world in which linguistically charged thought withdraws to allow the transparent body-mind, with its full range of sensibilities, to open to its radical transaction with the given cosmos, and then returns to clothe the intuitions of this openness with revisionary language. Less rhetorically. It is a world we describe by words that transform into concepts our nonlinguistic experience of primary meaning. At the same time, we remain very open to that experience, and thus open to reframe our conceptual account.

Conceptual systems obscure the world of primary meaning when they build elaborate superstructures of ‘knowledge’ on the linguistic transformation, the categorization, of a limited set of primary meanings; and when they get preoccupied with refining the superstructure while forgetting, and failing to extend, its imaginal and empathic foundations” (1996, 91-2).

6.3.3 Outcomes

Heron describes the outcomes of cooperative inquiry in a manner distinct from the usual academic ideas about inquiry:

“The outcomes of such inquiry combine a way of being present in the world, a revisioning of its patterning, propositions that articulate it, and practices that transform it... The middle two of these can be expressed in forms apart from the inquirer, in artistic portrayals and reports. But the first and last are inseparable from the inquirer, and since they have been forged in collaboration with others, this creates a deep bonding. Hence the ending of any inquiry is a celebration of this bonding and a mourning that the active welding of it has come to an end. So there needs to be some full acknowledgement of all this.

I am opposed to the idea that the proper outcome of research with people is a written report. Whether the inquiry is informative and describes the inquirers’ world, or transformative to do with practices that change their world, the proper outcome is not something on paper, but something within persons. Where people are their own instruments of inquiry into a topic using their own experience, and undergo transformations of being. Perception, thinking and

behaviour in order to conduct it, then it is clear that the proper outcome is the transformed instrument. The instrument is the evidence is the outcome.

Anything written down is secondary and subsidiary” (Heron, 1996, 100-1)

The reference to the two primary poles of cooperative inquiry, the informative and the transformative, is about whether the inquiry will be descriptive of some domain of experience, being informative and explanatory about it; or whether it will be exploring practice within some domain, being transformative of it. Of course, these two are interdependent in various ways. When holding a descriptive focus, the information gathered about a domain is eventually applied to determine actions performed within it. A practical focus throws into relief a great deal of descriptive data, as a secondary offshoot. If the inquiry is informative, the primary outcomes will be mainly descriptive and explanatory – propositions about the nature of the domain. Secondary outcomes will be the skills involved in generating the descriptive data. If the inquiry is transformative, the primary outcomes will be mainly practical skills, that is, the practices acquired, and the situational changes they have brought about. Secondary outcomes will be propositions that (1) report these practices and changes, and evaluate them by the principles they presuppose; and (2) give information about the domain where the practices have been applied. Of course, a cooperative inquiry can involve either foci; alternate between them; or balance between the two.

There are two cultures of inquiry, broadly corresponding to these foci – the Apollonian and Dionysian. These refer to two different but complementary approaches:

“The Apollonian inquiry takes a more rational, linear, systematic, controlling and explicit approach to the process of cycling between reflection and action. Each reflection phase is used to reflect on data from the last action phase, and to apply this thinking in planning the next action phase... The Dionysian inquiry takes a more imaginal, expressive, spiralling, diffuse, impromptu and tacit approach to the interplay between making sense and action. In each reflection phase, group members share improvisatory, imaginative ways of making sense of what went on in the last action phase. The implications of this sharing for future action are not worked out by rational pre-planning. They gestate, diffuse out into the domain of action later on with yeast-like effect, and emerge as a creative response to the situation.

... Whether inquiry cultures are Apollonian or Dionysian, what they have in common is the intentional interplay between making sense and action, and emerge as the inquiry proceeds. The content of the inquiry as a whole, with all that goes on in its phases of reflection and action, cannot be preplanned; and the preplanning of an action phase in the Apollonian cultures is piecemeal, done one at a time, each plan emerging from what has gone before. So there is a sense in which any inquiry in its overall format has a predominantly emergent or Dionysian format. The two cultures are not separate, independent entities between which a choice must be made, but rather bipolar and interdependent values and processes within any inquiry culture ... The polarity is between the mental and the vital, between prior shaping by thought and imaginative openness to living, creative impulse. This is a complementarity at the heart of all human endeavour” (Heron, 1996, 45-7).

Heron talks about the tension between the two research cultures, which are kind of ideal types, and each researcher or group must be alive to the pull and play of these within an inquiry. To summarise, outcomes from a cooperative inquiry may involve in varying degrees, the transformations of personal being, presentations of insight, propositional reports, and practical skills.

6.3.4 Systemic ontology and Co-operative Inquiry: Connecting theory and experience

Having established earlier in §6.2 that the process inquiry at Sumedhas bears a close correspondence to all the facets of systemic ontology I outlined in Chapter 5, I avoid repeating similar arguments on behalf of cooperative inquiry. What is significant about cooperative inquiry is the extent of robust theory development and conceptual grounding that has been achieved in the works of Heron, Reason and Rowan in their various publications (single or joint). Heron & Reason (1997) have developed an elaborate epistemology of knowing, corresponding to this practice of cooperative inquiry that acknowledges forms of knowing beyond the rational. This is discussed in the next chapter.

6.4 Action Inquiry

The third approach for review is action inquiry (Torbert, 1991).

6.4.1 Origin and principles

Action Inquiry is a method pioneered by William R. Torbert, along with his colleagues, originating in experiments to seek an active ongoing balance between the personal, organisational and social spheres, conducted during his teaching and research career at the Southern Methodist University School of Business, Dallas, Texas from the 70s, and extending into his later teaching and consulting career at Yale and Harvard.

Torbert (1991) begins with the claim that our knowledge of what is occurring at any given moment in our lives must be inadequate to what is actually occurring. He examines four sources for this inadequacy: “our ordinarily narrow attention; our ordinarily narrow conceptual-emotional interpretive process; our ordinary lack of awareness of our own actions and how they influence and skew what we know; and, finally, our ordinarily incomplete, unsystematic, and untested data about the present” (1991, 226). He shows how these can easily be verified in a few moments of reflection.

Next he shows that each one of us can similarly verify for ourselves the existence of four territories of experience—consciousness, thought, embodiment, and the outside world. Like Midgley (example, 2000, 86 and 88), he discovers that our awareness ordinarily floats in one territory of experience at a time, which is why our knowledge of what occurs to us in the present usually remains inadequate. Thus, his method of Action Inquiry aims at an intentional and continuous widening of awareness to embrace all four of them. Ironically, this attempt leads only to a repeated confirmation of the fact that “Moreover, to know for certain that the four territories exist and to widen our awareness intentionally and repeatedly to include them shows us with increasing frequency how little and how uncertainly we know what is going on in the different territories” (Torbert, 227; compare this to the Sumedhian position that there are no finalities). Thus, the stated purpose:

“Action inquiry is a lifelong process of transformational learning that individuals, teams, and whole organizations can undertake if they wish to become:

- increasingly capable of listening into the present moment from which the future emerges;
- increasingly alert to the dangers and opportunities of the present moment;
- and

- increasingly capable of performing in effective, transformational, and sustainable ways.

Action inquiry can gradually become a moment-to-moment way of living whereby we attune ourselves through inquiry to acting in an increasingly timely and wise fashion for the overall development of ourselves, our colleagues, friends, and family, and the wider world” (Torbert, 2015).

Torbert, thus, treats this as “a kind of scientific inquiry that is conducted in everyday life (including the everyday life of academic scholarship), not a kind of scientific inquiry conducted only within sanitized experimental environments, survey designs, or reflective, clinical, critical settings” (1991, 220). Therefore, he emphasizes “... ‘*Consciousness*’ in the midst of action—a special kind of widened attention that embraces all four territories of experience (intuition, reason, one’s own action, and the outside world) —as both the ultimate aim and the primary research instrument in action inquiry” (1991, 221). These four territories are akin to the four ways of knowing – presentational, propositional, practical and experiential, in the same order (see Chapter 8).

He locates an imperative for this that is composed of epistemological (above), pragmatic and political reasons (1991, 235-6), and distinguishes action inquiry from mainstream social science in its inclusion of the territories of consciousness and that of one’s own embodiment.

6.4.2 Methods

In presenting the method of action inquiry, Torbert emphasizes “the process and results of becoming more aware of *one’s own embodiment* in a demanding action setting, of carefully recording one’s own action with others and experimenting to make it more effective” (1991, 241). It rests on an approach he terms the observant participation method:

“(1) The researcher views himself or herself as a participant in the action to be studied—indeed, as a committed participant; instead of ‘participant observation,’ the researcher creates a role of ‘observing participation’.

(2) The researcher views his or her own experience and action as within the field of study, not only in order to explore the effects of the research on the setting, but also in order to explore how to become more effective.

(3) The researcher expects the study to be longitudinal in nature—and not just six months or one year” (Torbert, 1991, 242)

He explains the approach, which locates a community of inquiry within a community of social practice, a principle broadly akin to cooperative inquiry (§7.3):

“The action inquiry approach does not attempt to preclude bias about, or influence on events by distancing. Instead, it recognizes and explicitly tests for the possibility of bias, and for the actual type of influence that is operating between research and practice (between ‘community of inquiry’ and ‘community of social practice’), at each point of action and interpretation. The underlying principle is that neither distance nor intimacy will ipso facto generate either objectivity or bias on the part of the observer, either impact or lack of impact on the observed” (1991).

The reader will note the correspondence between point (2) of the method and the idea of second-order science discussed earlier (see §3.3, especially Figure 3.4). The reflexivity intended here is facilitated through a model of leadership, akin to the existential universe mapper model presented in §3.4.1; it is essentially an evolutionary/integral psychology approach, and consists of seven levels, which they term action-logic categories: opportunists, diplomats, experts, achievers, individualists, strategists, and alchemists (Torbert, 1987; Rooke & Torbert, 2005). The interested reader will discover a reasonable correspondence between these categories and the existential universe mapper stages.

Torbert sees the praxis of Action Inquiry as leading to the development of a capacity for “Three-Dimensional Knowledge” (1991, 269-277). He explains this geometric metaphor in this fashion: One-Dimensional Knowledge consists of situation-specific, time-bound facts: the sort that is very useful for the conduct of everyday life and underlies first order science. Such knowledge is conditional, and excessive reliance on such knowing – a belief that this is the only valid sort – leads to a tendency to seek situations over which unilateral control can be exercised, and to organise and grasp only linear time (ibid, 264).

Two-Dimensional Knowledge refers to Eternal Questions:

“Eternal questions are questions at the center of human culture throughout history, questions that deserve to be asked and pondered again and again throughout one’s life, questions that do not have a single right answer as a factual question does. Eternal questions properly receive many contrasting answers at different times while gradually circling around and answering themselves by the place they take, the pattern they make, in one’s life with others.

Eternal questions concern each person’s and humankind’s relationship to love, power, justice, truth, beauty, death, and cosmic order. The appropriate relationships between parent and child, between teacher and student, between friends, between state and citizen, and among beginnings, middles, and endings are also eternal questions. Likewise, the appropriate relationships among economics, politics, and ethics and among matter, energy, and intelligence are eternal questions that whole periods of history, such as the modern era, virtually forget to ask” (Torbert, 1991, 265-6).

He explains why we need to go beyond modern, rational thinking:

“Most persons who think theoretically do so in armchair style: seduced away from ongoing self-awareness by the boob-tube-like ease of focusing on anything else (including our Walter Mitty dreams); cushioned from the immediate physical and emotional demands of action, either because we hold an academic role or because we are temporarily at leisure; and protected likewise from metaphysical winds by a framework for thought that we take for granted as appropriate (e.g., scientific method or Christian dogma). Under such conditions, theoretical thinking does not confront the narrowness of our own attention, nor (for it would take a wider attention to catch this) the disconnections among our thoughts, feelings, actions, and effects on others— does not confront the multiple, mutually intertwining and interrupting patterns that condition our experience from moment to moment. Instead, armchair theorizing results in one-dimensional, single-structure answers that disguise the scale of the unknown and disguise our participation in the reality described” (ibid, 266).

We can see that Torbert’s idea of One-Dimensional Knowledge corresponds to the universe of becoming-striving, while Two-Dimensional Knowledge refers to the universe of being-abiding:

“Only as one thinks nakedly in action situations that are simultaneously making physical, emotional, and intellectual demands and where there is no accepted, shared framework—only as one wonders amidst multiple possible ways of structuring answers and amidst the pressures of acting somehow—does one begin to appreciate how inadequate is any single way of structuring language and social exchange to the actual cultural pluralism, cybernetic complexity, and unique action demands of human situations.

Only as one wonders amidst multiple possible ways of structuring answers, feeling the demand to act Now [sic], does one begin to appreciate that certain truths can be approached only through the self-renewing openness of eternal questions—only through just such active wondering. Like the Kundalini snake if it were to bite its own tail, circles of examined experiencing contain a dramatic energy—an alchemical process at once biologically determined and metaphysically liberating. Although references to eternity usually connote an unimaginably long time, understood mathematically and poetically eternity is in fact instantaneous—a dimension of time orthogonal to durational time, always and only accessible through wider awareness in the present moment.

This elusive sense of the intimacy of eternity, how it curls inside time...” (ibid, 268).

Torbert recognizes that these two dimensions are like two sides of a coin: inseparable facets of the business of human consciousness.

“In order to organize time as I would truly wish, I must discover the relationship between these two faces of attention, I must discover their underlying unity—my integrity—the pattern of my life’s possibility and how each particular goal and project reflects (or does not reflect) that. The question “Who experiences all these states?” calls, not for a factual answer or a theoretical system, but rather for a subjective feeling of all one’s states—and not just of all one’s states in isolation from one another or in isolation from the wider world, but rather of one’s unique lifeline-in-the-world. This kind of questioning seeks to become continuous and coexistent with one’s other

ongoing activities and eternal questions. Through this kind of questioning the past, present, and future come into dialogue with one another in all their variability” (ibid, 269).

6.4.3 Outcome: Three-Dimensional, Living Inquiry

This, then, creates the impetus to dwell in what he calls Three-Dimensional Knowledge, or ‘Living Inquiry’, an orientation to living that he sets apart in terms of two significant characteristics: a third orientation to time and to self-esteem.

“The experience of asking eternal questions provides a certain preparation for seeking to see one’s unique lifeline-in-the-world. Each eternal question gathers various different times in one’s past life and relates them to one another in the present. The process of asking eternal questions also offers practice in listening for a more intimate reality cuddled in on itself but open to the active attention” (ibid, 270).

However, abiding in this process needs a constant uncovering and shedding of all that is imitative and borrowed from typical social convention: often what one discovers is not nice: “Whereas eternal patterns, like Mozart’s music, are profoundly attractive—always in good taste—a unique lifeline is fundamentally grotesque—necessarily in questionable taste. It fits no pre-existing pattern or convention fully and comfortably” (ibid). Paradoxically, the value of the process falters when one succumbs to a sense of finality in recognising one’s own patterns – thus I gain my personal power in the recognition of my vulnerability and ignorance:

“I fall away from my gait of power, not so much when I become uncoordinated or when I cease to appreciate the pattern my life-with-others is weaving—such experiences are motivating— but rather when I fall into believing that I know the pattern, or when I fall into believing that any one part of my life or any one language is the crucible or the code for this evolving pattern.

Confusion and the will-I-am to listen through such confusions are the two legs of my gait of power” (ibid, 273).

If this is the case, then, in the absence of finality, what is the compass for my choices of action? Curiously, being able to abide in this uncertainty, in this duality of being

and becoming, creates the unique possibility for flow, creativity and expressivity, in his formulation of a third dimensionality to time:

“To ask ‘Who am I?’—not in an anguished, intellectual, self-absorbed way but in the way now being described – is to ask about uniqueness in another sense as well. Whereas factual questions open to the *timebound* quality of experience, and eternal questions open to the *timeless* quality of experience, questions seeking contact with one’s lifeline-in-the-world open toward the possibility of uniquely *timely* action. ‘What is up to me (and no one else) to do at this particular moment in my life and in the life of the group/organization/nation with which I am interacting?’

Obviously, the answer to this kind of question cannot occur in factual or theoretical terms, for these kinds of knowledge presume external referents and generalizability across time. The answer to this question occurs in actual, history-making terms. Such timely action is not oblivious to, but rather embraces, empirical facts and archetypal patterns. At the same time, it transcends and transforms and thereby further defines the human situation it addresses” (ibid, 270-1).

In accepting the true nature of the human situation in all its fraught potentiality, one arrives at an even more deep-seated sense of self-esteem, paradoxically based on the absence of any tangible finality:

“The experience of eternal questioning—of wondering beyond any one factual answer while simultaneously recognizing that the very patterns of one’s ongoing thought, feeling, and action represent an ongoing answering—is mortifying to the kind of self-esteem that is conditional upon having the right answer. One may react to the embarrassment and mortification with self-pity, or one may digest each such minute experience of ego-death as a call to a humble, prayerful, attentive thinking.

Insofar as one accepts the call to begin thinking, feeling, and sensing anew, one begins, gradually, to taste another kind of self-esteem based on a special wakefulness to ongoing experiencing—based on facing the unknown along with other inquirers through the ages who wished to enter the present and face their own time fully. This kind of self-esteem is deeply rooted in the very process of human experiencing. It is not contingent on and determined by the

particular answers of a particular time in history and position in society” (ibid, 266-7).

6.4.4 Systemic ontology and Action Inquiry: Connecting theory and experience

In propounding the approach of living inquiry in all its aspects, the *idea* of the interconnectedness of all things is endorsed, although there is no explicit mention that might correspond to the idea of the deep information field. In its very nomenclature and, of course, in its approach as described, *action inquiry* privileges action and reflecting-in-action, and accords with the action paradox. In its embrace of the idea that rational thinking alone is inadequate, there is an indirect validation of the language paradox.

I spoke about *returning attention to its source, replenishing the possibility of making fresh meaning and discovering newness in experience* as constituting the elements of the *wisdom approaches*. Clearly, action inquiry incorporates ways to do all of this. In reincorporating two-dimensional knowledge into play in everyday effort, Torbert accomplishes an overcoming of the intentionality paradox. His ideas of each person’s ‘unique lifeline-in-the world’ and ‘*timely* action’ echo the Sumedhas principle of *dharmic* action, and accords with the ego paradox. Thus, the four systemic ontological imperatives of being, cognition, learning and doing are dealt with (see §6.3), and accounted for in terms of ways to overcome the corresponding paradoxes.

6.5 Holotropic Breathwork

As mentioned at the start of this chapter, holotropic breathwork as a method for healing and self-exploration apparently does not have a connection with systems thinking. Let me trace the connection as I see it. We have discussed in chapter 4 about the need to have an adequate basis to explore the processes of boundary judgement in the subject. We saw how this is complicated by several systemic realities: the interconnectedness of things and their likely interpenetration by the deep intelligence field; the enactive nature of cognition and the teleonomic principle underlying the dynamics of the Universe. We have invoked the idea of strong second order science as a conceptual frame appropriate to this challenge. Now, across human cultures, typically, direct mystical experiences and perennial philosophies have provided a grasp

of such a constitution of the Universe and ways to live with such an understanding. However, we cannot regress to a purely phenomenological stance; that has its own problems (being neither verifiable nor shareable amongst people) so it is necessary to build a new synthesis.

In seeking a possible bridge to such a synthesis and new understanding, it appears to me that the method and the theoretical conjectures assembled in holotropic breathwork fulfil a significant gap. Like any model, holotropic breathwork approximates some part of reality, and is useful inasmuch as it helps us to deal better with situations. Grof's (1975, 1988) work helps to explain the processes and unusual outcomes that underlie the entire range of experiences that these excursions into other ways of knowing offer. Grof works with the body (especially breathing) as a way to access normally barricaded aspects of the unconscious mind, and further provides a model of the mind consonant with these experiences. My description of this method and its theory that follows is therefore a little more elaborate as compared with my summaries of the previous two methods. I make discursions at places to show how holotropic breathwork's method or theory explains the experiences and outcomes from previous methods, especially my own direct experiences with Sumedhian process explorations, and links to other ideas introduced earlier. I will finally conclude the section on holotropic breathwork with a discussion of certain areas of extreme challenge to conventional notions posed by Grof's meticulous research and characterisation of non-ordinary states of consciousness.

6.5.1 Origin and Principles

Stanislav Grof is a psychiatrist known for founding the *theory of transpersonal psychology* and creating the method called *Holotropic Breathwork (HB)*, for self-exploration and psychotherapy. According to Grof, an average person of modern Western culture operates in an impoverished way that is far below his or her real potential and capacity, because the individual identifies with only limited aspects of his or her being, the physical body and the ego. Ergo,

“This false identification leads to an inauthentic, unhealthy, and unfulfilling way of life, and contributes to the development of emotional and psychosomatic disorders of psychological origin.

The holotropic strategy of psychotherapy represents an important and effective alternative to the traditional approaches of depth psychology, which emphasizes verbal exchange between the therapist and the client. The name holotropic literally means aiming for totality or moving toward wholeness (from the Greek *holos* = whole and *trepein* = moving in the direction of)” (Grof, 1988, 165).

The holotropic method is proprietary and its detailed knowledge is available to certified practitioners; I do not have that exposure. However, there is sufficient broad description of it in Grof’s general writings, which also provide a detailed model of the psyche that he has built through his five decades of research into non-ordinary states of consciousness.

Modern science until recently has rejected the value of knowings that can be accessed through various phenomena of non-ordinary states of consciousness (NSC). The term NSC refers to states of consciousness obtained in such contexts as drug-induced psychedelic states, near-death experiences, memories of past life, phenomena such as trances related to rites of passage, aboriginal healing ceremonies, spiritual practices and many other phenomena of historical and cultural significance. Several persons who have experienced such states have reported on these in the popular literature; some well-known examples include Yogananda (1946), Castaneda (1968), Somé (1993), and Prechtel (1998). There is now growing scientific investigation into these topics; just a couple of examples of institutions fostering such inquiries include Esalen (www.esalen.org), and Sudhir Kakkar’s project on ‘Boundaries of Consciousness’ producing the eponymous book series, supported by the Breuninger Foundation; reading lists are to be found in Laszlo (1999, 2007).

Grof’s detailed investigation and insights on NSC led him to conclude that:

“The new data are of such far-reaching relevance that they could revolutionize our understanding of the human psyche, of psycho-pathology, and of the therapeutic process. Some of the observations transcend in their significance the framework of psychology and psychiatry and represent a serious challenge to the current Newtonian-Cartesian paradigm of Western science. They could change drastically our image of human nature, of culture and history, and of reality” (1988, xiii).

In his early career, Grof began researching the potential of NSC for healing and transformation, based on profound experiences of some patients from encounters with psychedelic substances. Over two decades, he discovered that careful use of psychedelics such as LSD to induce NSC could provide extraordinary new tools for psychiatry and psychotherapy. Later, when such research with LSD was banned, he researched and arrived at a method to predictably induce NSC by non-drug means. He then went on to apply his findings to the fine tuning of holotropic breathwork, as a method to achieve emotional and psychosomatic healing, personality transformation and consciousness evolution.

The discovery of the potential of these NSCs to generate healing led to him positing a new cartography of the human psyche, and the following quotations provide a concise summary of the new understanding:

“The development of distressing symptoms that do not have any organic basis can be seen as an indication that the individual operating on false premises has reached a point where it has become obvious that the old way of being in the world does not work any more and is untenable. Such a breakdown can occur in a certain limited area of life — such as marriage and sexual life, professional orientation, or pursuit of various personal ambitions — or can afflict simultaneously the totality of the individual’s life. The extent and depth of this breakdown correlates approximately with the development of neurotic or psychotic phenomena. The resulting situation represents a crisis or even emergency, but also a great opportunity.

The emerging symptoms reflect the effort of the organism to free itself from old stresses and traumatic imprints and simplify its functioning. This development is, at the same time, a process of discovery of one’s true identity and of the dimensions of one’s being that connect the individual with the entire cosmos and are commensurate with all of existence. Under favourable conditions and with good support, this process can result in radical problem-solving, psychosomatic healing, and consciousness evolution. It should therefore be seen as a potentially beneficial, spontaneous healing activity of the organism that should be supported rather than suppressed. This understanding of the nature of psychopathology represents the basic credo of holotropic therapy.

The main objective of the techniques of experiential psychotherapy is to activate the unconscious, to unblock the energy bound in emotional and psychosomatic symptoms, and to convert the stationary balance of this energy into a stream of experience. Holotropic therapy favours activation of the unconscious, which is so powerful that it results in a nonordinary state of consciousness. This principle is relatively new in Western psychotherapy, but has been used for centuries or millennia in the context of shamanic procedures. Aboriginal healing ceremonies, rites of passage, meetings of various ecstatic sects, and the ancient mysteries of death and rebirth.

For psychotherapies that utilize mind-altering techniques of such power, the personalistic and biographically oriented model of current academic psychiatry is clearly insufficient and inadequate. During such experiential work, it will become obvious, frequently in the first session, that the roots of psychopathology reach far beyond the events of early childhood and beyond the individual unconscious. Experiential therapeutic work will uncover — behind the traditional biographical roots of symptoms — deep connections with clearly transbiographical domains of the psyche, such as elements of profound encounter with death and with birth, characteristic of the perinatal level, and an entire spectrum of factors of transpersonal nature.

For this reason the use of narrow biographical models in combination with experiential techniques functions necessarily as a conceptual straitjacket and is inhibiting and counterproductive. Truly effective treatment cannot be limited to work on biographical issues. The model of the psyche used in therapeutic approaches based on holotropic principles has to be therefore extended beyond the biographical level of the individual unconscious to include the perinatal and transpersonal domains” (Grof, 1988, 165-6).

Thus, he summarizes the basic principles of holotropic breathwork:

“Its main contribution is the recognition of the healing, transformative, and evolutionary potential of nonordinary states of consciousness. Since in these states the human psyche seems to show spontaneous healing activity, holotropic therapy uses techniques to activate the psyche and induce nonordinary states of consciousness. This tends to change the dynamic

equilibrium underlying symptoms, transform them into a stream of unusual experiences, and consume them in the process. The task of the facilitator or therapist (the term is used here in the original Greek sense of assisting to heal) is then to support the experiential process with full trust in its healing nature without trying to change it” (Grof, 1988, 167).

This idea of the spontaneous healing nature of the NSC corresponds squarely with my own conviction about the self-healing nature of the DIF (see §6.1.5, also §8.4.5).

According to Grof,

“When people get involved in self-exploration using non-ordinary states of consciousness, it is not necessary to teach them ecology or ethics. When they have transpersonal experiences, their system of values changes automatically and they develop deep ecological awareness, tolerance, and compassion. Experiences of psychospiritual death and rebirth have a similar effect; one’s sense of identity is expanded and includes other beings. The experience of ego-death leads to the sense of a much larger identity.

This process has very important practical consequences. We had a program of psychedelic therapy for terminal cancer patients facing imminent death. These kind of experiences helped them overcome the fear of death and changed profoundly their attitude, the quality of their remaining days, and the experience of dying” (quoted in Laszlo, 1999, 130).

Thus, his explorations led Grof to describe a new cartography of the human psyche – one composed of three dimensions: the recollective-biographic level, the perinatal matrices related to the experiences of birth and death, and the transpersonal dimensions. The reader should consult Grof (1975, 1988 and 2012); Grof & Valier (1984); Grof & Bennett (1993); and Grof & Grof (2010) for details.

“The experiences of all the above categories — biographical, perinatal, and transpersonal — are quite readily available for most people. They can be observed in sessions with psychedelic drugs, in those forms of experiential psychotherapy using breathing, music, dance, and body work, and, quite regularly, in dreams. Laboratory mind-altering techniques, such as biofeedback, sleep deprivation, sensory isolation or sensory overload, and various kinaesthetic devices can also induce many of these phenomena.

There exists a wide spectrum of ancient and Oriental spiritual practices that are specifically designed to facilitate access to the perinatal and transpersonal domains...Recent consciousness research has thus made it possible for the first time to review seriously ancient and non-western knowledge about consciousness and to approach a genuine synthesis of age-old wisdom and modern science..." (Grof, 1988, 2).

Although the experiences of the recollective-biographical level and the individual unconscious have been traditionally explored in Western psychotherapy, Grof finds that experiential psychotherapies such as holotropic breathwork have several distinct differences and advantages compared to the verbal ones. In brief,

i) "The techniques that can directly activate the unconscious seem to reinforce selectively the most relevant emotional material and facilitate its emergence into consciousness. They thus provide a kind of inner radar that scans the system and detects material with the strongest charge and emotional significance. This not only saves the therapist the effort of sorting the relevant from the irrelevant, but also relieves him or her from having to make such decisions, which would be necessarily biased by professional training, adherence to a particular school, or personal factors" (Grof, 1988, 4).

ii) He has been able to demonstrate that, in neurological terms, the age regression observed in unusual states of consciousness is complete and authentic (see Grof, 1984, 4 for technical details).

iii) relevant memories and other biographical elements do not emerge separately, but form distinct dynamic constellations of memories (and associated fantasy material) from different periods of the individual's life, whose common denominator is a strong emotional charge of the same quality, intense physical sensation of a particular kind, or shared additional important elements (Grof, 1975).

This is related to the idea of the schema inventory in the anticipatory present moment (see §5.2.6), the idea of the triune brain and somatic experiencing (Levine with Frederick, 1997; Levine, 2005), and thus the autopoeitic idea of the unity of mind and body (Maturana & Varela, 1987).

iv) experiential therapies place much higher emphasis on the importance of direct physical traumatization for the psychological history of the individual, while traditional verbal psychotherapies exclusively emphasize psychological trauma (Grof, 1988, 5-6).

It is not possible here to enter into the extensive description and classification of the kinds of experiential extensions holotropic breathwork provides beyond consensus reality (Grof's term for the normal everyday perception or construction of the world in modern Western culture, characterised and bounded within material reality, three-dimensional space, and linear time). A detailed description of the various possible types of experiences is provided in his book (1988, 3-164) and a helpful summary table is provided (1988, 42-44). The range of these realms and the significance of Grof's discoveries can be gauged from these statements:

“The existence and nature of transpersonal experiences violate some of the most basic assumptions of mechanistic science. They imply such seemingly absurd notions as relativity and the arbitrary nature of all physical boundaries; nonlocal connections in the universe; communication through unknown means and channels; memory without a material substrate; nonlinearity of time; or consciousness associated with all living organisms (including lower animals, plants, unicellular organisms and viruses) and even inorganic matter.

Many transpersonal experiences involve events from the microcosm and macrocosm — realms that cannot be directly reached by human senses — or from periods that historically precede the origin of the solar system, formation of planet Earth, appearance of living organisms, development of the central nervous system, and appearance of homo sapiens. This clearly implies that, in a yet unexplained way, each human being contains the information about the entire universe or all of existence, has potential experiential access to all its parts, and, in a sense, is the whole cosmic network, as much as he or she is just an infinitesimal part of it, a separate and insignificant biological entity.

Transpersonal experiences have a special position in the cartography of the human psyche. The recollective-analytical level and the individual unconscious are clearly biographical in nature. The perinatal dynamic seems to

represent an intersection or frontier between the personal and transpersonal. This is reflected in its deep association with birth and death — the beginning and end of individual human existence. The transpersonal phenomena reveal connections between the individual and the cosmos which are at present beyond comprehension. All we can say is that somewhere in the process of perinatal unfolding, a strange qualitative Moebius-like leap seems to occur, in which deep self-exploration of the individual unconscious turns into a process of experiential adventures in the universe-at-large, which involves what can best be described as cosmic consciousness or the superconscious mind.

While the nature of transpersonal experiences is clearly fundamentally incompatible with mechanistic science, it can be integrated with the revolutionary developments in various scientific disciplines that have been referred to as the emerging paradigm. Among the disciplines and concepts that have significantly contributed to this drastic change in the scientific worldview are quantum-relativistic physics (Capra 1975, 1982), astrophysics (Davies 1983), cybernetics, information and systems theory (Bateson 1972 and 1979, Maturana and Varela 1980, Varela 1979), Sheldrake's theory of morphic resonance (Sheldrake 1981), Prigogine's study of dissipative structures and order by fluctuation (Prigogine and Stengers 1984), David Bohm's theory of holomovement (Bohm 1980), Karl Pribram's holographic 1 of the brain (Pribram 1971, 1977), and Arthur Young's theory of process (Young 1976)" (Grof, 1988, 162-3).

Finally,

“Any unbiased study of the transpersonal domain of the psyche has to come to the conclusion that the observations involved represent a critical challenge for the Newtonian-Cartesian paradigm of Western science.

Although transpersonal experiences occur in the process of deep individual self-exploration, it is not possible to interpret them simply as intrapsychic phenomena in the conventional sense. On the one hand, they form an uninterrupted experiential continuum with biographical-recollective and perinatal experiences. On the other hand they seem to be tapping directly, without the mediation of the sensory organs, into sources of information that

are clearly outside of the conventionally defined range of the individual” (Grof, 1988, 161).

From his accounts and testimonials, it is clear that in the experiences of the NSC, there is access to vast territories of information in a manner that is completely consonant with the idea of the DIF. Further, his observations about the healing potential of the accession of such knowings corresponds with my emphasis of the principle that the DIF automatically encodes a teleonomic principle towards wellbeing (including the recovery of health) and flourishing.

6.5.2 Methods

On the face of it, holotropic breathwork would appear to be a simple technique. However, the fact that it quickly induces access to those parts of the unconscious that are normally barricaded from conscious activation (1988, 3-7), requires both an understanding of those realms (by which term I mean, not just a conceptual cartography, but also an adequate degree of direct personal experience) and a mastery of the skills and principles involved in the supportive facilitation of holotropic breathwork. A brief summary here serves the purpose of establishing my broader arguments, but for real understanding of the technique and its powers, the best advice is to attend a session; a second hand understanding can be afforded by reading Grof (1988, 2010).

Holotropic breathwork workshops consist in the main of multiple sessions of intense breathwork, spread over a certain number of days. There is some preparatory briefing involved, and the session itself involves three rough phases that segue into each other – of introduction, therapeutic work and its conclusion. The intense breathing is supported by music, guided and focused bodywork, emotional support, supportive physical contact and sometimes mandala drawing. As Grof observes,

“It has been known for centuries that it is possible to induce profound changes of consciousness by techniques which involve breathing. Sophisticated and advanced methods of this kind can be found in the ancient Indian science of breath, or pranayama.

... Specific techniques involving intense breathing or withholding of breath are also part of various exercises in Kundalini Yoga, Siddha Yoga, the Tibetan Vajrayana, Sufi practice, Burmese Buddhist and Taoist meditation, and many others. More subtle techniques which emphasize special awareness in relation to breathing rather than changes of the respiratory dynamics have a prominent place in Soto Zen Buddhism, and in certain Taoist and Christian practices. Indirectly, the breathing rhythm will be profoundly influenced by such ritual performances as the Balinese monkey chant or Ketjak, the Inuit Eskimo throat music, and singing of kirtans, bhajans, or Sufi chants.

... We have been able to confirm repeatedly Wilhelm Reich's observation that psychological resistances and defenses use the mechanism of restricting the breathing. Respiration has a special position among the physiological functions of the body. It is an autonomous function, but it can also be easily influenced by volition. Increase of the rate and of the depth of breathing typically loosens the psychological defenses and leads to release and emergence of the unconscious (and superconscious) material. Unless one has witnessed or experienced this process personally, it is difficult to believe on theoretical grounds alone the power and efficacy of this technique" (Grof, 1988, 170-1).

After experimentation, Grof and his team have developed their specific, simplified technique of breathing, and he relates their observations:

"... In most instances, however, the hyperventilation brings a first more or less dramatic experiential sequences in the form of intense emotions and psychosomatic manifestations.

... In repeated holotropic sessions, there is a general trend toward progressive decrease of the overall amount of muscular tensions and difficult emotions. What seems to happen in this process is that the organism tends to respond to the changed biochemical situation by bringing to the surface, in certain more or less stereotyped patterns, various old, deep-seated tensions and disposes of them by peripheral discharge. This elimination or reduction of pent-up energies during holotropic sessions can happen in two different ways.

The first of these is the form of catharsis and abreaction, which involves tremors, twitches, dramatic body movements, coughing, gagging, vomiting, screaming and other types of vocal expression, or increased activity of the autonomous nervous system.

...The second mechanism represents a principle which is new... Here the deep tensions surface in the form of lasting contractions and prolonged spasms. By maintaining such sustained muscular tension for long periods of time, the organism is consuming enormous amounts of pent-up energy and is simplifying its functioning by getting rid of them.

...A typical result of a good holotropic session is profound emotional release and physical relaxation; many subjects report that they feel more relaxed than they have ever felt in their lives. Continued hyperventilation thus represents ultimately an extremely powerful and effective method of stress-reduction and leads to emotional and psychosomatic healing.

...Physical tensions tend to develop during the breathing in certain specific areas of the body. Far from being simple physiological reactions to hyperventilation, they have a complex psychosomatic structure. They vary greatly from one person to another and usually have specific psychological meaning for the individuals involved.

...In most instances, it is possible to identify the specific biographical, perinatal, or transpersonal sources of various forms of psychosomatic discomfort occurring during holotropic breathing, or at least to discover their general psychological meaning” (Grof, 1988, 172-7).

Some illustration of this point is made by narrating examples. One is reproduced here:

“When the spasms develop in the hands and the feet (the carpedal spasms of traditional medicine), they usually reflect a deep conflict between strong impulses toward some specific actions and the opposing and equally strong inhibiting tendencies. It is thus a dynamic equilibrium that involves simultaneous activation of the extensor and flexor muscles of comparable intensity. Individuals experiencing these spasms frequently report that they sense a history of an entire lifetime (or even more than a lifetime) of repressed aggression, withheld impulses to reach out to other people, or unexpressed

sexual tendencies. Sometimes painful tensions of this kind can represent blocked creative expressions such as an impulse to paint, to write, to dance, to play a musical instrument, to do specific craftwork, or to heal with one's hands" (Grof, 1988, 178).

What Grof has not made explicit at this point in the narration, but it appears to me to be implicit from a careful perusal of most of his writing, is that the ability to identify the source or general meaning of the psychosomatic expressions requires both learning from experience and a very specific attitude of being able to empty oneself (1988, 206-208) and achieve an empathic and resonant identification with the state of mind of the person undergoing healing. The learning from experience leads to a certain conceptual map. Multiple such chartings are possible and each/all can be useful, depending on the circumstances. Thus, while Grof has developed his own elaborate system, he also provides a detailed interpretation in terms of the Indian tantric system, over several pages (1988, 180-184). It is my own personal experience that one can develop such a personal understanding and mapping through the practice of several systems such as reiki, pranic healing, vipassana and yoga. A rather detailed guide is provided in Hay (1984). None of these make sense within Western rational thinking, but it is even less rational to discount evidence from experience (I speak both for my own, and that of the millions of practitioners worldwide, of all these several cultural and healing systems, who are not all voodoo specialists). Research at the frontiers is now beginning to make these phenomena intelligible to the Church of Science too (see §7.5.1).

It is not possible here to add further details on the other components of the method, the procedures involved, and all the rich details of indications, contra-indications, possible outcomes and cautions, for which the reader needs to consult the available books (referenced earlier). However, what I would wish to emphasize is the confirmation, here too, of the teleonomic principle that automatically leads to healing and flourishing, when the right conditions are provided:

“Ideally, a holotropic session requires only minimal intervention from the sitters. Their main role is to observe the process and make sure that the experiencers maintain a breathing rhythm that is faster and more effective than usual.

...The therapeutic outcome of the sessions is frequently indirectly proportionate to the amount of external intervention. Some of the most productive experiences are those where the client did everything himself or herself. Many traditional psychotherapeutic methods see the therapist as the active agent who uses specific techniques to change the psyche of the client in a certain direction, predicated by the theory of a particular school. Individuals who have been trained in such traditions might find it difficult to function as facilitators in holotropic therapy, where much emphasis is put on the spontaneous healing potential of the psyche” (Grof, 1988, 208-9).

6.5.3 Outcomes:

To sum up the outcome of a breathing session, “In a typical breathing session, the tensions and blockages will be amplified and manifested. ...Continued breathing tends to bring them to a culmination point, resolution, and release. This is true no matter what the nature and location of the problem is...” (Grof, 1988, 183).

An example of a testimonial provided in Grof’s book indicates the potential value of this method:

“I would like to conclude this report by a passage from a letter which we received a year after the Esalen seminar as a response to our request for a follow-up evaluation of the effects of the above experiences:

You asked about any lasting effects I have had from the breathing workshop. It has been just about a year since that time, so I feel that what is with me now is indeed lasting. Perhaps the most satisfying and amazing result is that I have truly and totally accepted the place where I live as my home — after some sixteen years of struggling with a strong desire to leave here! I mentioned in my earlier comments about the workshop that I had suddenly realized that I had flown thousands of miles to be with myself. At that moment, high on the cliffs of Esalen, I began living at home. That realization of home has been with me without a moment of wavering for this whole year since then. All who know me have been amazed.

In addition, there have been some other very substantial changes in my life, which I feel are directly the result of the workshop. After many years of talking, thinking, and reading about spirituality, I actually experienced during the workshop what seemed to me a very spiritual state. This spiritual experiencing has continued to pervade my life. The “issues” continue to come up — work, family, marriage, purpose, and so forth — but there is an increasing tendency to go deeply within myself, and to let these issues heal up from within, rather than trying to control or manipulate external circumstances.

I have been meditating each day for a couple of months now. This just seems like a good path for me. I am not using a particular teacher or spiritual discipline. This is just a time of focusing, of coming into the present moment. The result has been an increasing sense of calmness and quiet joy. I am noticing more love flowing out of me, something that has definitely been blocked throughout my life. Have always longed to share, yet the sharing has too often degenerated into domination and control, with ego getting in the way of Self! I am feeling freer now, and the love is flowing more freely. A number of people have come to me for help and support of various kinds — a spontaneous recognition from “outside” of the progress within” (quoted in Grof, 1988, 218).

6.5.4 Systemic Intervention and Holotropic Breathwork

All the preceding detailed description of holotropic breathwork, as already mentioned in several places, conforms to the idea of the DIF and teleonomy. The enactive nature of cognition is not particularly evidenced or explicated in this approach. However, the deep implicatedness and entanglement of the physical body (and especially its processes such as breathing and physical bodywork) in the psychology of trauma healing, indirectly indicates the high likelihood of such a connection.

Now I would like to point to the further significance of NSC experiences. This discussion is not essential to my thesis. However, the suggestion that a truly systemic understanding points to a spiritual side to the human experience has been raised by several systems thinkers, most eloquently by Laszlo (2007). This connection is tantalizing, and to my mind, well in consonance with the idea of strong second-order

science. Not only the methods outlined here, but numerous other approaches exhibit great care and deep thinking, in evaluating the significance of what are, after all, commonplace human experiences (if they were not blocked out by certain ideologies or theologies). To my mind, this is actually good science, and it is a shame that the knowings obtained in these ways are excluded in the mainstream knowledge enterprise, shackled as it is within, not just a dominant ideology, but a hubris that masks greed and profit motives.

My contention bears repetition a few times in this thesis. As I see it, it is essential for us in the mainstream to re-acknowledge the value of such knowings from the margins. I do not seek or wish to make a moral argument about the oppression of the marginalised peoples or other agents in the margins. I think they can well survive, even if under frugal or diminishing circumstances. These agents and their realms may even possibly gain an upper hand in a drastic reconfiguration of the planetary ecosystem or some larger system, in the scheme of things, when their very survival is threatened (in light of the evidence for a self-healing teleonomic principle). My conviction is that, *firstly*, if we in the mainstream have to recover from the monstrous world that we have built around us (mirroring the monstrous world that we have so carefully cultivated within!), we need to move well out of our comfort zones and embrace radical new ways of seeing, doing and being. I therefore speak first for my own redemption and survival. This is, above all, a knowingly pragmatic argument, and systemists in the mainstream would be well advised to consider its personal implications for themselves. *Secondly*, I believe that if I do not explore the furthest conjectures raised by these explorations, and do not emphasize the marginal pedigree of elements of knowledge described here as well as their definitive absence in the understanding within the dominant mainstream discourse (Santos, 2014), there is a very high likelihood that the dominant discourse will find ways to co-opt and redesignate these as its latest findings in the ‘march of progress’.

Having said all that, let me move on to the dimensions of spirituality pointed to in Grof’s work, and let us listen to his own words. (My reason for including a lengthy testimonial in the preceding outcomes section was to provide an opening for these discussions here). In addition, it seems fitting to talk about spirituality and the realization of higher human purpose in concluding my exposition of holotropic

breathwork, having begun this discussion with Grof's observation about the impoverishment of modern Western culture.

First-order science has conflated the entire universe of phenomena that Grof has described with religion; or consigned it to religion because it is 'irrational' or unverifiable according to its methods. Second-order science has not usually been bold about looking at these phenomena (although there are exceptions), and the desire to find a logical explanation – one that the rational mind can grasp – is a deep-rooted compulsion for us modern creatures. However, holotropic breathwork cuts to the core understanding of the processes that are at the heart of the creative edge and success in Sumedhian process explorations, action inquiry, cooperative inquiry and other methods not covered in my thesis. Further, Grof has provided a theory of mind that explains the phenomena discussed earlier.

These phenomena and theories correspond broadly with our idea of the DIF and the idea of the teleonomic principle of healing. It is interesting that there is a greater accession of these realms when work is undertaken in group settings that are purposively reflexive to the many possibilities for diversion, collusion and deviation from the focus of the effort. This parallels, at a group level, the individual's rationalistic and sensory barriers to accessing the energies and knowings of the unconscious. When groups successfully navigate these barriers to explore these realms, much creative and healing transformation occurs. The following quotations may well have been written about my own experiences with Sumedhian process explorations:

“The sessions in a group context generally are much more powerful than individual holotropic work. They tend to create what can best be described as a strong catalytic energy field that has a facilitating influence on the therapeutic process. An interesting aspect of collective holotropic work is the occurrence of many synchronistic events in the sense of Carl Gustav Jung (Jung 1960) between the experients and facilitators, among the experients, as well as between all the participants and various aspects of the external world.

...The way partners choose each other turns out often to be psychologically significant and can also involve synchronistic factors. It is not uncommon that the process of the two partners has elements of unusual

complementarity or antagonism; these can be of special significance and present an opportunity for emotional learning of an extraordinary kind” (Grof, 1988, 199).

In three significant discussions entitled ‘Healing as a movement towards wholeness’, and the potential of holotropic breathwork towards ‘pursuit of a more rewarding life strategy’ and ‘philosophical and spiritual quest’, Grof (1988, 238-273) summarizes the value of holotropic breathwork elegantly and the reader is urged to refer to this work. I can only highlight a few points made here:

“The recognition of such a general healing mechanism requires an entirely new understanding of human nature and a radical revision of the Western scientific worldview. The fundamental aspect of this new paradigm for psychology and for science in general is the realization that consciousness is a primary attribute of existence rather than an epiphenomenon of matter...

Modern research clearly indicates that human beings have a strange paradoxical nature. In the contexts traditionally explored by mechanistic science, it seems appropriate to think about people as separate Newtonian objects — complex biological machines made of cells, tissues, and organs. However, recent discoveries confirm the claims of perennial philosophy and the great mystical traditions that humans can also function as infinite fields of consciousness, transcending the limitations of time, space, and linear causality...

These two complementary aspects of human nature are connected experientially with two different modes of consciousness... The first of these can be referred to as hylotropic consciousness, which translates as matter-oriented consciousness. The name is derived from the Greek hyle = matter and trapein = to move toward. It is the state of mind that we experience in everyday life and that Western psychiatry considers as the only one that is normal and legitimate — one that correctly reflects the objective reality of the world.

...In contrast to the narrow and restricted hylotropic mode, the holotropic variety involves the experience of oneself as a potentially unlimited field of consciousness that has access to all aspects of reality without the mediation of senses... Experiences in this state of mind offer many interesting

alternatives to the Newtonian world of matter with linear time and three-dimensional space.

...It is important to realize that in the hylotropic mode it is possible to experience only the present moment and the present location (“here and now”) in the phenomenal world of consensual reality, as it changes from one second to another...In contrast, an individual in the holotropic mode has, potentially, experiential access to all the remaining aspects of the phenomenal world in the present, past, and future, as well as the subtle and causal realms and the Absolute”.

...Finally, modern consciousness research has confirmed the basic thesis of perennial philosophy that the consensus reality reveals only one aspect or fragment of existence. There are important realms of reality that are transcendental and transphenomenal. The impulse in human beings to connect with the spiritual domain is an extremely powerful and important force.

Modern consciousness research and experiential psychotherapy have thrown entirely new light on the problem of spirituality and religion and have returned to the human psyche its cosmic status. In full agreement with the Jungian perspective, spirituality or numinosity appears to be an intrinsic property of the deeper dynamics of the psyche. Whenever the process of experiential self-exploration reaches the perinatal and the transpersonal levels, it leads to spiritual awakening, and the individual becomes interested in the mystical quest. I have seen many highly educated persons undergo this process in our psychedelic training program and in holotropic workshops, and have yet to see a single individual, including atheists, Marxists, and positivistic scientists, whose scepticism and cynicism about spirituality would survive such an experience.

...The spirituality that emerges spontaneously at a certain stage of experiential self-exploration should not be confused with the mainstream religions and their beliefs, doctrines, dogmas, and rituals...Carl Gustav Jung expressed a similar opinion (Jung 1958); according to him, the main function of formalized religion is to protect people against the direct experience of God.

...There exists ample evidence that the transcendental impulse is the most vital and powerful force in human beings. Systematic denial and repression of spirituality that is so characteristic for modern Western societies

can be a critical factor contributing to the alienation, existential anxiety, individual and social psychopathology, criminality, violence, and self-destructive tendencies of contemporary humanity...

To live fully up to one's potential, it is essential to acknowledge both aspects of one's being, cultivate them, and become familiar and comfortable with both of them.

...In this way, one's life becomes an active dialogue between the hylotropic and the holotropic mode. This is really just a reformulation of Carl Gustav Jung's idea that the most vital human need is to discover one's own inner reality through the cultivation of symbolic life and to live in active, dynamic contact with the collective unconscious and the Self. This makes it possible to draw on the enormous resources and wisdom of ages that lie in the collective psyche.

The discovery of the hidden aspects of reality and of the challenges associated with them adds fascinating new dimensions to existence. It makes one's life much richer and more interesting and frees some of the energies that have been previously tied up in various quixotic ambitious endeavors and directs them to the adventure of self-discovery. Repeated experiences of the transpersonal domain can have a profound impact on the individual involved. They tend to dissolve the narrow and limited perspective characterizing the average Westerner and make one see the problems of everyday life from a cosmic perspective.

...In view of these facts, the increase of interest in spirituality and in inner quest is certainly one of the few hopeful developments in our troubled world. If this trend continues, inner transformation of humanity could become a major force in averting the present suicidal trend and the global catastrophe toward which the world seems to be moving at a frightening pace. The rapidly processing convergence between the new science and the mystical traditions of perennial philosophy offers an exciting perspective of a future comprehensive worldview that will heal the gap between scientific research and spiritual quest. Such an encompassing new paradigm could become an important catalyst in the evolution of consciousness that seems to be a critical condition for the survival of life on this planet" (1988, 238 – 240, 250, 268-273).

I have deliberately quoted extensively and will leave the work of Grof now without adding justification or argument, for the reader to accept or reject. Just a few comments are in order here, however, to link back to the argument of this thesis. The hylotropic and holotropic domains can be seen to correspond to the realms of being-abiding and becoming-striving. In Grof's testimony, we can see now why accession of the deep intelligence field can produce alignment and healing, and thus guide and provide direction towards sustainable and generative co-existence, at the level of both the individual and in groups of persons.

The fact that Western scientific rationality, in its leap away from the oppression of the Church, threw away the baby of spirituality with the bathwater of the Church, only to found the new Church of first-order science, is an aspect I would draw attention to but desist from defending; it is not central to the arguments of the thesis, but adds some perspective.

6.6 Conclusion

In this Chapter, I have summarised my understanding of four methods drawn from domains other than systems thinking. These are the Process Inquiry at Sumedhas, Cooperative Inquiry, Action Inquiry and Holotropic Breathwork. In discussing the practice and the theory underlying these methods, I have tried to show how they correspond to the systemic ontologies characterised in the previous chapter. In particular, I have shown how they reinforce the idea of the Deep Intelligence Field, and its potential for directing individual and collective action inquiry and producing healing.

CHAPTER SEVEN

Two useful models about knowing

7.1 Introduction

We have seen how cognitive knowing is insufficient for effective understanding and action, in practical terms (chapter 2), as well as in systems theoretical terms (chapters 4 and 5). In chapter 5, ontological models corresponding to these phenomena have been visited, and their relationship to core systemic precepts shown. Chapter 6 has described four methods that make possible the accessions that fulfil the knowing gaps in the theoretical systemic realities. It is now increasingly accepted that the phenomena of such knowings are normal to human experience and, in fact, the real underlying basis of all knowing.

In this chapter, I will introduce an epistemological framework from cooperative inquiry to expand the theoretical foundations of systems thinking. This is called the *four ways of knowing* (from Heron & Reason, 1997), and it adds the dimensionality of three additional categories of knowing to the rational approach. In order to explore this framework, I put myself into a traditional learning situation with an Indian master craftsman as a fieldwork component of this doctoral study, and this is also described.

7.2. The Four Ways of Knowing: Framework for an extended epistemology

The extended epistemology of Heron & Reason (1997, and amplified by Seeley & Reason, 2008) provides a framework for a more comprehensive knowing that includes relevant forms of knowledge beyond those produced through rational analysis, and thus provides a basis for postconceptual knowing. After describing this briefly, I will establish its relevance to the gap in the theory and practice of systemic intervention. Further, I expand on it based on our consideration of the DIF as the ultimate source of knowing.

My application of the concepts from Heron and Reason is intended to bring in at least two additional process details: knowledge of actors that is not of a conceptual (or propositional) nature, as well as a process to apply boundary critique to the subjective understandings of the actors in any given situation. Heron & Reason (1997), in their

discussion of participatory inquiry as a distinct new paradigm, proposed the four epistemological types of knowing shown in **Table 7.1**.

Table 7.1. Ways of Knowing

EXPERIENTIAL	PRACTICAL
PRESENTATIONAL	PROPOSITIONAL

(Source: Heron & Reason, 1997, adapted for presentation in table form)

To elaborate, Heron and Reason argue that there are four basic forms of knowing, which are interdependent. They describe these as *experiential*, *presentational*, *propositional* and *practical*. To begin with a brief explanation of these terms:

“Experiential knowing means direct encounter, face-to-face meeting: feeling and imaging the presence of some energy, entity, person, place, process or thing. It is knowing through participative, empathic resonance with a being, so that as knower I feel both attuned with it and distinct from it. It is also the creative shaping of a world through the transaction of imaging it, perceptually and in other ways. Experiential knowing thus articulates reality through inner resonance with what there is and through perceptually enacting (Varela et al, 1993) its forms of appearing.

...Presentational knowing emerges from and is grounded in experiential knowing. It is evident in an intuitive grasp of the significance of our resonance with and imaging of our world as this grasp is symbolized in graphic, plastic, musical, vocal, and verbal art forms. It clothes our experiential knowing of the world in the metaphors of aesthetic creation, in expressive spatiotemporal forms of imagery. These forms symbolize both our felt attunement with the world and the primary meaning embedded in our enactment of its appearing” (Heron & Reason, 1997, 280-281).

Heron captures the significance of such knowing: “There is one overall point about presentational knowledge which is important for our understanding of the world. It reveals *the underlying pattern of things*” (1992, 168), and, I may add, *our place in and relationship with that pattern*.

“*Propositional knowing* is knowing in conceptual terms that something is the case; knowledge by description of some energy, entity, person, place, process or thing. It is expressed in statements and theories that come with the mastery of concepts and classes that language bestows. Propositions ...are carried by presentational forms – the sounds or shapes of the spoken or written word – and are ultimately grounded in our experiential articulation of a world” (Heron & Reason, 1997, 281).

This is the kind of knowing produced through the application of most systems methodologies, as well as the more traditional sciences.

“*Practical knowing* is knowing how to do something, demonstrated in a skill or competence. We would argue that practical knowledge is in an important sense primary (Heron, 1996). It presupposes a conceptual grasp of principles and standards of practice, presentational elegance, and experiential grounding in the situation within which the action occurs. It fulfils the three prior forms of knowing, brings them to fruition in purposive deeds, and consummates them with its autonomous celebration of excellent accomplishment” (ibid.).

7.2.1. *Experience as the ground for knowing*

According to Heron & Reason (1997), experience forms the ground of all knowing:

“The experiential encounter with the presence of the world is the ground of our being and knowing. This encounter is prior to language and art—although it can be symbolized in language [propositional knowledge] and art [presentational knowledge]. Our world, or the I-thou encounter with a living tree or person, cannot be confused with our symbolic constructs. In terms we use later in the article, while propositional and presentational knowledge are grounded on and symbolize experiential knowledge, experiential knowledge cannot be reduced to either of them. This, we argue, is not a dissociated metaphysical statement; rather, it is an expression of radical empiricism that can be tested through experiential inquiry” (276).

Further, they quote Merleau-Ponty (1962) who insisted that our unrestricted experience of the “lived-through world,” is misrepresented and distorted by the limiting canons of the “objective thought” of positivist science and “dogmatic common sense”.

“Experiential knowing is subjective-objective and so relative to the knower. It is also relative to the given cosmos, but with greater immediacy, lesser mediation, than propositional knowing. Experiential knowing is thus a ground, albeit not an absolute ground, for the symbolic frameworks of conceptual, propositional knowing.

...Propositional knowing can only give mediated — subjective and intersubjective — relativistic accounts. The participatory paradigm goes further and asserts that we cannot have any final or absolute experiential knowing of what there is; in the relation of knowing by acquaintance, the experiential knower shapes perceptually what is there. And this is still so when the perceiving mind is relatively free of conceptual labels imposed on its imaging of reality.

However, the point about experiential knowing is that the very process of perceiving is also a meeting, a transaction, with what there is. When I hold your hand, my tactual imaging both subjectively shapes you and objectively meets you. To encounter being or a being is both to image it in my way and to know it is there. To experience anything is to participate in it, and to participate is both to mo[u]ld and to encounter; hence, experiential reality is always subjective-objective” (Heron & Reason, 1997, 278).

7.2.2 Practice consummates knowing

At the other pole, Heron and Reason describe *practice* as *consummating* the prior forms of knowing, and further as being *grounded* in them. They emphasize the primacy of practical knowing, as it brings all the other forms to fruition. According to Heron & Reason (1997), practice is ineffable at the individual level; at the social level, it generates the ethos of a culture of competence. They describe the core of practical knowing as a knack – a tangible and evident level of skill, but one indescribable in words:

“Skills are not reducible without remainder to any set of verbal statements reporting the skill. As Ryle (1949) put it, knowing how cannot be reduced to knowing that. Practical knowledge, having a skill, transcends propositional knowledge and has its own relative autonomy. At the core of any skill is a knack, an inner key to effective action. The knack is the fulcrum of the skill, its point of leverage on behaviour. You can describe a skill in words up to a point,

but the inner core of the action, the knack, defies verbal description. This is so whether the knack is to do with a physical, technical, emotional, interpersonal, managerial, transpersonal skill, their combinations, or any other kind of skill.

Having the knack is the essence of a skill: it is at the heart of knowing how. And at the heart of the knack is a knowing of the excellence of its doing, which is what makes it a knack. This is a criterion of practical validity which is intrinsic to action and which is ineffable. For each specific knack, it is beyond language and conceptual formulation. Knacks are things you cannot fully report. They transcend all propositional utterance and take you into the autonomous sublimity of action. So any published paper descriptive of a skill or skills is going to be partial, an incomplete and ghostly cipher. It is beset by its own inherent limitations. It needs to be aware of this and point beyond itself to what it cannot contain” (1997, 112).

7.2.3 The social realm of practical knowing

Heron describes the social realm of the practical in these terms:

“...However, the realm of the practical includes, correlative to an individual dimension, a social one. There is not only skill manifest in personal action; there is also a body of practice.

A body of practice, which I also call a culture of competence, is manifest in a profession, a community of practitioner colleagues. It is a social repository of skill, a form of practical social order. It cannot be reduced to an aggregate of the individual skills of those who are active in the profession at any given time. Like any form of social order it is a systemic whole which necessarily includes the individuals who are its manifest parts.

But the elements of that order, those features which make the whole a system, are a dimension of social reality in their own right.

When fully established, these elements comprise a set of shared beliefs. Norms and values which, whether tacit or explicit:

- Delimit the profession or community of colleagues in terms of social positions and roles.
- Prescribe appropriate skilled actions within those roles.

- Prescribe the standards of competence that are relevant to such behaviour.
- Are crowned by an indefinable ethos, a shared valuing of the practical excellence for which the culture stands.

These defining beliefs, norms and values can be stated as a set of propositions and declarations, and it is useful so to state them. But because they define a body of practice which is only manifest when individuals are exercising the relevant skills, and because the core of each skill is an ineffable knack, any verbal account of this culture of competence falls short. The culture as a systemic whole has an ethos which transcends any linguistic description of its values, norms and beliefs.

The ethos of a body of practice can be felt; it can be grasped imaginably and intuitively. It can be invoked through metaphor, demonstrated through literal and symbolic presentations, and honoured by the use of ritual. Like a knack, it cannot be expressed without remainder through language.

The domain of the practical, then, has interdependent and complementary poles: individual skill and a culture of competence. At the heart of the former is an indefinable knack, and the essence of the latter is a felt ethos, a collective knowing how to value a whole body of practice, which also transcends verbal description. This knowing how to value shared competence is not an autonomous, individual knowing how in the way that a knack is. It is intersubjective, communal, the consequence of participating in a shared culture of practical excellence. The guilds of medieval craftsmen were, I believe, a focus for the affirmation, celebration and strengthening of this conjoint practical ethos” (Heron, 1996, 122).

These descriptions, as the last sentence shows, correspond to my idea that craftsmanship, properly understood, is a useful model to explore the pursuit of holistic excellence. It is important to note that the traditional social forms such as the crafts guilds show a tendency to inertia and a slow rate of innovation; the newer methods of collective learning (Chapter 6) offer a renewed possibility of adapting the virtues of craftsmanship to a quest for development:

“Traditionally there has been a fundamental asymmetry between an individual skill and a culture of competence, which represented the established status quo

within its profession. Any radical agenda of transforming practice rested exclusively with the individual pioneer. Even where cultures of competence have promoted research and development, the breakthrough has come through the efforts of one or two individuals, sometimes vying with each other.

With the advent of co-operative inquiry and related forms of participative research, cultures of competence can become self-transforming as collectives. A co-operative inquiry group that is busy with transforming practice within a profession, is a local culture of competence that has two tiers. As a group of practitioners within a given field, there is a shared ethos in knowing how to value the newly acquired skills. And as a group of collaborating researchers, there is a shared ethos in knowing how to value the inquiry skills involved in acquiring the new professional skills. Torbert (1991) also writes of a community of inquiry within a community of practice” (Heron & Reason, 1997, 122-3).

I borrow these words to underline my call to the community of systems practitioners: let us collectively inquire into the knack and skills for systems *being* and systems *doing*, as much as we have mastered *thinking* in systemic ways: this requires attention to the very process of cognizing: all of these dimensions or aspects interpenetrate one another in fundamentally inseparable ways.

7.2.4 Critical subjectivity

Heron and Reason make the case for a “critical subjectivity” that attends to both the grounding and the consummating relations between these four forms of knowing (1997, 282). They say this is very similar to Torbert’s (1991) “consciousness in the midst of action”, and elaborate that an awareness of our perspective – its authentic value and its restricting bias – echoes Torbert’s (1987) “refraining mind”, Bateson’s (1972) “Learning III” and other similar ideas in the literature (ibid.). It must be noted that, in their participatory paradigm, they give primary importance to practical knowing, treating it as of central intrinsic value, whereas most other paradigms only acknowledge propositional knowing as being of intrinsic (or instrumental) value.

Unlike the tortuous problems that a solely rational (propositional) philosophy presents in attempting a more holistic understanding (see, for example, discussions of various philosophical perspectives in Ulrich, 1983, 24,26-30,41-105; and Midgley, 2000, 21-

28), the above extended epistemology provides a natural basis to attain a critical subjectivity. The significance is in realizing that *the differing perspectives or modes of knowing are not patterned in an oppositional relationship, but are mutually supportive and can come into play simultaneously.*

It is the culturally situated limitation, especially in the modern West, in self-understanding that we are usually only consciously aware of one or two of these modes at any single moment in time. This is why traditions such as yoga, certain action research approaches (e.g., Bradbury & Reason, 2006) and some communities of practice like the *Sumedhas* in India (chapter 7) specifically promote a conscious increase in simultaneous awareness, and the capacity for alignment and a conscious cycling flow across the four modes of knowing.

In particular, training in arts, crafts and other bodily practices promote attunement to, and reflective regulation of, the different ways of knowing. This involves fostering the ability to attain a temporary suspension between the *process* of experience and its crystallized *content* of knowing. All too often, our practical, calculating mind rushes to immediately classify, ‘name’ and organize our sensual experience in terms of what we already know or recognize, denying the immediate newness and rawness of the experience-in-the-now. Our description of the experience (e.g., ‘another sunset’) is then robbed of any vitality and originality that it could have held for us. Yet, once we have made that automatic jump, there is little to recover of the original wonder, fragrance and freshness of each such encounter, which in the hands of an artist, poet or a child, is depicted magically. Such an automatic crystallization appears as an unassailably solid, definitive knowing to our over intellectualized ways, yet it can be bereft of new learning and deprive us of the possibility of an original response.

7.2.5 Understanding Presentational Knowing

For those who are primarily habituated to working solely with propositional knowing, some description of some forms that constitute propositional responses would be a useful indication of the range of possibilities for working with presentational knowing.

“Alternative ways of presenting interpretation must be experimented with, including film, novels, drama and plays, song, music, poetry, dance, paintings, photography, sculpture, pottery, tool-making and architecture. Each of these representational forms speak to the problem of presenting and doing

interpretation. By experimenting with them, the interpreter enlarges his or her interpretive horizon” (Denzin, 1989, 138).

Reason & Hawkins (1988) give a useful classification of stories that are a response to other stories: replies, echoes, re-creations and reflections:

- A reply is the storyteller’s reaction to other stories, expressing the emotions and associations to which they give rise.
- An echo is the storyteller’s personal story on the same theme or themes heard in the other stories.
- A re-creation is the storyteller’s own remoulded version of the other stories: “This could be a poem, a fairy tale, or some other kind of story; it may be at the same “level” as the original, or move toward the archetypal level” (1988: 92).
- A reflection is a story that ponders the other stories: it is about them, standing further back from them.

Artists are used to reworking material like this, with an inner listening to what is evoked and drawn out from deep within their subconscious mind in each recreation; Heron (1997) suggests that such inquiries, which sustain their sense-making, cycle after cycle, primarily within the presentational mode, with a secondary and subordinate interpretation of the presentations in propositional form, may become important in future.

“This discipline could lead to a rigour of expressive form, and a mastery of radical imaginal meaning. The inquiry group becomes an artists’ collective, demonstrating art as a mode of knowledge, giving powerful access to the pre-predicative, extralinguistic world which phenomenologists tend to write about too much in analytic mode. The method affirms the metaphorical nature of our understanding” (Reason, 1988b).

Reason & Hawkins refer to the propositional and the presentational as explanation and expression. They argue that: “Any complete model of inquiry must eventually show how these two complement each other ... Thus we create between them a space for dialogue and for dialectical development, so that a theory may be illuminated by a story, or a theory may clarify a myth” (1988: 83-5).

7.2.6 An epistemology of presentational knowing

Seeley & Reason (2008) examine presentational knowing in much detail, in order to increase awareness of it. They attempt to generate an epistemology of presentational knowing, which they title as “Expressions of Energy”. They identify the stages in our relationship with reality that could substitute for our commonplace jump from encounter to propositional description. They describe this process as involving the progressive interlinked stages of *sensuous encountering, suspending, bodying-forth and being in-formed*. To quote Seeley & Reason:

“...Doing presentational knowing is an experience in itself, informing experiential knowing as well as being informed by it. If we perceive through experiential knowing, and we create through presentational knowing, we are interested in how this perceiver-creator interplay is imperative if we are to care for ourselves, our societies and our planet” (2008, 43).

In presentational knowing, a ‘space’ to ‘occupy’ liminal zones in between contradictory ideas (or ‘knowings’) is generated. The contradictions take multiple forms: what we seem to perceive as opposed to what is expected or ‘normal’; between various sense perceptions reporting seemingly different things; between various levels of knowing that we are more or less conscious of (such as when a discussion with a colleague appears unremarkable on the surface, but one experiences an inexplicable tension in one’s jaw, indicating an emotional undercurrent); etc. Practicing engagement in a conscious liminality through presentational knowing therefore involves an existential tension, the creative resolution of which can facilitate the move to a more comprehensive view.

7.3 ‘Knowing Differently’: Methods for an Extended Epistemology

I have discussed the usefulness of the extended epistemology of Heron & Reason (1997) to the development of an understanding of what it means to know differently. I have also dwelt on the primacy of practical knowing, and considered presentational knowing, with a quick overview of an epistemology of presentational knowing from Seeley & Reason (2008). I will now touch briefly upon the extensive application of these ideas in certain intervention settings brought together in Liamputtong & Rumbold (2008). They signify the growing body of work reflecting the ‘reflexive turn’ in methodology, and situate their theorizing in what they refer to simply as “arts-based

and collaborative methods”. Following the discussion of Liamputtong & Rumbold, we will finally return to the topic of systemic intervention.

Liamputtong & Rumbold (2008) are not using these two labels of “arts-based” and “collaborative” research methods in the spirit of academic territory marking. They seek to use the most open and easily understood of the various labels available and employ these to embrace a plurality of approaches, the bridging of gaps between disciplinary boundaries, and the bridging of gaps between researchers and participants.

‘Autoethnography’ is another term used for arts-based methods, and various action research approaches are identical to the perspectives they label as “collaborative”.

Liamputtong and Rumbold characterize arts-based inquiry as a “mode of research, reflective practice, education, therapy, art-making and community-building” (2008, p. 10). While the collaborations they have reported take many forms, my specific interest is in the projects they discuss that address ‘cultures of silence’ surrounding oppressed, marginalized and derogated social groups (also see Friere, 1972). An obvious concomitant process is the examination of the subjective boundaries of the inquiring agents who deal with these cultures of silence. This kind of analysis is integral to boundary critique (Midgley et al, 2007); so, if Liamputtong & Rumbold (2008) have already demonstrated that methodologies explicitly embracing ways of knowing beyond the propositional are useful for addressing the culture of silence, then there is a strong rationale for bringing ideas and methods from these into systemic intervention.

As Liamputtong and Rumbold have reported, these new methods

- access experiential, practical and presentational learning;
- are suitable for non-literate participants (the fact that almost all Western systems approaches are dependent on literacy is a significant obstacle to systemic practice in many developing countries);
- provide a rich way to blur the researcher/practitioner boundary (see Boyd et al, 2004, for the relevance of this blurring to boundary critique and systemic intervention); and
- constitute a “radical ethical aesthetic” that enhances the potential for ethical relationships and social change (Liamputtong & Rumbold, 2008, pp. 3-4).

In addition, see Garman & Piantinada (1996), Barone & Eisner (1997) and Seeley & Reason (2008) for a deep mine of resources based in an explicit, extended epistemology that could also usefully inform systemic intervention practice.

7.4 ‘Knowing differently’ and systemic learning – the scope for research

The case for the application of an extended epistemology (after Heron & Reason, 1997) to systemic intervention can now be summarised, building upon my arguments in Chapter 6. Ulrich (1983, 1993, 2001) and Midgley (2000) have both argued for the centrality of boundary critique to systemic learning. While this makes sense in terms of analyses of boundaries in the wider world, Midgley (2011) also claims that boundary critique can be applied to ‘knowledge generating agents’ (i.e., those applying the boundary critique to the wider world). There is only one case study in the literature of detailed, collective self-reflection on the identity and agency of the researchers using boundary critique (Midgley et al, 2007), and it is my contention that further work is needed on processes for examining the boundaries of agents and/or knowledge generating systems.

Moreover, Midgley’s (1992b, 2000) contribution to boundary critique borrows from the language of anthropology to propose the systems theory of marginalization, which can be used in understanding some types of power relationship between stakeholders in interventions. Bateson (1972), among others, has argued forcefully that a purely rational analysis in such matters is bound to mislead. My own experiences confirm Bateson’s writings, and show that other ways of knowing (e.g., using arts-based methods) can open new dimensions for our understanding of phenomena like marginalization. They can give rise to counter-intuitive and often seemingly paradoxical insights.

Hence, firstly, some new approaches are needed for the application of boundary analysis to the subject, or knowledge-generating agent. Secondly, we need to go beyond purely propositional models. This is particularly important for intervention in many developing countries, where there are commonly high levels of political and social marginalization, stabilized sometimes over centuries of social habit and ritual, which can neither be appreciated nor resolved through propositional analyses alone. Indeed, the languages of many indigenous people facilitate meta-rational understandings of their (human) conditions, but Western science has historically

labelled these ‘primitive’ and has made them (in Churchman’s, 1979a, terms) into the enemies of rational analysis (also see Smith, 1999). Indeed, the very use of literacy-based tools, and a recourse to fluency in analytical language, can exclude the central stakeholders from participation in any engagement to improve deep-seated marginalization in developing countries.

In my view, these arguments constitute strong reasons to explore the expansion of systemic intervention (theory, methodology and practice) in terms of an extended epistemology.

7.5 Knowing differently in other traditions – an exploration

I have outlined in the preceding section a set of theoretical arguments, which constitute a case to explore the extended epistemology further. In order to undertake this further exploration, I studied two Indian traditions, which I was already somewhat familiar with: handicrafts and classical music. While many traditions, including Eastern traditions in crafts and the performing arts, have long recognized the validity of alternate ways of knowing, these are also now the subject of much qualitative research, as evidenced in several recent books (Minkler & Wallenstein, 2003; Irwin & Cosson, 2004; Finley 2005; Hesse-Biber & Leavy, 2006; Reason & Bradbury, 2006; Greenwood & Levin, 2007; Knowles & Cole, 2008; Liamputtong & Rumbold, 2008).

The possibility of finding answers from these kinds of arts and crafts that might assist in reducing the current limitations in Western thought is a growing refrain in contemporary studies on traditions of knowing. For example, Sennett (2008) has built a nuanced and painstaking argument to show that handicrafts hold special promise to reorder meanings of work, productivity and sustainable development in an era of critical global challenges to these concepts.

7.5.1. Ways of knowing in Indian handicrafts

I offered myself as the subject upon whom research was to be conducted. I took an apprenticeship under a Crafts Master in India for 6 months, learning sculpture, followed by dialogues with him and another traditional teacher of classical Indian music. Contemplating the full rigor and discipline of the teaching practices in these traditions, and employing arts-based research methods, I tried to access the underlying

aspects of the development of general, transferable knowledge and skills, especially the value of the experiential, practical and presentational aspects of knowing.

The attempt has been to reverse the long gaze of the researcher in the Western tradition upon his subjects (Smith, 1999) and recover some of the sacred ethic of knowledge seeking as it is in Eastern traditions. It is my speculation that an orientation to ‘receiving’ knowledge might perhaps enable a more holistic understanding to emerge; in contrast to an attempt to tease and tear it out with logical discourse alone.

I selected to apprentice under Rajasekharan, an accomplished master sculptor, who, for the most part, creates idols for installation in temples in the strict Indian tradition. He also produces modern sculpture. His work is in granite, and I could have perhaps chosen an easier medium, such as wood. However, I wanted to learn under someone who was comfortable with both the traditional and the modern, and who would see the effort as a collaborative inquiry; I had earlier listed a number of artisans and eventually narrowed down on him for this reason.

My apprenticeship was preceded by several lengthy preliminary dialogue sessions about our respective questions regarding the place of his sculpture in contemporary times, his own role, and how his vocational practice had informed his ways of knowing, doing and being. I asked him to initiate me as he would any other learner, and after I had completed my first learning task (carving a small pillar ornament), we went into an extended set of discussions on what I discovered through that process and where we were in relation to our common questions and exploration.

During my apprenticeship, I often watched him and the other sculptors in his team, and took photographs and video recordings. After completing my own task and proving myself sufficiently to enter into the fold, I interviewed a few of the other apprentice sculptors. All my dialogues were audio recorded, transcribed and translated into English. I made a few sketches, responded with a few stabs at poetry and kept journals of my experiences. These methods, where I did not attempt to make the recording of my experiences or the analysis of transcripts ‘scientific’, but rather attempted an authentic experiencing and narrating of the encounter, are part of the growing stream of arts-based research that I described earlier.

I would like to very briefly narrate one part of my experience and draw insights from it, without, just now, going into all the details of the conversations, literature search and other aspects that helped to clarify, corroborate and ratify my findings.

Most readers will have experienced the process of learning some art or craft, or will have encountered some narrative about such a process. What seems like childish ease when the teacher performs becomes nightmarishly difficult as soon as the first steps into the journey of acquiring skills are taken. Progressively, one is led through a series of planned steps of skill acquisition. At first, one is taught separate bits like an alphabet of a new language, and one subsequently learns to weave these together. Then, progressively, one begins performing the art or craft, embarking on a series of nuanced learnings about how to refine skills and infuse creativity into the performance. At many stages along the way, the average learner is confronted by his or her own inadequacies, at both the level of mastery of the physical skill as well as the mental disposition essential to its successful deployment.

In my own case, after learning to use a variety of chisels and hammers to hew down the stone to a rough shape and progressively use finer instruments to refine it, I was confronted with the key step that seemed to take a large part of the time of my colleagues: paring down the nearly shaped object, in a series of fine, quick strokes that I called ‘peeling’, to arrive at its eventual, final form. These strokes involve using a fine chisel and its corresponding hammer to run a line down any face of the object (an idol, say) that creates a very shallow channel like a rivulet that extends from one end to the other of that face. So, let us say for simplicity that it is a square, flat face that needs to be worn down by a millimetre for the final form. These strokes can then be run from the top edge right down to the bottom in one continuous flow; the chisel never being lifted, but being drummed on or tapped at a high speed by the hammer until the other edge is reached. The next stroke is then laid adjacent to this one – if the first one started at the leftmost edge, the next one would be just to the right of it, again one movement from top to bottom edge; then the next channel to its right, until that whole face of the stone was peeled like an apple, using adjacent strokes.

I could never achieve the necessary fluency. My strokes would have to cease halfway down one line, because of some discomfort or distraction. Alternatively, the rhythm might waver, producing one large cavity in place of a small chipping that would destroy the uniformity of paring and establish a new problem to solve. I would despair,

hand over the bit for someone else to correct, and redouble myself to the task of mastering what seemed to be a simple next progression in skill, but which proved elusive to me and drew sympathy and smirks. I never did master this aspect, but in the effort, I slipped into what has been called the ‘zone’ – that mental state where your total attention is focused on the task and there is a heightened state of sensory awareness. I have often experienced this – many years ago in my youth, while in a game of sport or on a long distance run. However, this time, I was aware of the changes that this was bringing about to my own state of mind and body. I realized that my sense of time had changed: the duration of that period of focus seemed to dilate and make speed of response very easy. Simultaneously, the memories and knowledge of all the past hours of instruction were seamlessly flowing into the action, without conscious rational process, to inform the shifts and corrections my stroke making needed on the fly. In the same way, all the data about the final future outcome that I desired was informing and flowing into each stroke without conscious striving. So, in that ‘presence in the moment’, the ‘past’ and the ‘future’ too flowed into and informed the ‘present’. This has been described and explored in various bodies of literature, such as the *Yoga Sutras* of Patanjali (Satchidananda, 2012); and for a contemporary example related to systems thinking, see Hodgson (2013).

In other sessions, I noticed that, similarly, several other things such as the normal sense of space, the sense of me-and-object, and cause-and-effect, were being blurred and remade in the context of my experience. Discussing this later, and returning to consult Sennett (2008) and Crawford (2009), I reflected on aspects of my experience that have been pointed to by other authors, but have not been made strongly explicit in their studies. I fathomed that practices such as these, requiring ‘ten thousand hours’ to learn, can alter one’s ontological understandings; challenging certain ‘common sense’ assumptions about reality that our culture transmits to us as children with little reflection. These assumptions might include the nature of causality (often perceived as unidirectional), the relationship of the ‘self’ to the ‘rest’ (with people variously perceiving themselves as either largely autonomous or largely constrained) and constructs of time and space (often assumed invariant). I became aware that all these assumptions and others (such as the relationship between continuity and change) were thrown into question by my experiences.

7.5.2. Preliminary learning outcomes

Examining the pattern of teaching that the other apprentices were being taken through, and discussing the method and rationale with Rajasekharan (and later, Ashish Sankrityayan, a music teacher), allowed me to understand that craft teachers employ a conscious and deliberate process to achieve breakthroughs and sustain the momentum towards a fuller understanding of these complex knowledge systems and practices. The teaching typically consists of stages, such as the following:

- Entry usually commences with a discussion and reflective articulation of the personal motivations and goals informing the choice of seeking to learn the craft/art/discipline. Another approach is for the teacher to prescribe exercises to be performed or to teach for just a short period. This provides a basis for the teacher to judge the learner's propensity towards the practice (the nature of his or her talent and temperament); his or her capability and willingness to endure a long and hard apprenticeship; and whether there is a fit between the student's approach to learning and the master's teaching style. As an outcome, the teacher may then refuse to take on the learner; prescribe specific further training or practice towards achieving a specified minimum level of skill for later admission; recommend another master whose style of craft and/or teaching might better match the learner's temperament; suggest that the particular craft is not suited to the skills and temperament of the learner; or proceed to discussions about the terms and conditions of the teaching.
- Sometimes there can be a ritualistic exchange of mutual commitments between student and teacher, with clarifications of expectations, especially by the teacher to the learner. In the case of certain established masters, past student experiences create a 'folk lore' that amply describes the teacher's/school's expectations; the very act of acceptance of the student automatically invokes these commitments.
- At this stage, there is an initiation into the learning, with a course of practical skill acquisition through a specific and graded series of exercises. This series of practical exercises is designed to lead to intuitive discovery of an underlying conceptual framework that informs the discipline. The symbolic language that expresses the nuances of the craft (for example, staves or other notations for musical notes) is taught.

- When these preliminary skill alphabets are mastered, and there seems to be some intuitive grasp of the conceptual framework, a theoretical exposition is provided, and the next layer of the scaffolding is embarked upon in similar manner. At this stage (and at several other stages), the student is required to demonstrate a grasp of the links between the theory and the practice. This structured approach clearly involves all the four ways of knowing: experiential (in the process of working the material – stone or vocal chords); presentational (in finding similes or metaphors to communicate with the teacher at this nascent stage; and/or, in the process, learning/discovering/formulating a symbolic language); propositional (in extensive dialogues that will focus more and more on the theory behind the craft); and, in the main, of course, practical (practice, practice, practice!).
- As alphabets lead to words, sentences and little essays, further grammar is imparted. There is a vast library of known words/phrases, rules and techniques for deployment that is assimilated at this practice stage, which can be extended and tested until the entire library (of performing skill) is available reflexively for the student to use. Thus, the learning is slowly transformed and distilled into a form of free, reflexive flowing and performance that is almost akin to an experiential mode of learning, as the learning from the other three modes are condensed and integrated.
- When essaying is attempted, some doubts and problems may be encountered. The methods to deal with these are demonstrated by the master, and this experience leads the student to work on the correction/refinement of techniques.
- The student begins to acquire an individual style. The master has already noted the student's unique talents, proclivities and weaknesses and would have shaped practice accordingly. As the student engages creatively now, the master begins to refer the student to known pieces executed by great masters throughout the ages. This however, is always done with reference to specific points in the students' exploration and struggles; he or she is pointed to those pieces or their elements that will help expand his or her grasp of the creative possibilities. The emphasis is not necessarily on emulation but on the endless possibilities for the resolution of creative problems. These forms of learning inculcate a practiced knowing, along with an automatic reflexive reference to vast libraries of practices and symbolic forms that mediate critical-creative choices of what to apply in various specific

contexts. The student becomes accomplished and confident in the performance of the art. At this stage, he or she will be expected to commence teaching duties (if no students have already been signed up under his or her tutelage). The master initially supervises the delivery of these lessons. The ability to understand the struggles of a novice learner and assist him or her in overcoming them is another step in the integration of learning for the practiced student.

- In the *guru-shishya parampara* (the Indian lived apprenticeship tradition), the master teaches and demonstrates, not only the acquisition of a vocational skill, but also all the aspects involved in building a successful career or enterprise, marrying together other practical skills of client engagement, performance and time and money management. At this stage, the ethics and larger professional aims and social roles and contributions involved in the craft are discussed.
- Sometimes, at the final stage, there is a ritual; often a public performance that announces the ‘coming of age’ of the learner as an accomplished craftsperson. However, this is implicitly or explicitly tied to a reaffirmation of the ethos and values of the craft, its professional ethics and social purpose(s). The learner is pronounced an adept practitioner and is conferred a professional name or honorific title (if deserving).
- The processes at some of the above stages involve sustained, arduous practice and help the student discover a participative orientation to the cosmos, rather than a neo-positivist or phenomenological one. This shift is produced because it is not possible to pursue the vocation without attention to varying constraints and limiting factors. External constraints, such as the uncertainties involved in the nature of the material being worked or finding the problem that needs to be solved, result in diluting a phenomenological perspective. Likewise, being forced to pay attention to internal limitations reduces the slant to a positivist approach. This participative orientation is most often the underlying ethos in the Eastern philosophical traditions that informs performing art and craft traditions.

Reflecting on the above process, I see a consciously designed cycling through the four ways of knowing. This is based on the recognition that a problem – a learning barrier, paradox or impasse – in one mode can often only be dissolved by an understanding or resolution of the problem from another way of knowing. For example, the learner is

completely perplexed at how to combine two separate elements of skill in a way that achieves a certain result (practical knowing is frustrated). Further elucidation of the theory (propositional learning) provides a means to communicate some kinds of insight that cannot be grasped through action alone. Alternatively, a demonstration by the teacher helps attend to the error and change the approach, leading to a new round of practice. Indeed, some masters create such a heightened tension around demonstrating the craft that the student is compelled to pay undivided attention; in effect, engaging with the demonstration experientially. So it would seem that deepening learning in one mode might sometimes be dependent, not only on the level achieved within that mode, but also on the felicity achieved in one or more of the other modes.

The conscious design that teaches in specific modes and switches to other modes is also a deliberate, built-in safeguard against the generation of an instrumental orientation. On reflection, we can see that great development in only one mode – say, excellence in theory alone, or in practice alone, can have unforeseen consequences for the value of such knowing and its deployment – both for the individual and larger systems. It appears that deliberate design across these modalities helps anchor the knowing in an overall context of its value, usefulness and limitations (Sankrityayan, 2013). For example, a mere theoretician of music may be able to pen some pieces that appear remarkable, but without reference to the practicalities of how they can be played with a specific instrument, they may turn out to be unplayable, and remain merely in the realm of muse. On the other hand, a practitioner who believes that theory is useless and impractical is constrained by the limits of what his or her approach alone can obtain, and is not informed by the learning of other practitioners (also see Jackson, 1987a; Flood, 1989).

Therefore, to summarize, the systematic teaching approaches in some of these traditions can equip a variety of learners with the skills to:

- deepen capacities in each of the four ways of knowing;
- remain aware of which one they are accessing or deploying; and
- learn to consciously cycle across the four ways or use them in tandem in order to deepen a holistic understanding.

The process of learning can be conceptualized as the expansion of boundaries. The teaching approaches used by Rajasekharan and Ashish in inducting me into sculpture and music can be shown to expand boundaries in at least three ways:

- Building intellectual and moral capabilities, since the comprehensive approach to skilling as a vocational enterprise, as well as its location in a theory that encompasses its social, ecological and moral dimensions (amongst others), requires a great deal of practice in both problem finding and solving. This has also been described in the literature in some considerable fine detail by Sennett (2008) and, especially, Crawford (2009).
- Deepening the capacity for abiding in liminal zones (despite ambiguity about one's own state of mind and any required response), thus increasing tolerance and inviting new learning, as my example of 'peeling' has briefly described. Although I did not overcome the problem of peeling, I could see that a resolution would have depended on some form of recasting the way I held the tools and applied pressure: it seemed annoyingly effortless and graceful when performed by more practiced sculptors. The idea of abiding in liminal zones has been described by Herrigel (1953), Sennett (2008) and Crawford (2009). Often, the process of mastering complex routines appears to be paradoxical in terms of the skills or approach to be employed. For example, a common frustration in working on many materials and practices is that of encountering a resistance that does not yield when moderate force is applied, but abruptly yields with a breakdown of the material when pressure is only incrementally increased. Sennett (2008, pp. 220-1) notes that dwelling productively in frustration depends on learning to reformat or recast the approach, to be patient, and finally to identify with the resistance rather than try to overcome it with brute oppositional force. Such learning, practiced continually, surely begins to inform the craftsperson's attitude to life in general. Thus, learning to abide in liminal zones allows for the identification/conceptualization of apparent paradoxes that can then be addressed, allowing boundaries to be crossed that might initially have appeared unbridgeable.
- Expanding awareness beyond apparently 'common sense' ontological assumptions; for example, about the nature of causality, the relationship of the 'self' to the 'rest', constructs of time and space, and awareness of continuity and change (briefly touched upon in my example) can come to be rethought. This has previously been

described by Herrigel (1953), although not in these terms. The result is changes in intuitive, systemic appreciation, where boundaries appear to dissolve and reform in different places, facilitating changes to received wisdom when reflected on through propositional knowing.

Overall, systematically cultivating such a learning process can engender, incubate and support a move to a more participative and systemic worldview, away from a positivist or phenomenological perspective. Clearly, an enduring basis for a habitual increase in self-reflexivity, and thus an increased ability to foster a boundary critique of the self, is created by: (a) challenging commonplace ontological assumptions and philosophical orientations; (b) reforming habits; and (c) inculcating deep perceptual, sensory and performative skills through a sustained practice that ingrains these methods in the person.

7.5.3 In Conclusion

I can now summarize the trajectory of this inquiry and offer some preliminary formulations. Churchman (1970) was the first to argue that the boundaries used to delimit problem definitions are not given by the structure of reality, but are conceptually imposed and need to be reviewed. It therefore behoves us to sweep in and include as many affected people and aspects as we can think of, but without compromising intelligibility. Ulrich (1983) raised the ante and sharpened the political understanding of this issue by posing a series of questions on the justifications for our boundary choices, such as who should benefit? Who should decide? Moreover, what should be the purpose? Midgley (1992b, 2000) then built on this theory of boundaries to describe processes of marginalization in terms of social rituals that function to maintain social structures. Midgley (2000, 2011) also identified that identical processes of judgment are involved in defining the boundaries of the system in the world and that of the ‘knowledge generating system’ that creates this system description.

Taking this work a stage further, I argue that marginalized people and cultures (especially in developing countries, where marginalization is often entrenched over generations) can remain at the fringes if solely rational means of knowing are employed in systemic learning and intervention. What is at least equally, if not more, important to recognize, however, is the mirror side of this phenomenon: how some of

the vital potential of these marginalized elements can be lost to the dominant culture and people, from amongst whom systemic learner-interveners are often drawn.

Therefore, the recognition of these forms of knowing can also provide to learners some redemption and the opportunity to rediscover and reintegrate the shadow aspects in the dominant culture.

I fear that, unwittingly, the 'sacredness' ascribed to rational knowing in the systems community could generate strong taboos about other forms of knowing, keeping it forever on the margins of systemic intervention and thus preventing us from knowing and learning more about our world. Importantly, there is a danger here of a false evangelism masquerading as an emancipatory and participatory approach. Quite possibly, if perhaps ironically, people who possess only non-literary knowing may provide us the seeds for integrating the 'enlightened' and 'shadow' sides of our culture, at both the social and individual levels. Socially, for example, there may be clues about ways to address problems created through the dynamics of our modern economies, such as the ecological crisis; and individually, those without literacy might help to put interveners in touch with aspects of themselves.

CHAPTER EIGHT

Applying the Four Ways of Knowing to Systemic Learning

8.1 Introduction and background

Having explored the four ways of knowing framework, my next task was to examine how it might be usefully employed in a systemic intervention. This was the aim of my next fieldwork project, which is described in this chapter. The insight arising from this project led me to expand the four ways of knowing framework with the addition of one more element corresponding to the deep intelligence field. The anticipatory present moment framework introduced in Chapter 5 is integrated with these to describe the knowing process more fully. I call this synthesis the *Knowing Universe of the Present Moment*.

We will next discuss Hodgson's (2013a) *Praxis Learning Cycle* (PLC), and I shall show that this accurately reflects the complex real life process of learning over time. I end this chapter with the argument that the PLC in conjunction with the *knowing universe of the present moment* provides us an effective ontoepistemology for systemic knowing.

In the next chapter, I shall finally synthesize the approach that I shall call *Immersive Systemic Knowing*, by elaborating the features of the synthesis of the elements described in the previous paragraph.

Armed with my insights in learning with Rajasekharan and Sankrityayan, my next logical step was to attempt to infuse systemic practice with these expanded ways of knowing. I had commenced my doctoral studies with a clear idea of what this application would be, yet circumstances forced me to abandon that project and find a fresh situation in which to apply my learnings.

I had entered my doctoral programme with the idea of producing a design for a Crafts University that would foster mutual learning, collaboration and research between the crafts sector and other 'modern' sectors of the Indian economy, such as industry and higher education (especially in the fields of design, and management in organisational and social development contexts). There has been much discussion in India, from the time of political independence, about finding genuine ways to embrace modernism without relinquishing the strengths of a vast, living culture with its own strengths; yet

no intellectual contribution has provided an adequate practical means for this. I was inspired by several experiences and small studies showing how many of the flourishing modern sectors in the Indian economy were rooted in the country's cultural legacy, as well as the Korean example of Incheon City – a planned development that was designed to create dialogue and collaboration between traditional craftspersons and modern industry, as a way of infusing a creative edge to that industry. However, I had to abandon this idea as my PhD progressed, for two reasons. One was that a previous highly successful intervention by me in the sector (Rajagopalan, 2011) had led to certain 'political' rifts coming to the fore, making the proposed host organisation for my intervention unavailable to me⁴. The second problem was a major change in the national government in India, as a new political party assumed power⁵, making the climate at that level unreceptive to my ideas.

⁴ I had some years ago been commissioned by the Crafts Council of India – a premier NGO, to write a white paper on the sector. This report pointed to four key findings – one, the sector was a major contributor to the national economy in significant ways – being the key earner of export earnings, the only sector to have consistently grown its exports after economic liberalisation, and the second largest source of employment in the economy. Two, although these accomplishments were evident on a cursory analysis of available data, the data itself was very weak – either mostly missing or considerably under-reported. The under reporting was a direct outcome of specific and deliberate policies in the accounting of national income and GDP shares from Census data. I had stumbled upon an overwhelming argument to end this eclipsing of basic statistics on an evidently large and significant sector. Three, with historical aberrations in the governance mechanisms for this sector, there was a catastrophic overlooking of its significance, and key government functionaries were proclaiming it as a 'sunset' industry. Four, this oversight pointed to an inability to overcome a mainstream mind-set that the Western model of industrial-urban growth was the only path suitable to India, and to recognise the enormous potential for deploying significant technological and design knowledge from this traditional sector to contemporary requirements, by designing effective bridges to modern industrial research and development. The two were held as opposed and discrete poles, although the reality is that the traditional cultural heritage as well as the modern sensibility and its ethics both course through the veins of every Indian. My paper was accepted with alacrity by the Planning Commission of India – a body vested with shaping the overall policy directions for the Government of India. Immediately, a special focus on the sector was introduced into the Sixth National Economic Census that was already then under rollout, and steps towards an amendment to the framework of the National Accounting Statistics to incorporate aggregation and reporting of census data on the sector in routine public reports were initiated. However, the fallout of these outcomes for me personally was staggering. This study was a result of concerted strategic changes that were being introduced over a 7-year tenure at The Crafts Council of India (CCI) by Vidya Sastry, the Chief Executive Officer (also my wife). This was a body composed of the wives of India's richest industrial tycoons. There was probably some dismay in those circles about this 'revolutionary' kind of activity, since until then, the CCI had confined itself to tame one-off marketing events that sold handicrafts in the cities. Vidya had also set up a project to deliver quality education to the children of artisans, which had shown great results and promise, but was equally interpreted as alarmingly reformist. Therefore, she was summarily relieved of her position at a day's notice with no explanation; moreover, the Council passed a resolution not to engage in further research, while also rearranging the governance of the artisan children's education project in 'acceptable' ways!

⁵ Even before this happened, other curious changes were wrought. The key government functionary who helped CCI and me steer the changes (action on the revision of the framework of the National Accounting Statistics and

8.1.1 Purpose

By now, I had narrowed my objective for this second fieldwork project to experimenting with the integration of the four ways of knowing into a systemic learning approach.

8.1.2 Learning Approach

I pursued the possibility of testing my ideas in a Centre for Systems Studies consulting assignment with a UK police force, but that option was dropped after exploration: what the police wanted would not allow the use of methods other than those usually associated with rational-analytic systems thinking. These developments led to a situation where I did not have a project for testing my ideas in practice. I decided to go back to India and invoke my network of contacts to generate a lead. I travelled in the second week of July 2014 and obtained prompt responses from all of the six persons to whom I had written. Three organisations offered to host my research. I chose a leading corporate training academy (CTA) over the other two.

The two other organisations were a charity and a social science college. I reserved the charity for deployment as a backup in case another intervention fell through, since their availability and support was highly dependable. However, this dependability arose from my position as a Trustee, and I was also concerned about the potential conflict of interest, and hence precluded this as my first choice. The college also engendered some (albeit lesser) possibilities for a conflict of interest, as it was a fresh collaboration between a former employer of mine and a major social science university. There were ambiguities about loyalty expectations from me (from my

preparation of the protocols for inclusion of the sector in the Sixth Economic Census) through multiple labyrinths at the Planning Commission, the Office of the Development Commissioner (Handicrafts) and the Ministry of Economics and Statistics, was summarily transferred out into an obscure role in a distant department. Within a year, the Planning Commission itself has been disbanded and replaced with a new mechanism by the right-wing party that is now in government. This party is completely wedded to neo-liberal economics as well as strongly entrenched in the crony capitalism that pervades the Indian scene; it seeks consolidation of a fundamentalist idea of Hinduism which involves a tokenistic nod to cultural heritage, but in fact sees such activities as handicrafts as obsolescent (although policy actions are quietly carried out in unstated ways and disguised behind the token gestures and theatrics).

previous employer versus this nascent organisation), and the entry path for me was not as clear as it needed to be to facilitate a timely fieldwork study.

In contrast, I did not have any previous knowledge of CTA. It interested me that they were in the training (thus teaching-learning) space. I was introduced to them by a former colleague, SS. SS and I had worked together two decades earlier, in a project to revive handicrafts. This project experiment was a pioneering attempt to bring the modern and traditional sectors together, and ours was a bond forged in a highly charged learning organisation. The context was one where funding promises were renegeed upon, and the team then continued working in the communities we had started engaging with by raising funds ourselves, displaying much integrity and grit. We had thus built a bond of great trust and mutual respect. SS had subsequently moved on to become a fulltime monk in a Hindu order, but he visited me regularly. He had recently accepted an advisory role at CTA, but, in keeping with his monasticism, his position in the organisation was of an insider-outsider – he was trusted and privy to strategic management concerns, but at the same time was personally uninvolved in the politics, since he had no career or other benefits at stake. He accepted a consulting fee that went to support the ashram where he belonged.

Sai and I had applied System Dynamics to the craft sector, and he was acquainted with other work in the systems tradition, such as that of Stafford Beer. Given that SS understood both systems thinking and my desire to apply this to the Indian developmental context, he was a perfect partner for my research. He was also familiar with the theatre methods I used, and I spent some time describing to him the four ways of knowing framework. SS's introduction of me as a scholar who could add value to CTA in their current context was wholly accepted, since CTA usually took his recommendations seriously. I realized that in SS I would have a unique mirror and sounding board to obtain reflections on my intervention.

8.2 The CTA Institute for Corporate Excellence

Founded in 1995, CTA is a pan-India soft skills training institution, with presence in five locations distributed across the country. It also has an overseas footprint in the UK, Canada, Sri Lanka, China, Philippines, Vietnam, Malaysia, Singapore and

Thailand. Its reach spans 910+ clients, 7500+ programme deliveries, and 2,00,000 participants (accurate in March 2014).

I was initially introduced to CPN, the founder and managing Director of CTA, on 21 July 2014, by SS. I shared my background, and the nature of my research quest. CPN shared his own life story and the history of CTA's founding and journey. CPN was a commissioned officer and paratrooper in the Indian Army, who took early retirement to involve himself in the family business. There were differences with the family over the ethicality of certain aspects, and CPN parted ways. He tried his hand at several businesses and met many failures before succeeding with CTA. He talked also about his other successful current businesses: he runs a private security firm, and supports an alternate school as well as a Foundation that provides scholarships to children of poor or deceased soldiers.

CPN introduced me to VSN, who was in discussions with him. VSN is his chief personal mentor since two decades, and the Lead Mentor at CTA. The two of them were discussing the possibility of recasting VSN's role in line with a proposed strategic shift in CTA's positioning and an impending launch of new offerings. VSN is a very senior Organisation Development professional, and a key member of the ISABS. CPN also invited CKD to join us; he was responsible for the Knowledge Management, Research and Innovation functions in CTA. CKD was a former classmate and friend of CPN, an electronics engineer who had worked as a scientist at two very prestigious Indian institutions. He had joined CTA at CPN's behest to infuse a 'scientific' approach into their training design and delivery, and improve their scalability.

CPN was a fascinating, multi-faceted personality: energetic, open, embracing a disarming simplicity and frugality in lifestyle. He shot off many curious questions about my previous work with tribal communities, with craft artisans, and my deployment of theatre in behavioural training. He was currently engaging with an artist he had recently met, and experimenting with bringing the artist into the corporate training space (after bringing in the scientist CKD!). CPN supposes that there is ultimately an inexplicable, artistic side to training – the best trainers depend on their intuition to respond spontaneously to the situations, questions and discussions that arise in the training context, which frequently helps create magically transformative learning moments for the trainees. This phenomenon seems to drive the business at

CTA: many corporate clients trust and prefer a specific trainer to deliver their programmes. Now this is not for lack of corporate practices and processes at CTA – they have an explicit shared methodology, tools, and robust processes for sales, follow-up, scheduling and delivery. (I was to see these in operation shortly. I was also to see clearly that CPN’s military background laid a very systematic and disciplined basis for the organisation, and I discovered that CTA had a strong ethos of a well-bonded small family, and several other clearly practised values.)

CPN turned the discussion to one of his pet themes: is training an Art or a Science? CKD is vested with the role of making the technology of the training assessment and delivery explicit so that the process can be made transferable. He is focusing on many aspects of this – clear protocols for needs assessment; clear enunciation of training objectives in terms of outcomes that can be evaluated; and a delivery design that ensures that these planned outcomes can be ‘guaranteed’. I suggested that they look at it as a Craft – which, in essence, includes both the art and science components. I elaborated that there was theory to be mastered (science), and a skill component (art): although this is not necessarily teachable, it is learnable and can be mastered by practice and guidance, thus a craft. (A discussion about this follows in §8.7. My argument did not seem to impress CPN, although SS, VSN, and CKD showed interest).

Later, I sat with CKD in his office, and met the members of his team. CKD explained his approach to needs assessment, the formulation of objectives whose outcomes could be ‘guaranteed’, the need to move into formative assessments, and such other topics. He spoke further about his interests - reform of higher education in India, provision of training support to teachers, and the need for life skills teaching and career guidance for the youth – all topics on which he has applied himself and presented papers. He expressed a keen desire to be a part of my research since my experiences, approach and the topics I was studying were a fascinating new universe to him.

8.3 CTA’s activities and methods

Pegasus is headquartered at Bangalore, with four regional offices serving all of India. They own and operate fully-fledged training campuses in four locations, equipped with

special facilities, to offer Outward Bound Learning⁶. Clearly, in 1997, when CTA began to apply these methods to corporate training in India, they were pioneers.

CTA's approach to training is an adaptation of the methods used in the Army. In re-shaping these for corporate requirements, CPN and his colleagues have distilled a distinct pedagogy and grammar, incubated as a short, coherent mix of experiential and blended learning that can be delivered very efficiently. Owning and operating special campsites enables CTA to deploy appropriately designed infrastructure, backed by detailed systems and processes with sound administration. This approach shares some principles and diverges in other ways from the well-known Outward Bound International (Rajagopalan, 2015c).

8.4 My systemic learning at CTA

Subsequent to the meeting with CPN and VSN, a series of discussions were held (dates and persons, **Appendix A**) in which I shared a description of the broad contours of systems thinking and the Four Ways of Knowing Framework. In return, the people I spoke with provided me an understanding of the organisation, its evolution, ethos, current functioning and concerns. I met and discussed these ideas with CKD and SS several times. Both of them shared notes with me about CTA's history, current structure and methods. SS shared with me an account of the strategic changes that Vasu and he were introducing, while CKD shared details of his approach to Knowledge Management.

⁶ This term was used by CTA only in the early years. It was soon replaced with the terms 'Structured Experiential Learning' and the tag line 'Learning Unbound'. The term 'Outward Bound' refers to a movement started by Kurt Hahn, a celebrated German educator, following the realization that young men did not have the correct knowledge and skills to help them survive when in danger. This was discovered during WWII when young sailors were constantly dying at sea whilst older seamen could survive. Hahn set up this school as a way of teaching survival. It did not just create transferable skills to the sea, but to everyday life, and has developed to meet the needs of each generation since it was created. (source: www.outwardbound.net/about-us/history/outward-bounds-founders). Outward Bound International is a set of schools set up under this philosophy, beginning in 1941 in Wales, UK, and today has a presence in about 32 countries. Two schools licensed by this body commenced operations in India only in 2005 (the Himalaya school, www.outwardbound.net/schools/india-himalayan) and 2006 (the Bharat school at Nagpur www.outwardbound.net/schools/india-bharat).

Next, my exposure was sharpened through participating in and witnessing one complete cycle of activity from initial client contact to the training delivery. CKD walked me through an example of how the needs were assessed by him earlier in the week for a client GNVC; this needs assessment was to support the design of a programme that was to be delivered shortly by him with co-faculty from the company's Chennai office. I watched their faculty meetings and preparation of the programme design sheet (which elaborates activities, specific micro objectives and outcomes, 'stimuli' and 'focus areas'), and witnessed the entire programme delivery at their Bangalore camp on the 8th and 9th of September 2014, including their faculty cliniquing sessions (see Rajagopalan, 2015c, for a complete documentation). For my part, I shared notes and readings about systems thinking and the four ways of knowing framework.

CTA was keen on learning in some detail about both systems thinking and the four ways framework, from multiple standpoints. Some of them, like VSN and SS, were confident that these would add useful new lenses to push for strategic renewal within CTA. For CKD, the important thing was the possibility of using these lenses to improve on their pedagogic theory – their understanding of the teaching-learning process. For CPN (I suspect), and practically all of them in some measure, my intervention opened the possibility of adding another 'tool' to the training box for organisational diagnosis and consulting. In addition, another dimension that piqued their interest was that I was keen on using theatre activities as a means of communicating the four ways framework – this was something many of them were highly curious to learn. The faculty team had undergone a psychodrama workshop last year, which established its value to behavioural training in a most direct way, but the workshop had not provided an adequate basis for them to deploy the technology themselves. Corporate training in India is opening up to newer techniques, such as the use of drama and spiritual approaches, and the word is getting around; some of their long-time clients are now requesting such programmes.

At this stage, I assumed that, having talked to this cross section of the top management, there would be a decision on a date for the inception workshop to roll out my work. A copy of an email from CKD to the faculty members to this effect was in fact copied to me. As I awaited a date, I was busy trying to sort out the multiple objectives of my intervention at various levels, and sought to build a coherent

workshop design. Since I was unable to contact my doctoral supervisor who was on a busy tour overseas (the one single instance!), I allowed some time to flow by as I exchanged papers and articles with SS and VSN and we jointly built a coherent overarching frame for the workshop.

By October 10th, 2014, I had obtained approval from my supervisor for my detailed intervention design, developed in partnership with SS and CKD⁷, and I was restless to plunge ahead. I had also visited Pondicherry University, where my old collaborator on theatre-based work, Prof. RV, taught. We had corresponded about my requirements for the CTA workshop; he had assembled a dozen doctoral students to demonstrate/rehearse for us the theatre tools he felt might serve my purpose. Present on the day was Anand, a music scholar, who was to provide live music for the workshop. As it happened, Anand took ill and we substituted RN and added Ms. C, for the eventual workshop. In addition to my own past repertoire of theatre training tools and activities, RV exposed me to several new ones, and I was satisfied that we had enough tools to pick and improvise from based on the emergent needs at the workshop.

Time passed and I became anxious about the fact that CTA had not moved to set a date for the workshop. I sought meetings afresh. After renewed internal consultations, I was informed that we needed to bring some more people on board in order to begin the intervention. I was requested to make a series of presentations, which I did. I was also asked to specifically met Mr. YB, the CEO of CTA, one-on-one⁸. These presentations by me took place throughout November. As my consultations with SS and CKD progressed over these presentations, we narrowed the scope of the Systems Thinking exposure to a clear enunciation of two methodologies – SSM and VSM – that CTA could employ for a strategic assessment and renewed organisational design. In a final

⁷ The exchange of correspondence only marked significant agreements and points of convergence or action required. Much was transacted in a seamless and constant flow of telephone conversations, and in a few direct meetings with SS and CKD.

⁸ In fact, it was with some consternation that I received this news. All the top management I had met at CTA had appeared business-like, professional, action oriented, and supportive of my intervention. Over time, I realised that exactly at the time I was approaching them, some internal reconfigurations of power were playing out. One of these involved CPN easing out of a role in daily management and assuming a strategic role. There is a complex scenario at work in the culture at CTA, which has certain strengths that have also become its blind spots.

half-day presentation and discussion at their corporate office on 26th November 2014, attended by 15 persons, a clear preference was established for the VSM. By now, it was also my preference to stick to just one tool, as time and group composition realities became clearer to me⁹. YB was unable to attend and was briefed later by his colleagues. We met the next day over lunch. He needed only a short run through to decisively accept my intervention as a definite value-add to CTA, but the reality on the ground was that CTA was in its peak delivery period. Most of their clients sought to complete proposed annual training exercises during November and December, before staff took their winter breaks over Christmas, and returned for the final push in the last quarter of the business year¹⁰. However, we settled on December 2nd to 4th as the dates for the inception workshop.

The position at this stage can be summarized thus – CTA’s leadership clearly saw value in learning about the VSM and four ways framework, from two standpoints – a) a potential contribution to enriching their theoretical understanding of teaching-learning, their core business activity; and b) its immediate applicability to an intended imminent exercise in systemic renewal. The systemic renewal would also bed in their learning of the frameworks and possibly enable future application in their consulting assignments. Thus, we evolved a consensus about applying these two new lenses to trigger a systemic renewal process. The plan for intervention, which was collaboratively drawn up, involved two stages. The first would be the workshop on systemic renewal (see Rajagopalan, 2015c for detailed notes on the design as it evolved collaboratively and then finally emerged in delivery, plus a note on the use of theatre tools – my approach and method with sample descriptions of a few exercises can also be found in that document).

Following the workshop, it was planned that a small team of CTA faculty would be chosen from amongst volunteers who would attempt to deploy systems thinking and

⁹ It became clear that the group may effectively participate for two-and-a-half days rather than three; and there may be a mixed composition of senior and junior faculty, and those from military and non-military backgrounds. A healthy gender balance was becoming increasingly unlikely as CTA had only 3 women, and one was ill and another was the mother to a young girl of 5, so I added a lady member to my own team.

¹⁰ The financial year in India runs from April to March.

four ways framework in their work. I would closely follow and mentor this set of people. The application of the VSM to design an alternate organisational structure for CTA, and its implementation, would be coordinated by a separate small team to be decided at the end of the workshop; this team would also attempt a conscious deployment of four ways framework in the rollout process.

As it transpired, key CTA members – CPN, SS, CKD and VSN– all the four members who constituted my ‘coaches’ into that system, and with whom the entire intervention had been shaped, could not attend the workshop¹¹. I met CKD for a couple of hours at his residence on the 1st November before traveling to the campsite. CKD helpfully reviewed the developments leading up to this workshop and recounted his own trajectory at CTA. He alluded to certain collusive blind spots in CTA’s way of functioning, which had led to a state of attrition. He informed me that several experts in organisational development had led workshops at CTA each year over the past decade, but none of these translated into a breakthrough change in CTA’s approach or performance. He therefore emphasized that the only manner in which I could overcome this barrier would be through an element of surprise, not additional analytical frameworks. Both of us saw the theatre work as potentially being that surprise element. As the workshop unfolded, I employed SS and CKD for ‘remote cliniquing’, sharing my own feelings, reflections and insights with them at the end of each day.

Detailed records of the communications related to the broad workshop design and the actual activities in the workshop were maintained (a key select set is included in Rajagopalan, 2015c). A highlight of key dates and activities is at **Appendix A**.

¹¹ The communication regarding the scheduling of the workshop was not sent to VSN by oversight – as a senior advisor, he was not usually required to participate in routine faculty development activities but would have played a useful role here. CKD had a surgery scheduled, and SS had other business scheduled on those dates. However, pushed into a corner by the previous delays, I could not afford to wait any longer: my study visa required me to return shortly to the UK, and negotiating an extension to my fieldwork was not an option. CPN tactfully stayed away so that YB would have the space to lead the systemic renewal effort.

8.4.1 Aims of the systemic learning exercise

The inception workshop was seen by everyone, and captioned, as a systemic renewal exercise, and positioned in continuity with the several efforts and conversations within CTA that marked an ongoing engagement with learning and renewal. At the same time, there was a growing and explicit recognition that these several efforts were not leading to an effective transformation as sought. The workshop was addressed to this situation by positioning it within a framework of four levels of learning, with justification as to how its process design and contents would stimulate and engage the deeper levels of learning that went unattended in the previous renewal efforts. This positioning was based on the conversation with the CTA leadership. It was recognised that, as masters of the organisational development (OD) language game, the team members were inured to, and blinded to, their own inability to find traction for a renewal process within their own organisation: mastery of the game meant being able to talk their way out of owning personal responsibility for this collective purpose. I was told that a real element of surprise was needed to jolt them into this self-realisation; I ventured that the experiential component of theatre would address this gap. This is in accord with the burden of the argument of this thesis: briefly, that engaging and deepening systemic learning, renewal and maturation requires more than cognitive clarity and dialogical discourse (see Rajagopalan, 2015c), and this can often be facilitated by methods involving postconceptual ways of knowing. I was clear about two interlinked elements I was explicitly excluding from the remit of the exercise: one, I was not taking on responsibility for an organisational intervention primarily because of limited time availability (this had both positive and negative consequences for the outcomes: see Rajagopalan, 2015c for my reasons); and two, I was also not taking on responsibility to support personal growth and maturation processes for any participants. The workshop was intended to teach about four ways framework and systems thinking (specifically, VSM), and to provide an experiential encounter with the use of theatre. These conceptual frameworks were to be applied to evaluate CTA and locate aspects to spark off a renewal process (the VSM for an organisational diagnostic and the four ways of knowing framework and the theatre experience for a reflection on its pedagogy). This was the justification for calling it a systemic renewal exercise. Inasmuch as some self-reflexive work could not be avoided, the two elements

I had sought to exclude would also somewhat intrude; I was alive to finding the balance in this tension and open to reworking the workshop goals as it unfolded.

8.4.2 Design

My planned design for the three-day workshop involved an experimental and open design braiding three activities: the teaching of VSM through

i) a guided exercise on its application to CTA (not intended to be a complete exercise but to take up just one set of iterations and teaching the method and definitions so the exercise could be continued and completed later).

ii) the conceptual teaching of the four ways of knowing framework

iii) the use of theatre and art activity for exploration of the four ways of knowing framework. The idea was to use the experience from such activity to comprehend the experiential, presentational and practical modes of knowing. (Inevitably, such activity also invokes and lays open for exploration the inner personal and social spaces for the CTA team members present; however, as mentioned above, exploration of personal development or the organisational climate was explicitly not the focus of the workshop). Data that emerged would be considered to the extent that it helped the organisational analysis that VSM was being applied to; and the analysis of their pedagogy to which four ways of knowing was being applied.

8.4.3 Follow-through

After the workshop, I was immediately issued a request – to allow the team to attend to their routine tasks and to resume follow-ups after the winter break. It seemed a waste and shame that the learnings would not be taken directly into the action arena.

However, given that i) CTA had some organisational inflexibility; ii) programmes planned and signed-off previously needed to follow the detailed designs that were already drawn up; iii) CTA clearly displayed an institutional ambivalence about incorporating new learning, although individual members might have varied positions on this; and v) the real internal culture issues remained unsorted and ambivalent, requiring maintenance of known patterns of behaviour – I acquiesced.

To follow-up, I sent in my own reflections on the workshop and sought a similar sharing from all the participants. There were two sets of individuals (three in each, one

common to both groups) that had volunteered to work with the four ways framework and the VSM, and I sent detailed emails to commence this. However, although there were responses agreeing to do so, actual concrete steps were not taken in the following month. In the time that was available to me in India to follow-up with CTA, I arranged to accompany and witness one training delivery by one member, and take another through a four-hour refresher on the four ways of knowing.

8.4.4. Evaluation

Evaluation of the workshop consisted of using an adapted standard protocol (from Midgley et al, 2013) administered at the end of the workshop, and written feedback to a simple questionnaire a month later. Details of the responses to the protocol are in **Appendix B**.

Most of the respondents carried away a sense of some utility and gains from the workshop. The overall duration and nature of the intervention was far too insignificant to produce any transformation, nor were conditions favourable, and hence, it was not my aim to produce any such outcome; rather, the purpose was to seed some openness to new and fresh thinking on the subject of systemic transformation, which they felt they had already mastered. I think this was achieved in some measure (see Rajagopalan, 2015c for further details).

8.4.5 Outcomes

In terms of outcomes, two significant outcomes can be reported. One is that the power of theatre based activity to produce new awareness of deep patterns in the unconscious mind and thus trigger deep personal reflexivity, change and the latent self-healing potential of the DIF was personally experienced by most of the participants, and some deep shifts towards healing and maturation in two participants were both reported by them and acknowledged as clearly visible by the rest. This was only a secondary outcome expected from the workshop and not a primary goal. The second outcomes was that, although no clear pathway for the systemic renewal of CTA was formulated or travelled on, the cynicism and frustration about being unable to embark on a true renewal process was shaken, and the internal contradictions and issues touched in a way that the seed of realisation that this was within grasp was sown. This is always the

true starting point for such a renewal, and it shifts the system state from renewal being a latent but dormant potential to one that is in its consciousness.

What possibly might result from just this level of seeding is not within my capacity to guess at this point. For practical purposes, an external evaluator might correctly conclude, using a conventional analytical framework, that nothing substantial was achieved.

However, using a framework that values progress to maturation (seen in terms of increased discovery and acceptance of one's own shadows, leading to increased acceptance of one's 'other', and thereby an increased sense of unity with the entirety of the experience of life), even a miniscule perforation of the armoury of rationalistic and atomised existence is experienced as rewarding; the quest is to improve one's own capacity to own up to vulnerability and be in a position to continuously exhume one's own shadows and deepen the capacity to invoke trust and faith in this adventure of self-discovery in one's fellow travellers and co-seekers of the moment. My interventions for OD purposes invariably integrate this being dimension with the becoming dimension, and to my mind, effective and lasting outcomes in the latter domain come from progress in the former.

From the perspective of my intention to review the possibility of integrating four ways framework into systemic learning, I have realised that there is significant value in paying attention to, and reflecting on, the use of the various modalities in four ways framework – how they are deployed consciously, how additional useful data on group process dynamics becomes available in watching unplanned shifts in these modalities, and how blocked group processes can be relieved by impromptu shifts in modality. Such an attentiveness is always a part of the implicit skill set of any committed and consummate learner; the explicit use of the framework adds to the flexibility and capacity for strong second-order reflexivity. I suspect that this aided my insight into characterising the DIF as a key separate element to add to the four ways framework, explained in §8.6.5.1. I also realised a new flexibility in relation to deploying theatre for the experiential teaching of a specific framework such as four ways framework – clearly, the framework achieved much impact and acceptance because of the direct experiential connection; otherwise the CTA team felt that their own version of outward bound learning was pretty much the last word in effective pedagogy.

8.5 Reflections¹²

In the second-order science approach, radical perception and radical memory accompany radical practice (these terms are discussed later at §8.7). Reflection is not directed to the purpose of reporting in terms of a set language game; rather, it seeks to distil and share the insights that arise from such ‘living inquiry’, so the operation of re-entry (reflecting on the reflection) is important. In this section, I begin with some reflections that seek to articulate and consider things from my current memory and review some possible alternate scenarios. Reflective narratives are not entirely fiction, however; they must be treated as only partial accounts from specific and limited perspectives. In seeking to examine these perspectives, I believe that circumstances unfold as they do due to the nature of those circumstances. If we accept that personal dispositions and capacities are part of the circumstances, other decisions can only be taken in different circumstances. Therefore, ‘might have been’ reflections are futile. Reframing and considering them, however, as reflections on the possible effect of bringing in different dispositions, knowledge, capabilities, etc., is more valuable. This is what I am doing in the next few paragraphs, and this will lead on to deeper, more radical perceptions and questions. The very act of revisiting this documentation at several points of time subsequent to the event has been very illuminating. I had put down notes immediately after the event, developed and reflected on these in some detail after 3 months, and am now reviewing all of this material some 7 months later (I shall refer in the remainder of this Section to these moments in time as *notes*, *reflection*, *review*). As increased distance is obtained in chronological time, the refractive index changes, and more elements of the *aionios* and *hyparxis* (Hodgson, 2015) also offer themselves to thinking.

My initial reflections related to the possibilities that would have obtained had I been willing to treat this like one of my paid OD assignments – the standard organisation and leadership screening routine that I might have followed, the aspects I might have confronted or dealt with differently, such as making timely responses to signals and developments, insisting on completing the work with the VSM as a basis to reveal the

¹² This is a distilled summary and more details are included in Rajagopalan, 2015b.

contradictions within the organisational cybernetics (communicative structures and subsystem roles), and I would have handled several aspects of the workshop quite differently (Rajagopalan, 2015c). These details occurred to me in reflection, and I noted in myself in the process of that writing how strongly my consulting self kicked in, with a surge of authority and confidence. Examining the choice to keep that role in abeyance during my fieldwork led to deeper reflection, and this came through in the statements I wrote during review in the preceding section on outcomes. The next three following paragraphs are also from my reflection writings:

The workshop was experimental: I have not previously used theatre for exploring four ways of knowing; nor combined this with the VSM in the past. It helped that this was a research activity - I was not responsible for producing a specific positive outcome (in fact, I was quite ready to risk total failure).

During the workshop, there were moments of haziness, and mixed outcomes from various sessions. Yet I was able to flow with the emerging, unfolding process and constantly gave it all my energies. This ability to sail along without any reservation was in itself a new high for me, and left me very happy and tired at the end of it. It occurs to me that when you are part of a sincere collective quest and search for the truth (as in the here and now experience of your own aliveness and spontaneity), there is no need for any other external accomplishment – this experience is in itself sacred, ennobling and uplifting.

I experienced the entire group – every single person – as committed to a similar quest to find their own truth(s) through exploration – and as placing a high level of trust in the facilitating team. This made the three days akin to a depth immersion in the sacred pool of energy (breath, chi, praana, etc.) that enlivens all beings.

8.5.1 The Deep Intelligence Field: corroboration from direct experience

Let me now reproduce some paragraphs excerpted from a reflective communication I sent to the CTA team after the workshop. I said that (using the term ‘eco-spiritual perspective’, since it was familiar from conversations with some members of the team):

“At the heart of this argument is the issue of knowing – how we know and understand things and how that determines effectiveness. These varied frames

have a deep connecting thread: each helps in developing a clear eco-spiritual perspective on the nature of knowing, and the nature of social systems. Such a perspective then helps to develop an attitude of creative fecundity, and leads to natural flourishing.

We can briefly visit the eco-spiritual perspective that was just mentioned, and see how each of the frames supports its grasp and internalization. This perspective is ancient, and human civilization has often formulated and reflected it in great vividness and vibrancy. However, it has been entirely lost to modern man, with his excessive slant to rationality and scientism. Its resurrection is best found in works such as *Science and the Akashic Field* (Ervin Laszlo) and *The Spell of the Sensuous* (David Abram) – of course, there are easily a dozen more works that can be named.

This eco-spiritual perspective describes the world as consisting of things that are all interrelated, interlinked and interdependent. What affects any one bit affects the whole; each change in any part affects the whole. Since there is constant change and evolution, this is to be seen as co-dependent co-arising, rather than in terms of cause-and-effect chains. The nature of this interlinking is that each bit contains the information of the whole. Thus, knowledge or intelligence is not to be seen only as discrete packets of information that are contained and transmitted physically. They are woven into the very fabric of the structures (the complex structural coupling) across this entire web, in their dynamism of constant unfolding and evolving. The simplest metaphor for this is *Vasudaiva Kutumbakam* – that all of the earth is one family, or Gaia – that the entire slice of earth that contains life is but one single organism. However, even these metaphors are reductionist, since according to Hindu philosophy, all the cosmos is alive and interlinked in this fashion.

The most direct implication of this perspective is that we must care and tend for the entire web, and not operate from an exploitative, extractive frame. This kind of statement leads to much confusion – it sounds too utopian or idealistic to some; and it seems impossible to make choices and act when such universal compassion needs to be exercised. In fact, if the logic implicit in this ecological perspective is truly accepted, the real question is not “how can it be done?” but “how do we know which decision or action is least harmful to the larger web?”. Indians are aware of this question as the dharmic one. The

question overwhelms most of us because modernity and rational scientism lead to one significant overlooking. This is the fact that the eco-spiritual model of the world indicates that all the knowledge (of the whole and therefore of any parts relevant to us at any point) is always embedded in each bit. Connecting to this knowing requires a special approach – one that practically all human cultures and civilizations (with the exception of Western scientific rationality) have cultivated. We will come to that in a bit. Let me first explain how each of the four frameworks help prepare the soil for that seed of knowing.

Insight is given primacy, over both hindsight and foresight. Insightful knowing stretches beyond the compass of the Four Ways of Knowing framework to point to the knowing within our beings, the ('embodied cognition' to use a somewhat clumsy and inelegant phrase indicating the dim dawning recognition in the West of the fundamental phenomenon), or the knowing within the silences. The creative transcendence of seeming paradoxes, contradictions, dilemmas or standoffs ... all lie here. This knowing is accessed only when the purposive, egoistic, rational, scientific mind is utterly silenced. The methods to do so were discovered and practiced across human cultures and civilizations and numerous schools of practice (and some accompanying theory) are available. These in essence consist of a conscious and deliberate shift of awareness to a subtler wavelength – a refractory shift in the mental pattern to a situation of mindful alertness. In this, purposeful striving and everyday strife are banished; in that silent repose, a sharp in-turned awareness is combined with a generous openness to receiving the external world exactly as it is unfolding in current reality. This fifth domain of knowing can be termed as the Deep intelligence Field.

To summarise, when is an intervention systemic? My argument would be – systemic is meant not just to be understanding in systems thinking ways; but if it is meant to include the 'holistic' (addressing as much of the whole reality as possible). Towards this, we must first understand the ways of knowing – comprehending that the ground of our knowing lies in the Deep Intelligence Field. The four ways of knowing help to triangulate, integrate and to bring alive the 'full knowing in the present anticipatory moment'. This is quite different from the stuck-up knowing that comes from restricting our

active perceiving and cognising to correspond to selected propositional frames from the past that we are comfortable with”. (Rajagopalan, 2015b).

Of course, let me add that accessing the deep intelligence field might come up in all forms or ways of knowing – as body signals, metabolic shifts (as in the rate of breathing), emotions, images, sounds, words (a single flashing word or a torrent, as in a finished poem), even emerging later in dreams etc. Sometimes the way these insights connect to the directly felt experience in the moment may be clear, sometimes not. Often, such signals need to be dwelt or ruminated upon, or discussed, before they yield the knowing contained. Of course, in working with data accessed from the deep intelligence field it is possible that once again we run it through some filters of prejudice or cognitive limitations or templates, and thereby lose their value. Sometimes, they may seem to be fantastic (in the sense of ‘unbelievable’) and wholly unrelated to our conscious experience. Thus, while access to this dimension of the deep intelligence field is valuable, it is not to be treated as beyond questioning. *In the final analysis, it is the constant triangulation and re-evaluation of what we think we know across these domains of knowing, as well as in discourse and conversation with others, that we reach more a significant and complex understanding of value.*

Nevertheless, it is also important for me to mention here that all my experience over three decades points to a fundamental principle about accessing the deep intelligence field. This can be stated as: *practicing to cultivate an inner listening to, and access to the deep intelligence field effectively means engaging the basic teleonomic principle that directs us towards psychological integration, healing and dharmic action.*

Confirming this principle does not require deep spiritual or mystic experiences; it can be verified in more direct and mundane ways. For example, my regular meditation practice produces a simple, effective, immediate outcome every day. As I come out of my meditation, I keep a notepad next to me to jot down my thoughts. Sometimes, there are special insights. However, one dependable everyday outcome is this: I am able to produce an effectively prioritised list of all the actions and activities that carry over for me from the past. Regularly, things that have slipped below the radar, or been put aside for some period, automatically rise to conscious memory and get included at the right time and place. I have discussed at §7.2.4 how information that is not normally within the sphere of knowing is accessed, sometimes regularly, with certain practices. The

following paragraphs in this section are from jottings in my reflective journal, and reproduced here with little change.

Pondering over all of this leads to one arresting insight: what makes a programme such as a human process lab successful is not the design of the process or its modality (such as the use of theatre). *What makes the space yield is precisely a collective alignment to listening to the other beings in the space – other human beings or all the other voices from nature* (as David Abram would have it). Precisely as much as we practise this quietening and listening in to the voice of quantum intelligence in the DIF or Akashic Field, precisely so much of healing, recharging, renewing, enlivening do we experience. SS corroborates this: he compared us all [who have only learnt group process modality (ISISD or later)] to a city child who only knows to drink water from the tap; a tribal child knows to source water from a spring, stream or tuber. Tapping into the elixir is what counts.

I have been for a long while toying with the four ways framework; trying to understand if it does cover all. I now submit that it is incomplete. Let me struggle through putting this argument together. This is central to decoding what it is that makes Sumedhas's use of non-verbal modalities such as yoga, meditation and theatre decisively and profoundly rewarding in its human process labs.

The workshop for CTA was significantly insightful. Its purpose was never personal growth or exploration; rather, it was systemic renewal. The use of theatre was instrumental in design; entirely with the aim of connecting and experiencing the four ways of knowing; as well as the four stages in the epistemology of presentational knowing (see §8.2.6). Yet, the pull of the participants was to the discoveries in the zones or periods of silence and stillness, following intense theatre exercises such as bodywork. They did, in fact, seek more to experience the personal growth from intense theatre work; and I needed to explain (as mentioned just before), that I was not mandated nor keen on going there (much as that was a zone of familiarity and confidence for me; this application of theatre was novel!).

Here, I need to expand on the peculiar impasse in CTA's growth, that I can sketch in terms of the VSM quite clearly now. CTA is a rather flat organisation with strong binding, and low politicking, amongst its members. All these people are intellectually and emotionally labile, learning to keep up with new management fads and tricks, and

engaging with experience based training for all levels and purposes for corporate clients. In brief, it is a healthy set of people in a relatively healthy organisation. Many new ideas and products/services are being creatively innovated and tested too; yet, the critical mass for breaking through in growth and profitability seems to elude them by a scrape. Therefore, it is highly telling that the creative edge is insufficient among people who teach everyday about strategy, visioning, operations, teams, leadership and every other contribution that is needed to make a business organisation tick. I have a curious diagnosis about this pathology or blind spot amongst the CTA team, but more about that later. Just now, I want to explore what the workshop ended up providing, and why this was needed.

Since CTA is involved in experience-based training, they do seem to visit the four ways of knowing comprehensively. In fact, they actively refer to the Kolb's (2014) cycle; so I pointed out the difference between 'reflective observation' (this term was used by Kolb to distinguish a stage in experiential learning – in his model, the stages are experiencing, reflecting, thinking and acting; the reflecting stage is characterised in detail as reflective observation) and presentational knowing – these are the only two components that do not map on from one model to the other (all the other three have a reasonably good match). At first, the CTA team was highly disconcerted with a theatre activity that was not immediately decoded using some theory to ground the experience (all their experiential teaching sessions end with a concrete mapping onto behaviour theory – in the format, “so, from what we just experienced/saw, and learning and now applying this conceptual framewe can extrapolate the right behaviour for teamwork or leadership...”). I insisted on two things – one, that they needed to break from their 'fix to know' and sort everything rationally, so I was not sharing the theory; two, as they entered the experience, the theory of the four ways would be introduced to them at a particular stage; so all of their experiences with theatre would be decoded within the timespace of the workshop, only not immediately.

The bits stolen from the workshop (not intended in the original design), that have been carried away as the real value-add by the participants, were the experiences and the space generated for simply being. Experiencing “Simply Being” is possible only in the silences. In silencing the once grasping, analysing mind, and entering into silent communion with other persons or with nature, one experiences a felt attunement with the process of living in a different sort of way. This is the sacred experience, where the

flow of the life breath is experienced as interpenetrating all beings and objects; as unifying, as enlivening, healing, and revitalizing.

Simply shutting out our rational, ‘becoming’, grasping mind and attuning to the energy of other people, and nature, accomplishes this for us. *The group process design (and its fine-tuning) is simply an external instrumentality that ensures this basic quality is generated or maintained; we probably attach too much importance to such things.*

The ‘Experiential form of Knowing’ in the original four ways framework does not refer to this experience of Simply Being. Experience, as an act of conscious perception, is a deliberate act of reaching out and contacting some person, place, object, thing, etc. Simply Being is to feel an attunement without even exercising volition or desire to connect. I would therefore argue that the fundamental ground of our existence, of being, is a fifth modality, which I would term “Nescience or Simply Being”. There is enormous amount of literature on this modality, its aware practising, and its virtues. Some examples from the literature are Ervin Laszlo’s entire body of work but especially, *Science and the Akashic Field* (2007), and David Abram, *The Spell of the Sensuous* (1996); but also much Hindu and Buddhist literature, as well as material from other traditional cultures (for quotations and examples, see David Abram again). Again, books such as *Autobiography of a Yogi*, *Women who run with the Wolves*, *The Secret of the Talking Jaguar*, *Zen and the Art of Archery*, *Waking the Tiger*, *Ritual – Power, Healing and Community*, the entire Wasan Conversations series, etc.; thousands of alternate healing practices such as Pranic healing, Reiki, Vipassana; fundamental underpinnings of psychotherapy (Carl Rogers, Mark Epstein) or negotiation (Frederick Misino), and numerous other discoveries across human civilization can be shown to specifically point to the fact of this modality, as do cutting edge research in consciousness, near death experiences and other frontiers.

Without reflexivity to their state of being-abiding, and felt attunement with the larger Universe, Systemic Interventionists are bound to fail; they are bound to practise an inexact craft. The fifth postulated mode of being brings home this critical realization. The fount of creativity is accessed and tapped in this state.

Let me cap this with what, for me, was a significant insight from my immersion into this pool of open collective learning. There had been several previous exercises at CTA in order to identify the causes of its ‘sickness’. This term was being used

because, from a strict accounting point of view, CTA was not making as healthy profits as it should have been; it seemed to have hovered around a zero net profit line for a decade. One diagnostic that was being bandied about was the ‘founders trap’ syndrome. However, my own gut feeling was that all of this was misplaced in some way. I sensed a lot of vibrancy and openness in both the team and the founder. As I gained acquaintance with their ways, I learnt that CTA danced to a somewhat different tune: they had a high sense of social responsibility and ethical behaviour far, above the usual standards practiced in that industry. They would not permit their training events to degenerate into drunken partying or merrymaking – something many corporate training cohorts actually sought as a hidden goal of outsourced ‘training’. They would not compromise on their training quality, even if it meant that their pricing was considerably higher. Furthermore, CPN employed many veteran soldiers in their training campsites, who maintained an exacting high standard of support for the training. In strict corporate accounting terms, this was an expensive way to do things: sites and services could be outsourced; the camps themselves could be rented out to other users for their own activities to add income. Many more details can be added on this score, but I rest the argument. They were not in financial trouble, but were generating insignificant profit because they were insistent on doing things properly.

My insight is this. CTA is ‘sick’ only in terms of the *current* conventions of accounting and evaluating businesses; they are actually a *futuristic business*, doing what I believe will be necessary when our current excesses of consumption and exploitation have finally caught up with us. They possess a serious sense of ethics, social and ecological responsibility, and have a vibrant culture with a team of psychologically mature people. The very fact of this ‘ghost sickness’ accorded by conventional balance sheet practices is an anomalous puzzle that leads to unnecessary worrying and self-doubt. Of course, there are blind spots and areas for improvement, and I do hope they achieve greater vibrancy in days to come. I do not think this insight would have occurred to me if I had donned my OD hat; perhaps I would also have looked for a diagnostic to pin onto them, and extend my business with them!

8.5.2 The role of propositional knowing, cycling and collective learning

Participating in these learning activities at CTA, in a break from an otherwise surreal existence on a largely cerebral plane (my doctoral effort!), brought home to me the fact that this collective engagement and inquiry really reenergized and enlivened me. This

is a refrain about the group process reality well confirmed by the Sumedhas lab facilitation experiences for most of the faculty. There is a collective alignment about how deep the impact of the churning and renewal is. It is rarely the case that most of the group has covered significant ground and one or two individuals have not (although exceptions occur, which do have reasons). Usually, it is just that these particular individuals have not cognised the transformation or realised its scale of impact – this is usually rectified on some probing or else surfaces with time.

If this process reality has so much to do with the DIF, what is the role of propositional knowing in systemic learning? As mentioned in the last section, the experiences of access to the DIF nevertheless seeks articulation in one of the various ways of knowing: this is compulsive and inescapable to our modern way of living. Such articulation facilitates discourse between humans. The corroboration by others of our representations of our experience in various modes is the only basis to confirm that we live in a shared reality and build a shared sense or model of the world, while strengthening our relatedness inside communities (although relatedness can develop simply, grounded purely in shared experiences without any representation, sharing or discourse). The multiple articulations into presentational and propositional schemas has both positive and negative features: it facilitates quick identification with and confirmation of patterns previously encountered; in the process, it blinds us to the truly novel and new elements obtaining in the present moment. Both recognitions are equally important – of that part which matches past experience as well as of that part which obtains afresh. The cycling (or triangulation) amongst the knowing offered by various schematic representations in each of these modes, and the sharing and exchange within communities, is a way of celebrating the marvel and mystery unfolding in each moment and also of engaging more deeply in shaping that unfolding.

The ‘scientific approach’ does not alter this aspect of the phenomenon of perception and cognition. In this method, what constitutes objective, rational, propositional, logical knowing and thinking is reduced to a mathematics of perception, cognition and linguistics. I have defined X as my framing logic, with Y, Z and D as the operating principles, and have adopted methodology E to perform certain operations and record certain observations, which are reported and evaluated against these principles and frames to ascertain or nullify a certain construct of how things are or may be. If you can be clever with words, these can be skilfully constructed to sound highly consonant,

plausible and convincing (also, when? After the fact? What is ‘recorded’ ‘during’ and what is ‘reported’ ‘after’?). In addition, even if there has been no attempt to dress the reporting with skilled linguistics, do not our operations and communications strive innately to create that sense of an ordered, predictable, responsive and seamless reality? As long as we are purposively oriented to our environment, we cannot escape this distortive dimension (see §5.2.4 on the language paradox).

This is not to say that we must conduct ourselves without purpose. It was necessary for me to conduct this intervention, not because I wanted to cynically negate this very process of research, nor because I wish to acquire a PhD for selfish or cynical reasons alone, but because I believe that I am investigating something sacred, that I am pursuing a purpose that will ultimately yield meaning to me that will be a vindication, an acquittal, of my labours and my personal reason for being.

Yet, all purposes that we pursue, and attribute to our actions; all these actions and approaches are the very threads that both bind and blind. This is what Hindus call *maya* (literally, the root form ‘ma’ is to measure, and *maya* is the blindness arising from such thinking; Ananthanarayanan, 2012). What is to be done? Acquiring a vision beyond this blindness, a subtle and penetrating view of reality in each moment of unfolding, requires that we participate fully in each moment of enactive living. Ananthanarayanan (2012) refers to accepting the sensual and emotive imprints and evocations of each encounter: “digesting an experience, calming, and thus acquiring the minimal accumulation of residues” is the underlying teaching of the yoga sutras. Abiding and respecting the whole means not selecting and measuring, and thus rejecting another part that makes up the whole. The universe of learning is always available; so we do not have to grasp and cling; do not have to judge events as success or failure, happy or sad. Laszlo (2007) discusses this as ‘at-one-ment’. In today’s world, even if we do see the compelling logic of these subtle arguments, it seems impossible to return to such a way of living, turning back on materialism. What, then, is the way forward? One suggestion I have is that we must, at the very least, learn to celebrate the knowings in the margins, embrace the ‘other’, and in every act of seeing that rejects a thing or category of people as different and ugly, recognise the act of building a trap around our own selves.

8.6 Extended epistemology and knowing methods

Having acquainted ourselves briefly with the framework of the four ways of knowing, let us relate it to the processes involved in the four learning methods examined in Chapter 7. Since this extended epistemology has expressly been developed alongside and as part of Cooperative Inquiry, we do have interpretations from Heron and Reason about its role in that method. I shall now explore its ability to explain and fit in with the other three methods. In doing this, I will surface an aspect where I differ marginally from Heron and Reason: I prefer to be explicit about the role of one element that I, therefore, incorporate additionally into their model (to my mind, it is already included implicitly).

According to Heron, knowing begins as a tentative sensing, a trust in some plausible thing, for which they use the term belief – this encompasses elements of trust and the commitment of faith, as well as their different kinds of provisional and tentative, but not fully substantive, knowing. In their words:

“Before knowledge comes belief. A belief is beyond mere arbitrariness of mind. It has some sort of warrant that makes it plausible. The claim to know something has a stronger warrant which makes the claim not merely plausible but well-founded. Research cycling seeks to convert plausible belief into well-founded knowledge” (Heron, 1996, 52).

Propositional belief is belief that something is the case. Presentational belief is belief in one’s intuitive feel for a meaningful pattern. Practical belief is belief in one’s developing skill. Experiential belief is belief in one’s dawning sense of a presence. Therefore, according to them, cognition proceeds from these beginnings and, through proper cycles of learning, is affirmed as well-founded knowledge.

Going further, Heron (1996) dwells extensively on the role of *radical perception* – consisting of being present with full empathy to the other, imaginal openness and deep receptivity to the appearance and intuition of pattern meaning, ‘bracketing’ out any classifications and constructs our mind is likely to impose, and being able to reframe our assumptions of any conceptual context or perspective with alternative ones for their creative capacity to articulate an account of people and a world. Similarly, he posits an approach of *radical practice* too, consisting of elements such as dynamic congruence (being dynamically aware and able to attune or reframe, while acting, of

the bodily form of the behaviour in all respects), emotional competence (ditto for emotions), non-attachment and self-transcending intentionality (the ability to wear lightly, and without fixation, the purpose, strategy, form of behaviour and motive chosen as the form of the action; not investing one's identity and emotional security in the action, while remaining fully intentional about it and committed in a dynamic way – open to revising and replacing it with another). At other places, he also describes radical memory (in contrast to observation and recording) and experiential immersion.

The reason he talks about these radical cognitive modes is because he clearly realizes that people might seek to pay deep attention to some learning task, but are often unable to lay down their standard issue cognitive weaponry that comes with the gaze of modernity – so strongly is it embedded. At other places, he refers to years of inculcating practices to train the mind in alternate forms of consciousness, ranging from Buddhist meditation practices to clown theatre. Such diverse exposure and efforts is also true of Torbert's team that explored Action Inquiry, as it is indeed in my personal experience for any serious systemic practitioner.

As an example, Reason (1988b) gives an interesting account of the ways he, his colleagues, and their postgraduate research group at the University of Bath were

“...developing high-quality awareness as a preparation for various kinds of participative research:

- They meet as a circle for silent attunement and mutual resonance; and sometimes for circle dancing, intentionally to ‘evoke the archetype of the circle, of human equality and presence’.
- They meet as a support group and an encounter group, to attend to their interpersonal relationships.
- They confront their distress, using a variety of experiential psychotherapies to deal with the defensiveness and old hurts that the business of inquiry stirs up.
- They develop mindfulness through disciplines such as T'ai Chi and Buddhist meditation.
- They explore participative knowing by using psychodrama to recreate aspects of the research situation.

- They explore participative knowing using Skolimowski's yoga of participation (Skolimowski, 1994). This involves approaching with reverence some natural phenomenon, such as a tree, rock, water; communing with it in silence; and identifying with its form of consciousness and way of experiencing its world" (Reason, 1988b).

There is much literature these days about how the cognitive retraining from art, theatre music, meditation or adventure can help in effectiveness in other domains of life (such as in corporate management/leadership or in therapy for variously challenged persons). My interest here is in exploring the 'how does all this work' rather than 'how to use' these techniques. Hence, the inclusion of learning theatre and holotropic breathwork has been to show the connections and the dynamics within the apparatus, processes or phenomena of consciousness. As described in §§ 6.2.3 and 7.5.1, it is the surprise factor of rapidly emergent situations where all the previous schema of our conscious mind are of no avail in contexts such as the learning theatre, or the challenges imposed on learning from real external and internal constraints in practices such as sculpture, that the openings to take up the difficult task of engaging with other forms of consciousness obtain.

Most importantly, none of these practices or methods are bracketed off from the rest of the human experience. This is specifically true for each of the four practices covered in this chapter, as well as the larger range of methods they represent. Heron says about cooperative inquiry that it:

“...cannot subsist on its own. It partakes of an embrace with other central features of human experience. It is fed and sustained in its engagement with its world by being part of a wider whole.

For any expressive person, this whole consists, perhaps, of three things. First, there is the inquiry itself; second, a celebration of lived experience; and third, creativity in refashioning our world. The inquiry is interdependent with the celebration and the creativity: it can reflect something of these two, but cannot entirely encompass or contain them. For inquiry to be living inquiry, it needs to be vitalized by the celebration and the creativity which flow into it from beyond it” (1996, 85).

Heron distinguishes two aspects of lived experience: there is “participation in its modes of appearing, in its perceived patterns of form and process. And there is participation in its inner life, in its experience of its world, its way of regarding and being affected by what is going on in its environment” (ibid. 91). This leads him to posit the idea of primary meaning and secondary meaning:

“The first of these aspects requires something like Goethean science. In his scientific work on plants and animals, Goethe practiced what he called concrete vision and exact sensorial imagination. This simply meant a deep, intuitive and intensive participation in the imaginal form and development of what he was perceiving. It was an imaginative reconstruction of, say, a plant’s whole way of coming into being, and of the archetypal principles informing it, as these are known in and through consciously deepening and extending the transactional process of perceiving it (Bortoft, 1986).

The second of these aspects, participation in the inner experience of an entity, calls for empathic resonance, intuitively feeling into the mode of apprehension or awareness of the other, whether atom, rock, microbe, fish or bird. It involves interior harmonic attunement, a felt inner sense of what the other is undergoing.

These complementary kinds of participative knowing engage us with the primary meaning of lived experience. Such primary meaning is the meaning the world has as constituted by our co-creation of it, our transactional generation of it. It is the meaning inherent in the process of perceiving and feeling the presences in our world. It is nonlinguistic and is grasped by actively, alertly and awarably deepening our intuitive-imaginal, and empathic-resonant, participation in our world.

Secondary meaning is linguistic and conceptual, arising from the ascription of class-names and general terms to the content of our lived experience. It is grounded on primary meaning. The use of language presupposes an agreement about how to use it; and this agreement rests on a shared tacit grasp of primary meaning. Secondary, linguistic meaning is a partial and incomplete transformation into conceptual terms of the primary meaning inherent in our imaginal and empathic participation in our world. So propositional outcomes of an inquiry are to do with revising our conceptual

transformation of our lived experience of the natural world, and with elaborating explanatory theory on the basis of this revision.

Such outcomes articulate what ...I call the postconceptual world. This a world in which linguistically charged thought withdraws to allow the transparent body-mind, with its full range of sensibilities, to open to its radical transaction with the given cosmos, and then returns to clothe the intuitions of this openness with revisionary language. Less rhetorically, it is a world we describe by words that transform into concepts our nonlinguistic experience of primary meaning. At the same time, we remain very open to that experience, and thus open to reframe our conceptual account.

Conceptual systems obscure the world of primary meaning when they build elaborate superstructures of 'knowledge' on the linguistic transformation, the categorization, of a limited set of primary meanings; and when they get preoccupied with refining the superstructure while forgetting, and failing to extend, its imaginal and empathic foundations" (Heron, 1996, 91).

Similarly, he distinguishes between the knowing about practice in propositional terms and actual practical knowing:

"Propositions *about* practice are therefore secondary to demonstrations *of* practice. ...The knack of a skill is its internal practical meaning. We grasp the meaning of the knack only in and through the mastery of it. But we can get a feel for this internal meaning-of-doing by seeing someone display or picture their mastery of it. Hence the importance of demonstrations and portrayals and the imaginative reconstruction of story-telling.

Practice also has external meaning for those who perceive it, and this at two levels, the imaginal and the cultural. Human behaviour has a patterning of sounds, postures, spatial relationships, and relative movements. Which has a primary, imaginal meaning about how people are being in their world, which is wider and deeper than the local cultural meaning of what they are about. And when it comes to understanding that cultural meaning, this is intimately bound up in special ways with these wider imaginal features of behaviour. So whether we look at practice as pure morphology, or as social purpose, its external

imaginal meaning is relevant and can, like its internal meaning, only be conveyed by demonstrations, portrayals and stories.

Analytic propositional accounts provide the back-up, the programme notes, for practical portrayals or story-telling evocations. As such they can:

- Describe the practice in terms of its several components, and how it evolved and changed.
- Describe the effects of the practice on the situation in which it occurs.
- Evaluate the practice and its effects in terms of relevant criteria.
- Report informative redefinitions of its domain that the practice has engendered.

(ibid. 92-93)

Most critically, Heron locates the energy source that keeps co-operative inquiries moving primarily in the

“...interaction between emotional arousal and creative imagination that keeps co-operative inquiries alive and afloat.. The logic of method, with its six bipolar dimensions, comes in only as a secondary technology to provide both effective power-steering for motivation and imagination, and, at times, a corrective discipline to their occasional excesses” (Heron, 1996, 94-95).

I had a deep realization that this is true of all human efforts during my fieldwork (see §8.4). Such a realization has often been expressed by the creative artistes of the highest order – for example, Bateson says:

“It is told of Johann Sebastian Bach that when somebody asked him how he played so divinely, he answered, ‘I play the notes, in order, as they are written. It is God who makes the music’. But not many of us can claim Bach’s correctness of epistemology—or that of William Blake, who knew that the Poetic Imagination was the only reality. The poets have known these things all through the ages, but the rest of us have gone astray into all sorts of reifications of the ‘self’ and separations between the ‘self’ and ‘experience’ (Bateson, 1972, 463).

The Indian *shehnai* player Bismillah Khan has repeatedly stated his account of the source of his inspired music in similar words, and the poetry and art of the Nobel laureate Tagore is suffused with this spirit.

All of this gives me reason to believe that it is important to locate the real source of energy and knowing in the DIF. Indeed, a careful reading of all the separate and joint works of Heron and Reason confirms that they have noticed this phenomenon but not necessarily highlighted it.

The reason I wish to do so myself is because it is possible to treat the Four Ways of Knowing framework as simply an extended way of locating agency completely in a restricted model or notion of the human mind (albeit meta-rational), whereas *I would like to emphasize that there is no separate isolated individual human mind as a totally independent agent who can comprehend the whole and act on it from outside*. Despite my own emphasis on the three systemic ontological propositions as well as much experience in working with modalities that attempt to dilute the erroneous epistemologies of rational thinking, I personally find that it is very difficult to escape the iron grip of their deep-seated habitual penetration of our everyday thinking and action.

Let me show how Heron has anticipated the deepest source of knowing in the deep intelligence field, in his own language, through a few examples:

“The spatial form of our own mind-energy is thus a finite locus within a vast multi-dimensional field of mind-energy. There is one experiential multispace with you and I as distinct loci within it. Each of us is not a limited nonspatial centre of conscious experience in a nonmental universal space as in the Cartesian universe, but a self-limiting mental space within a universal spatial experience. There are no longer many different nonspatial consciousnesses in one universal nonmental space, rather many mental spaces within one universal spatial mind. The Cartesian duality between space and mind is overcome: the individual mind is a local set within cosmic mind-energy-space. We are no longer beings mysteriously-in-here who are conscious of space-out-there, but experiential subjective-objective spaces within one trans-empirical consciousness.

Another way of saying all this is that if imaginal mind is inherently spatial, and there is intersubjective and inter-objective congruence among our manifold of imaginal realities, then the spatiality of our minds together constitute one great multi-dimensional interconnected web disappearing into limitless horizons without all of us and the infinitude of a generative source within each of us”. (Heron, 1996, 196)

At another place,

“...Meta-space consists of at least five interpenetrating imaginal worlds: the worlds of perceiving, dreaming, remembering, imagining, extrasensory perceiving. By extrasensory perceiving I mean not only ESP in the wider sense of perceptions of other realities, but also those forms of subtle, extrasensory perceiving that are interwoven with sensory perceiving, such as perceiving the gaze of another person. The gaze is not the same as the eyes, nor is it projected onto the eyes: it is a phenomenal category *sui generis* (Heron, 1970).

Perceiving it is a form of extrasensory perception.

... In mutual gazing, in other forms of interpersonal perception, and in other ways – to all of which the culture of the day tends to turn a blind conceptual eye. And again the extrasensory worlds have a vast reach independent of the sensory.

One point that emerges from all this is that what constitutes the sensory world is both ambiguous and variable. It is ambiguous because there is so much memory, imagination and extrasensory perceiving interwoven with it; and it is variable because the kind and degree of this interweaving is alterable by creative human intention.

For imaginal meaning, all infinities are grounded in a shared infinity. The limitless horizons of the worlds of imagination, of dreaming, of memory, of sensory and extrasensory perceiving, are grounded in the limitlessness of meta-reality, of the meta-space of the five interwoven worlds. This is not the limitlessness of horizons as in the component worlds. It is the limitlessness of kinds and degrees of interpenetration, of constitutive interweaving and relative independence. It is a limitlessness of creativity, a potential infinity; whereas the limitlessness of horizons is an actual infinity. But the potential infinity within and the actual infinities without, point to their ground in an all-inclusive reality:

the world-generative power within our own world-generative power, plus the infinite reach and givenness of each and every world we are involved in generating” (ibid. 194-5)

I have repeatedly in this thesis drawn attention to multiple sources that describe the experience of alternate ways of knowing in detail. I have also taken pains to show that these methods prove that such knowings are not limited to mystical experiences of pre-conceptual minds; rather, it is possible for the conceptual mind to learn to transcend its limitations, and achieve a postconceptual synthesis of these multiple ways of knowings. *I must now reiterate, however, that the modern mind is loath to make this shift, and it is usually impossible to achieve it without the interpolation of an extreme situation, one where the normal modes of reasoning fail us.* Reason (2015) makes the same point as he writes about the disorientation produced by long solo sailing voyages:

“At such moments it is as if a crack in the cosmic egg opens and for a tiny moment I experience a different world that is nevertheless the same world. It is a world that is not fixed in form, but forever changing: no longer divided into separate things, but one dancing whole. These tiny moments are so easy to overlook, to see as insignificant. They are not overwhelming transformations of consciousness. But they are profoundly important in calling forth a different conversation with the world.”

This is why pilgrimages into the wild world are one response to the ecological crisis of our times. They are not, of course, a sufficient response, for we also urgently need a whole range of political, financial, technological and cultural initiatives that would change society as we know it. I think they are nevertheless a necessary response. Opening oneself to the wild world and describing what one finds with love and passion is, in this view, a political and spiritual act (Reason, P., 2015).

Since neither systems thinking in the post-general system theory era, nor my own approach, are looking for absolute foundations (Flood, 1990), the idea of the deep intelligence field needs to be acknowledged as a construct, a possible model, a useful way of conceiving something. Why do I insist, however, on this idea? Not only is it a counterfoil to, and expansion from, limitations of rationality; but it is also a counterfoil

to the hubris associated with that, frequently interpenetrated with unconsciously racist and parochial mind sets – looking down on traditional and indigenous cultures as ‘primitive’ (Smith, 1999). Therefore, the acceptance of wisdom that we can draw from other cultures and marginalized perspectives will only occur if we can clearly establish that there is something in them of high value that is totally absent in the mainstream Western way of thinking, which I have sought to do. The idea is not to create a reverse oppression – and this I need to state explicitly since the occidental mind tends to flip from one pole to another (Fay, 1987) – but to show how each way of experiencing fulfils a gap in the other, and thus I argue for a mutual valuing and acceptance. This links back clearly to Friere’s (1972) observation that only those who arise from the ranks of (or who can truly empathise with) the oppressed, are capable of conceiving of a reality without oppression as the distinctive operating framework: the dominant culture cannot conceive of a state of true emancipation, so blind are they to their own limitations, so immersed in a hubris they are either unaware of, or positively value.

What will it take the modern mind to accomplish this radical cognitive shift and access the DIF? I believe that there are three interlinked shifts to be made. The first is an embrace of Nescience – *the principle that, not only do we not know certain things right now, but also it is in principle impossible to know everything*. Interestingly, this principle is already well accepted in critical systems thinking (e.g., Ulrich, 1983; Midgley, 2000) and complexity theory (e.g., Cilliers, 1998). The second is No Striving: a willingness to accept and embrace the spirit of abiding – *abandoning will of any sort*. The abandonment is not total; abiding is complementary to striving, so we will still strive, but there needs to be a much better balance between the two. Also, given that the dominant Western mind-set has almost completely marginalized abiding, the first step has to be the conscious suspension of striving, just so the realisation that there is an alternative can properly dawn. The third shift we need is No Guile –giving up the disingenuous idea that everything can be controlled and predicted. Instead, we need to *accept the way things unfold with awareness and lively engagement in the moment*. Only after we are practiced in this will we realise that methods for prediction and control have their place, but for limited purposes. Again, critiquing the ideology of the science of prediction and control is a feature of complexity theory (Cilliers, 1998). I call these three principles (Nescience, no striving and no guile) the ‘N3 way’, and I see this as a prerequisite for accessing the deep intelligence field.

Next, I will show how the four modalities of knowing can be put into practice in learning about learning. First, I will consolidate the ontoepistemological explorations made so far. Then I will introduce one further epistemological framework, called the Praxis Learning Cycle, to conclude this chapter.

8.7 The Knowing Universe of the Present Moment

The Anticipatory Present Moment (Hodgson, 2015), I have argued (§5.2.6), is a plausible *ontological* model of the elements of perception in the present moment. The Four Ways of Knowing is a useful *epistemological* model. However, along with this, we need to recognize the Deep Intelligence Field as a separate source of knowing. It is not simply a fifth way, but rather the origin and energy source of primary knowing – the knowing corresponding to the Universe of Being-Abiding: the only modality from which fragmented knowing and primary dualities can ultimately be overcome. With these two plausible models of the process of cognition in mind, let us investigate what happens when we put them together.

I have produced a synthesis of these two models in Figure 8.2 below.

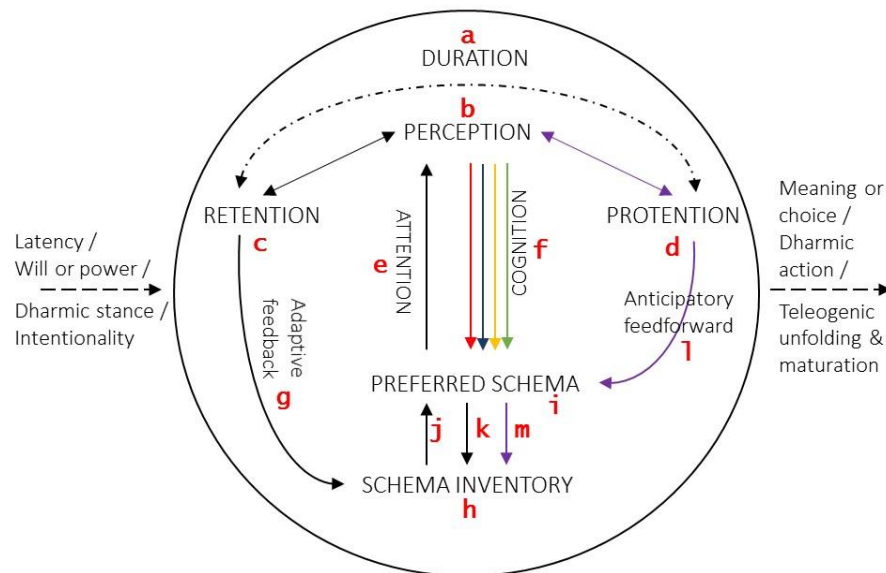


Figure 8.2 The Knowing Universe of the Present Moment (adapted and expanded from the anticipatory present moment, Hodgson, 2015)

In the first place, I have replaced the idea of the present moment being triggered by a stimulus and resulting in a response: this depiction represents an inappropriate

carryover from the idea that the organism is separate from, and acts on, the environment. Instead, useful models to consider are that the trigger may reside in either the latency or the will obtaining around the present moment. Other alternate candidates for the entry into this process would be intentionality, or the dharmic stance adopted. According to our preference, then, the outcome of this freeze frame of the process would be a movement with a potential for teleogenic unfolding or maturation (which potential may be realised or set back – we may accordingly say of the movement that obtains whether there is a shift forward, backward or a maintenance of the status quo), an act of meaning and/or choice making, and a *dharmic/not-so-dharmic* action.

Now, look at the loop e-b-c-g-j that corresponds most with the normal everyday process of modern rational thinking. When this is privileged within a mythical ideology of modernity or a theology of Science or Rationalism, then effectively the contributions of the other ways of knowing, and the ability of the DIF and the teleonomic principle to select and automatically present the relevant schema, are suppressed. The possible activation of the anticipatory feedforward loop b-d-l-i-m-h is therefore blocked out. This becomes a self-serving loop, and, as a rivulet or channel deepened over time, this habituation to use the rational circuit strengthens its dominance over other latent possibilities. The world is then constructed and described in elaborate models of rational thinking, which are certainly complicated, even complex, but not necessarily illuminative of how to live without cutting off the branch on which I sit: I become swift and savage at decimating the whole planet with my logging, mining, enslaving, consumptive, warmongering depredations.

As against this, cultivating mindful awareness practices, pursuing arts, crafts and bodywork, and other means of engaging the other aspects of the entire universe of knowing reduce the grip of the schema inventory and provide a plasticity to allow its expansion and reshaping by new experience. It is only when there is a sustained sense of trusting the entirety of the world that we meet, and all the possibilities latent in it which might unfold in the anticipated meeting, will the grip of the schema inventory and the privileging of specific schema loosen enough to permit the DIF to select the configurations relevant to meeting the current moment. This trusting and letting go into the unknown is at the root of all creative endeavour: it is an ability to believe in the possibility that I can enter the unknown in the faith that the necessary insights and actions will become available to me to meet and shape the future, imbuing it with new

possibilities. How does this come about? What might be involved in a process that can aid the expansion of plasticity and seed this kind of belief, trust, faith? I have described my own slow conversion: from being an advocate of mainstream science, highly sceptical about such phenomena; through experiencing repeated encounters with improbable coincidences or synchronicities and extraordinary access to information, in a variety of situations; to accepting the smallness of my rational thinking mind in the scheme of things. I have also referred to certain innovative learning methods examined in Chapter 7, pointing in these directions.

Thus, the expanded ways of knowing – the four ways *plus* the deep information field, will be operational at the levels of the schema inventory (h), the privileged schema (i), and the cognition process (f) and the pathways (f) → (k) and (l) → (m). In particular, the pathway b – f – k – h will be informed by the four ways of knowing and the pathway b – d – l – i – m would depend on the deployment of N3 and access to the DIF. The schema inventory and the preferred schema would always be illuminated by the triangulation of the knowings accessed through these multiple modes.

Having thus established that a specific orientation to encountering experience in the present moment is skilfully developed through the long-term practice of certain methods, let us re-examine what is contained in such specific and elaborate practices, that leads to developing a particular knack for anticipating, accepting and discovering the new in the moment of experience. This process is examined in the next section in terms of Hodgson’s model called the praxis learning cycle, and it is this kind of long-term practice that establishes the capacity for the anticipatory present moment to access and activate the additional capabilities (represented in the knowing universe of the present moment in Figure 8.1) as discussed in the preceding paragraph.

8.8 Hodgson’s Praxis Learning Cycle

A common thread in all the methods considered in Chapter 6 is the fact that they require temporary suspension of the rational approach, for the other ways of knowing to make their presence felt. In the Learning Theatre approach, and in holotropic breathwork, the specific pathways and techniques to accomplish these have been developed in detail and we have visited a brief picture of how that is done. In the case of cooperative inquiry and action inquiry, there is an explicit indication that such an accession of the other ways of knowing is absolutely necessary and critical to the

creative possibilities designed into these approaches. However, it is assumed that a commitment to these approaches will automatically lead to personal inquiry and development on such fronts (since various methods to accomplish this already exist), and hence, no one specific approach or technique has been embedded within the fold of cooperative inquiry and action inquiry. Nevertheless, sufficient testimony as to which approaches have been experimented with and found useful by the founders and some of the practitioners of these methods can be found scattered through the literature (example, Torbert, 1987, 1991; Heron, 1996).

Suspecting there may be something to discover about how these knowings work in a context that is not entirely rational and modern in its outlook led me to learning traditional Indian sculpture (chapter 7). When I shared the stages of learning and their links with the four ways of knowing framework of Heron & Reason (1997) with my colleague, Anthony Hodgson¹³, he remarked that my description corresponded greatly with a piece he had written in 2013, called the Praxis Learning Cycle (PLC). This is indeed true: the PLC is a methodical conceptual elaboration of the dimensions of learning a complex practical skill.

Without referring to the Ways of Knowing framework, the theory of the PLC speaks about a series of alternating modalities of learning, linked through complex patterns of gateways to challenging, reformatting and deepening of what we have referred to as the schemas in the knowing universe of the present moment (the PLC does not use the term schemas; instead, it refers to assimilating, applying and relearning in repeated cycles). The term gateways is used to indicate that the progress through the PLC is not sequential or automatic, there are crucial gateways or ‘transition hazards’ to be negotiated, which depend not only on internal evocations but also the availability of suitable external provocations and supports to the process. Interestingly, the way the PLC is conceptualised, these barriers are also sometimes mutually entangled, in that progress along one dimension of learning may depend on stage of progress in another. I remarked on this in relation to my own learning in my sculpture training at §7.5.2,

¹³ (the additional characterisation of the deep intelligence field occurred in my later project work with CTA),

showing an artful invoking of the four ways of knowing in an orchestrated and deliberately constructed learning path.

It is not possible to repeat here the detailed and nuanced study of the steps and processes in the PLC (Hodgson, 2013a), but I will attempt to provide a brief overview. The PLC is composed of three interacting processes. Each of these three processes consist of multiple stages, which, in one sense, unfold over linear time (*chronos*, or chronological time, see §5.2.6), and are, broadly speaking, navigated sequentially. From another perspective, however, each stage is also connected in different ways to other stages in a way as to unfold a complex whole understanding; this is not connected in linear time, but is represented out of time (hence the reference to complex patterns of mutual entanglement in the last paragraph). This is *aionios* (the timeless, essential pattern of things) while the will and intelligence of the learner (*hyparxis*, the timely) determines a progressive sequence across the processes.

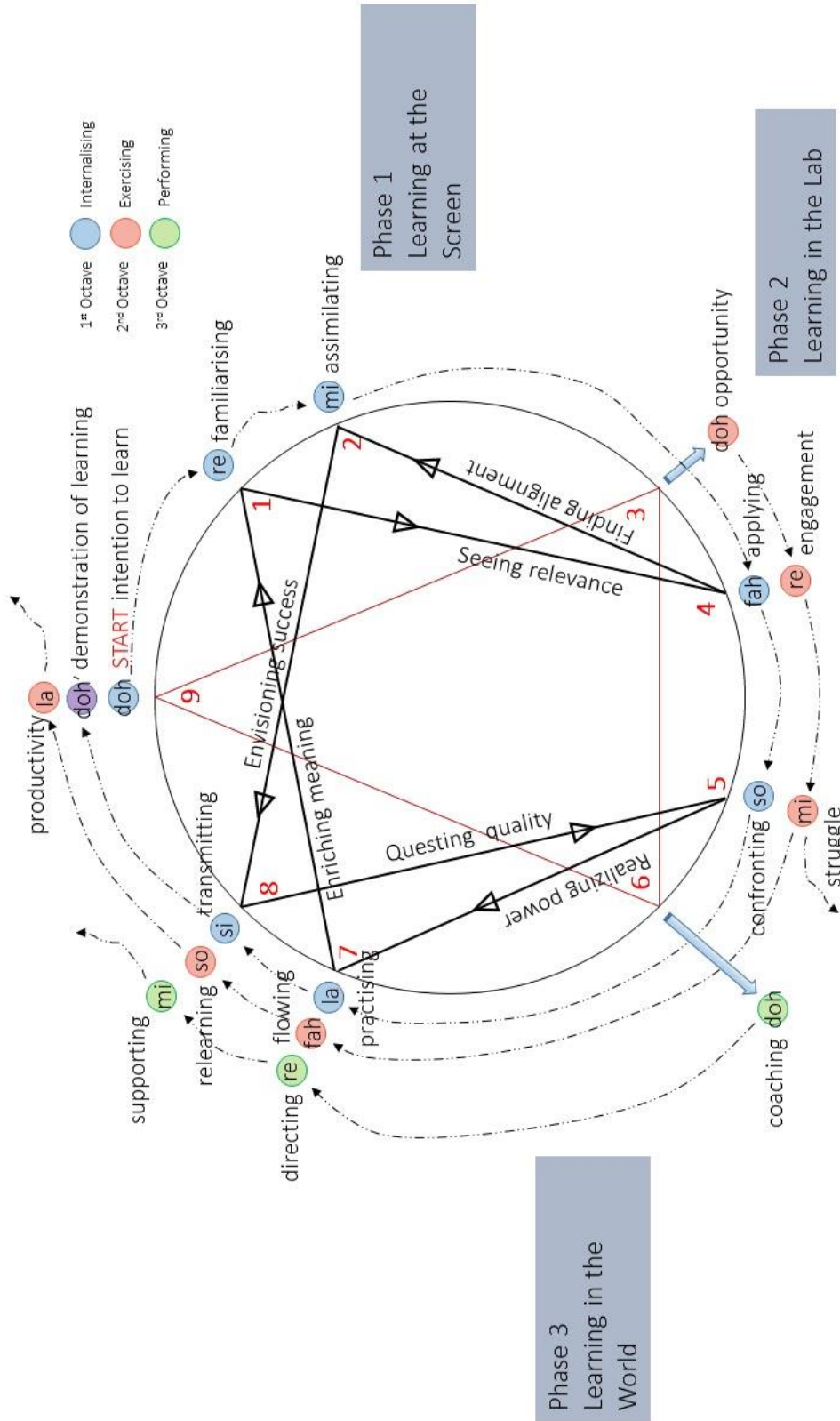
The first process is referred to as Internalising, and largely represents learning ‘on the screen’: theoretical familiarisation (the term screen being reminiscent of its typical involvement of a blackboard or monitor). This is composed of the stages of acknowledging/developing the intention to learn, familiarising with the field, assimilating key material and having some initial engagement with basic and key experiences.

At this stage, there is a challenge to shift from a passive general interest into an active engagement with some serious application or project. Otherwise, there is a chance that the learner fails to be engaged in going deeper into the field, and the attempt to learn may falter or be abandoned. If there is a desire to engage, this is a recognition of the challenge that there is much more than the tip of the iceberg that the early exploration has allowed the person to become familiarised with. The next three stage then, are: confronting difficulties, practising repeatedly (the famous ten thousand hours dictum would apply!), and transmitting the learning (to go beyond a certain point in learning, this becomes critical).

Now, the second process can kick in, running parallel to the first. This is called Exercising. It helps the learner turn the learnt knowledge into effective practical understanding and actual capacity to perform effectively in the chosen field. Therefore, this requires an opportunity to test the learning; often, a mock or practice situation

suffices for this ‘learning in the lab’ process. This movement into the second process involves a transition hazard: it is not automatic, nor is it necessary that every learner should cross this threshold. Both the internal evocation and the external finding of opportunity are needed to hurdle this. Its stages include in rough sequence: finding opportunity, engaging opportunity, and then struggling in the opportunity to cover the gap between the ‘learning on the screen’ and the contextual challenges of practical execution. This struggle may continue for some time, and the first two processes may see a repetitive cycling as additional and more complex components of learning are engaged in stages. However, another transition hazard now obtains. This is the ability to move from staccato practice and overcoming of discrete challenges to a smooth ability to flow in the execution (‘learning in the world’). This third process is often greatly helped by living interaction with an accomplished performer who is able to point to the positive and negative features in the learner’s practice. This role of a coach is explicitly recognised in some fields like sports, arts and crafts, but it applies equally in all others. Its stages include a coaching intervention, directed critical practice and some support infrastructure such as a community of practice (at which stage direct coaching may no longer be required, but a coach’s presence as a benefactor may be useful to the continued development and maturation). There is the final transition hazard when the unavailability or withdrawal of coaching or support infrastructure, or any other factor, may abort the continued progression to deeper maturation and the stable productive engagement in the field.

Figure 8.3 The Praxis Learning Cycle: PLC (reproduced from Hodgson, 2013)



Hodgson has effectively represented the whole PLC in a diagram, which is reproduced in figure 8.3. The circle represents the entire process cycle and is an abstraction for a spiral since each completion advances the learning maturation and deployment. The triangle represents the three key inputs required to navigate the whole PLC. The internal connecting lines follow a recurrent looped sequence 1-4-2-8-5-7-1, and these offer an extra degree of freedom for the process to achieve integrity over time, harnessing the *aionios* and leading to developing the *hyparxis* aspects. To my mind, one of the key contributions of this model is its unification of not just the chronological aspects of a learning praxis, but also it shows how the ‘timeless’ and ‘timely’ latent capabilities can be nurtured in a consciously designed and effective process. This is more significant than the painstaking enunciation and detailing of multiple stages embedded within the three key processes (learning at the screen, in the lab and in the world), which is another outstanding original contribution. The incorporation of the *aionios* and *hyparxis* aspects are the implicate dimensions embedded in this model which imbue it with the recognition and inclusion of radical perception, radical memory and radical practice.

I need not labour the way this explains my own reading of the sculpture training. Identifying such universal and fundamental aspects among the learning principles and processes underlying human consciousness, makes it eminently transferable and useful. It is now immediately clear to us as to how and why an activity from other fields such as arts, crafts, sports or bodywork can be used to train managers and executives into developing effective systemic learning habits.

8.8 Conclusion

While conducting ourselves in the world, if a sustained dwelling in the orientation to learning *in the moment* (the knowing universe of the present moment) is accompanied by immersion in the praxis cycle sustained *across significant chronological time* (say, ten thousand hours, and clearly featuring both the chronological and implicate dimensions of the PLC); then, this, to my mind, offers an adequate onto-epistemological framework to meet the challenge of characterising a true systemic

learning approach. The next chapter dwells on my synthesis of all the ideas discussed so far, which I call *Immersive Systemic Knowing*.

CHAPTER NINE

Immersive Systemic Knowing: A theory for knowing in practice

9.1 Introduction

The preceding chapters of the thesis have explored several conceptual models. These can be seen as contributing the pieces for my synthesis, which should serve as a reasonably adequate conceptual scaffolding/rough starter map towards an ontoepistemology for systemic knowing. Towards the conclusion of the last chapter, I introduced the *knowing universe of the present moment* and the *praxis learning cycle* as key elements of this framework. In this chapter, I will add back some elements introduced in earlier chapters, to assemble the framework/model that I have chosen to name as ‘*Immersive Systemic Knowing*’. I playfully consider a variety of maps, looking at the cartographic spaces and relationships between these elements, and considering the model in the context of the meta-framing idea of strong reflexivity and teleonomy (from Chapters 1 and 3), the two modes of consciousness and the deep intelligence field (from Chapters 1 and 4). I spoke about the three core elements I posited for a systemic ontology in Chapter 5, namely, mindful interconnectedness, enactive cognition and teleonomy. The elements of the model have been previously shown to correspond to these requirements: the deep intelligence field represents mindful interconnectedness; the knowing universe of the present moment represents enactive cognition; and the deep intelligence field in particular, but also the protention aspects of the present moment and the progressive stages of the praxis learning cycle all accord with the idea of teleonomy.

Having arrived at this point, however, I have a confession to make. I am confronted by a sense of futility and confusion, feeling in the position that a biology teacher in a past era might have experienced. I picture my own teacher back at school, trying to explain to a bunch of unruly adolescents how a frog lives and reproduces, while forlornly gazing at a dissected specimen, stunned by a liberal use of chloroform, pegged out on a wax board. To begin with, it is not very difficult to explain the constituent systems – the circulatory, muscular, and so on, based on detailed anatomical studies, drawings and models. The consideration of the component units of the knowing universe of the present moment in the previous chapter amounts to something similar, even if it is a somewhat preliminary and crude cartography. However, the next step seems

insurmountable: how does one explain the living process of knowing? I shall make a stab at describing some relationships and characterising some aspects of the whole, in a necessarily preliminary and crude exploration. I am happy to be speculative and desultorily playful, satisfied with no finalities; rather, I am revelling in the continued sense of mystery and wonder, which to me makes the whole enterprise of living worthwhile.

Let us recall the idea of strong second-order reflexivity that was discussed in chapter 3. The diagram representing this is reproduced here again for convenience as **Figure 9.1**. In the diagram, I have now added some labels and notations: there is A, A' (a correlate or counterpart element of A), B and C in the primary envelope; and I have indicated or notated the second-order envelope as $f(A, A', B, C)$. This mathematical representation usually signifies that this element (the system observing itself) is a function of (in other words, is somehow composed of or depends on) all the other three elements in the primary envelope.

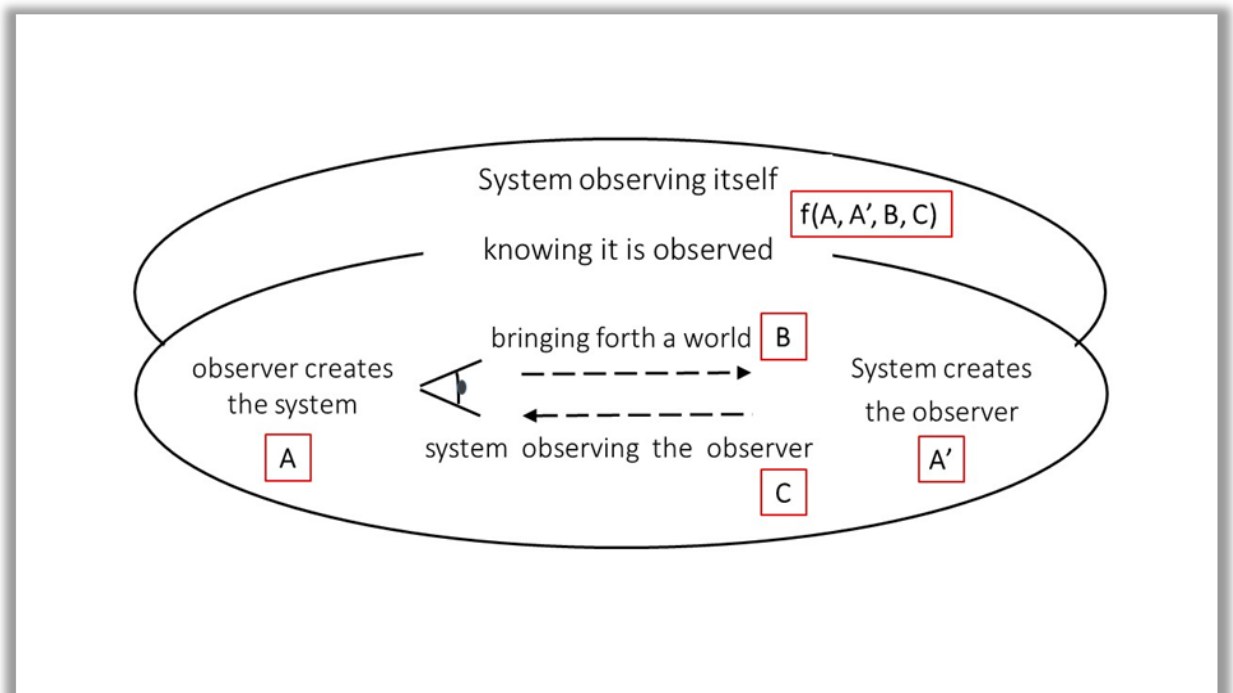


Figure 9.1 Systemic Knowing – Interdependence (from Varela et al, 1993, 11) modified to include Learning, Doing and Cognition

As a rough cartography, we can see that A and A' correspond to (represent) Learning, B corresponds to Doing, and C corresponds to Cognition. Simultaneous awareness of all these three aspects puts one in touch with the very process of Being, which is the second-order envelope. Or, to look at it another way, the awareness of the immersion in the Being dimension enables a realization of the simultaneity involved amongst A, A', B and C.

I spoke earlier of these component elements of systemic knowing - thinking, doing, cognizing and the idea of being – in §§ 7.2 and 8.2.3. This is a conceptual separation of fundamentally interpenetrating aspects; their theoretical differentiation merely helps to uncover the processes that are involved.

9.2 Immersive Systemic Knowing: A rough cartography – *how the pieces connect*

Thus, we may proceed to inquire into the processual aspects in the model of the Immersive Systemic Knowing. This is conceptually dissected on our virtual wax tray in **Figure 9.2** below.

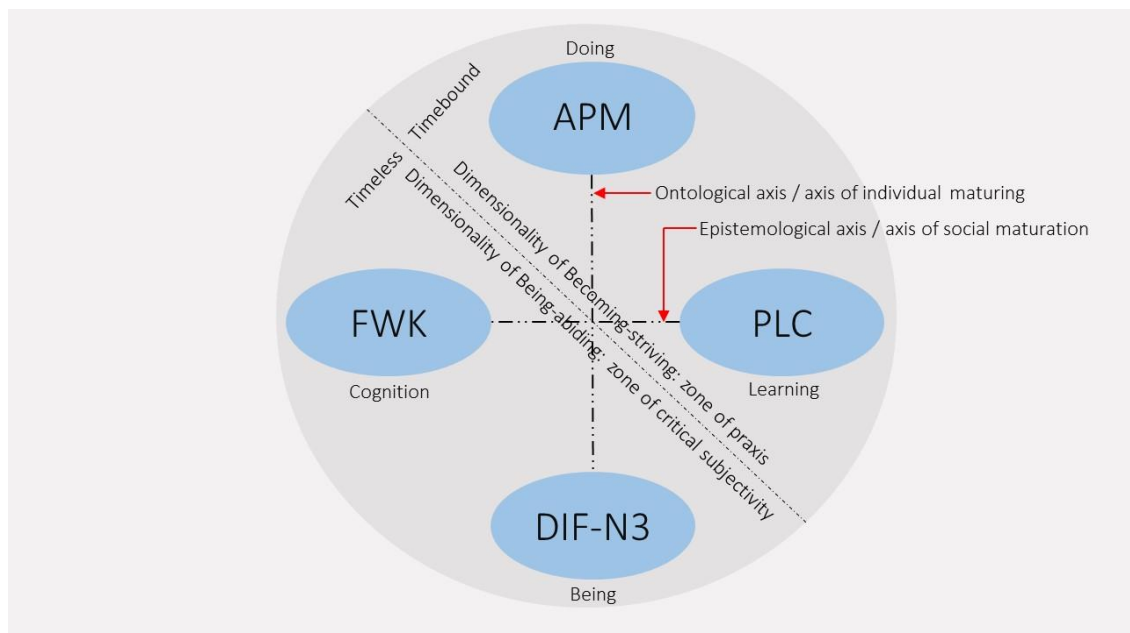


Figure 9.2: Immersive Systemic Knowing: a rough cartography

To my mind, the anticipatory present moment (APM) in a sense focuses (or brings into relief, or perhaps we should say puts on the map) the component element or

dimensionality of *Doing*; the praxis learning cycle (PLC) that of *Thinking*, the four ways of knowing (4WK) that of *Cognition*, and the deep intelligence field accessed through the N3 approach (DIF-N3) that of *Being*. Many relationships between these elements can be traced – the vertical and horizontal axes afford us glimpses of a certain kind, while the pairing of adjacent elements affords other processes to be outlined.

Taken together, the APM and the DIF-N3 represent the ontological dimension or axis; while the 4WK and the PLC represent the epistemological dimension, or axis. An understanding of the way the N3 reveals and aligns us to the knowing nested in the several higher systems that we atomised human beings are a part of, creates the necessary political realignment that overcomes the duality or paradox inherent in sociological or psychosocial theory: how individual agency is to be reconciled to a systemic view of society or ecology. We do not often ask this question about how individual cells, tissues or organs within an organism manage to reconcile autonomy with their larger (organismic) role. Yet the puzzle has not been effectively solved in the domain of psychosocial theory or philosophy, when addressed with atomised logic and modern rational thinking (Gregory, 1992). N3 Knowing provides one possible route to its conceptual reconciliation. An anchorage in an N3 approach automatically allows activation (realization of the full potential) of all the circuits and loops in the APM – especially the anticipatory feedforward loop, enlivening the knowing universe of the present moment and resulting in what I would term '*effortless doing*'. In this way, it also addresses the resolution of the philosophical dualism of the subject and object. This APM – N3 axis also represents the aspect of individual maturing.

Similarly, the engagement of all modalities of knowing using 4WK and the PLC necessarily implies effective reconciliation of the multiplicity of meanings and cultural barriers across people engaged in learning together. Thus, this can also be taken to represent the axis of social maturation.

The APM along with the PLC represents the Universe of Becoming-striving; while the 4WK along with N3 constitutes the Universe of Being-abiding. In the Universe of Becoming-striving, effective systemic doing leads to *effortless action*, in that the action that results involves no exercise of volition or strenuous effort of conscious action in the moment of execution; it falls like a ripe fruit or an arrow springing from the bow of a Zen archer. Similarly, in terms of Systemic Learning, there is no straining of the conscious mind and deliberate invoking of the rational thinking muscles to

represent the realities encountered or experienced; these representations and models flow to the top of consciousness automatically, producing what I would term *authentic theory*. As I have explained before, I am not describing a mystical, pre-rational or pre-conscious way of doing things; rather, this is a post-conceptual capability, where all these ‘muscles’ and skills are sufficiently practised to fade into the background and operate in automatic mode. This allows for a certain aliveness, alertness and nimbleness to experience and an embracing of the new in the moment without any fear or anxiety. Similarly, in the counterpart Universe of Being-abiding, systemic cognition manifests as *true expression*, one that is instantly and unfailingly picked up and resonated with by all other persons participating as a complete and faithful representation of the total import of the shared moment; while the systemic being manifests as an *anchorage in wisdom*, as a reflection of the timeless knowing from the deep intelligence field into the present moment.

9.3 Immersive Systemic Knowing: Another kind of map – *what enlivens the whole*

As an approach to dealing with Systemic Knowing, the APM and PLC together constitute a valid and reasonably complete praxis. In the way they are conceptualised by me, they are necessarily yoked to the 4WK and the N3: this creates the totality of the knowing universe of the present moment. By conceptual yoking, I refer to an intentional act of explicitly recognizing the existence of the processes of the N3 and the 4WK, and thereby the basic anchorage of human knowing in the DIF. (Otherwise, what obtains is the dubious activity of translation and representation that characterizes the mythical knowledge processes of modernity, described by Latour, 1991). *The praxis is thus complemented by the necessary critical subjectivity: this is what confers it the vitality and rigour of strong second-order science.* When this is so, we are engaged in *Immersive Systemic Knowing*.

Critical subjectivity makes possible a level of dialogue, collective resolution of contradictions and movement towards improvement on scales that are larger and incomparable with the use of first-order science or even the weak second-order science approaches of conventional systems thinking. Another way of looking at this is to recognise that, when activity is carried out without this form of second-order reflexivity, which engages the ways of knowing into the APM and the PLC, then what results is only the recognition and solving of problems within a *timebound* perspective. The conscious inclusion of and reflexivity to the aspects of the deep

intelligence field, an understanding and attentiveness to the roles of the teleonomic impulses and an engagement and attunement to the contradictions and tensions inhering in the twin realities of the Being-abiding and Becoming-striving dimensionalities, will draw the wisdom and energy of the *timeless* into the efforts, thus imbuing the shaping of the responses with the critical nature of *timely* dharmic (or truly yogic) action. This is pictorially depicted in **Figure 9.3**.

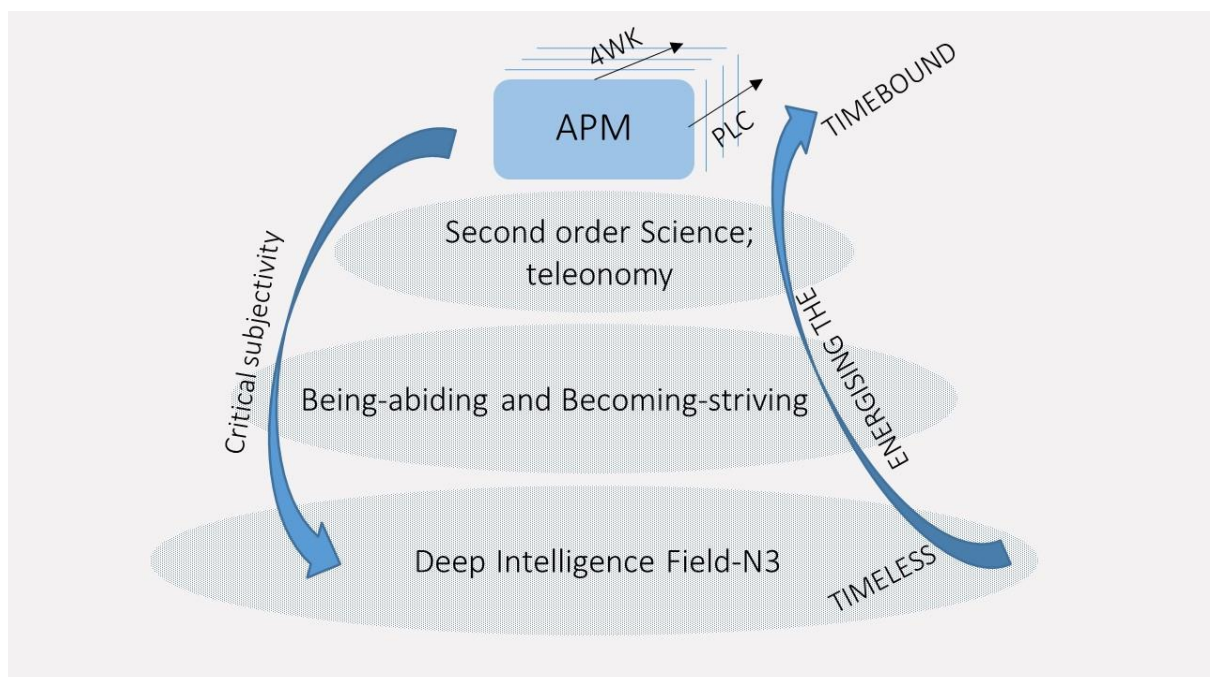


Figure 9.3: Immersive Systemic Knowing: another kind of map

I use the term ‘Immersive’ for a reason. The strong second-order reflexivity, translating into an ability to stay attuned and immersed in Being-abiding (the implicate order of knowing), justifies the use of this term. I use ‘Systemic’ because there is a *simultaneous* immersion and attunement to the Becoming-striving dimensionality. *This means that a critical subjectivity comes into play, enabling the interpretation and representation of the experience and understanding accessed from the Deep Intelligence Field, into the Four Ways of Knowing.* This form of ‘translation’ has a possibility to escape the deficiencies and internal contradictions which mere systems thinking does not altogether escape from – the sort Latour (1991) has warned about, which characterises first order science and the kind of rationality that defines the

‘modern’. Knowing is my term that embraces critical subjectivity and objectivity, and, as a verb, is always happening; never finalized, fossilized. It embraces the welter of processes considered in our dissected morphology of the knowing universe of the present moment.

9.4 The individual and the herd: Shadows and prospects

I stated in the introduction to this thesis that a necessary and critical dimension of social emancipation has to do with the capacity of individuals to deal with the shadow aspects of their own selves and the cultures they represent. This is especially important for those who seek to engage with development processes in a systemic way, and wish for some satisfactory assurance that an adequate systemic learning and engagement had transpired; one that will hopefully not create further damaging effects because of aspects not brought into consideration. This is an audacious requirement, and I cannot say that walking the terrain mapped in *immersive systemic knowing* will meet this. What I can say is that a *sangha* (to borrow a Buddhist term for co-seekers on the path of right human conduct) of ISK practice will hopefully move towards effectiveness in that direction. (These *sangha* already exist, in the efforts in cooperative inquiry groups, wherever action inquiry is faithfully followed, in the Sumedhas community, and in countless other such efforts, many of them not necessarily situated in the ‘modern’ half of the world). In microscopic ways, my own attempt as an individual to abide in a practice of *Vipassana* meditation and yoga lead me to believe that I am, of late, accumulating less stress and residue; and consequently, I am more available to the present moment, for truer expression and more effortless and *dharmic* action. In my own scheme of things, these are not issues for me to stake a claim to or defend. I can only invite each reader to verify and deploy these desultory mappings in the ongoing construction and refining of their own personal grounds for truth and consummation.

The relationship of the individual to the social can be conceptualised in terms of the four quadrants of the holon depicted earlier in Figure 3.1, adapted for brevity in **Table 9.1**.

Table 9.1 The four quadrants of the holon (summarised from Table 3.1 in this thesis)

Inquiry agent's location of perspective	Location of object of inquiry	INTERNAL	EXTERNAL
INSIDE	SELF CONCEPT <i>Me: Inner</i>	WORLD VIEW <i>Me: Outer</i>	
OUTSIDE	PATTERNS OF RELATEDNESS <i>We: Inner</i>	OBJECTIVE CONTEXT <i>We: Outer</i>	

I take the four elements of the Immersive Systemic Knowing model, and visualise them forming a tetrahedron (**Figure 9.4**). This yields a new cartography of relationships between these elements: six axes and four faces. For ease of description, the four elements are numbered as follows: the APM is 1, 4WK is 2, DIF-N3 is 3 and PLC is 4. Let us explore this new land.

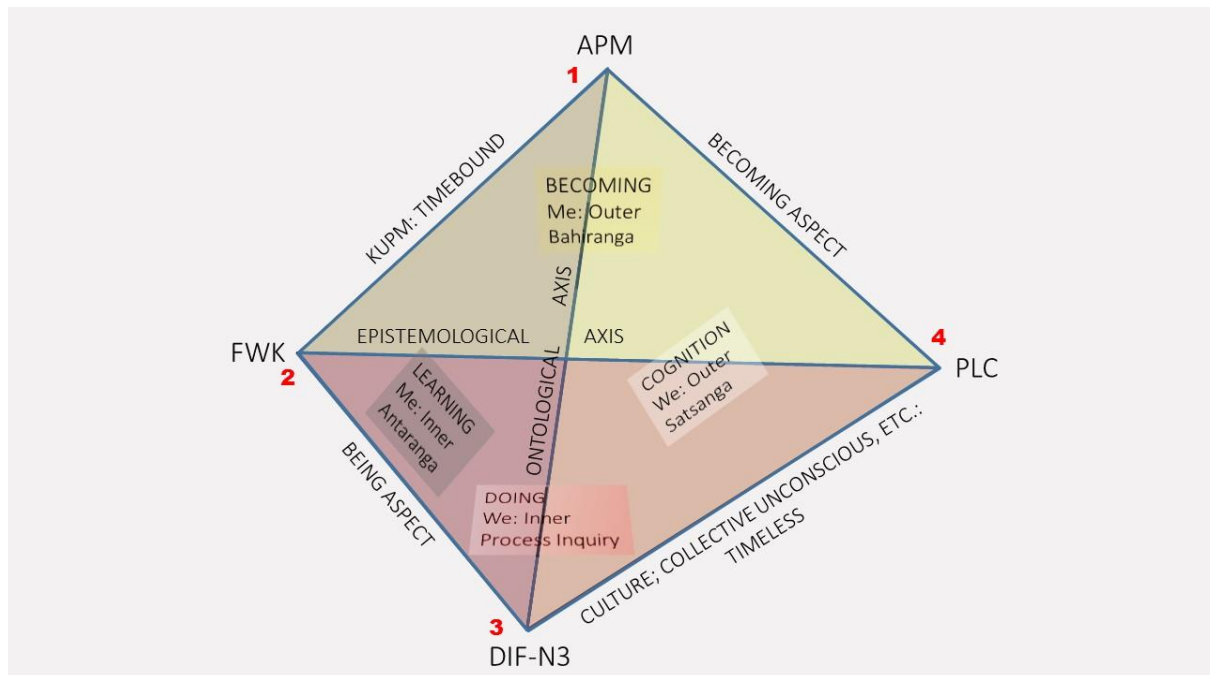


Figure 9.4: The individual and society in Immersive Systemic Knowing: some conjectures

There are three pairs of axes:

a) 1-4 represents the axis of becoming-striving – these elements are about timebound doing and learning (see Figure 9.2); while 2-3 represents the axis of being-abiding – these elements are about timeless cognition and being.

b) 1-2 corresponds to the knowing universe of the present moment– the timebound knowing of the individual, generated in the anticipatory present moment by deploying the four ways of knowing (§8.8); while 3-4 corresponds to the timeless knowing that endures in the collective, in the form of the culture and the collective unconscious, since the DIF-N3 contains this. The praxis learning cycle necessarily makes this tacit knowing explicit in a social context (§s 7.5.2, 7.5.3).

c) 1-3 depicts the ontological axis – the APM is the ontology of becoming-striving while the DIF-N3 is the ontology of being-abiding; similarly, 2-4 is the epistemological axis (§9.2, also see Figure 9.2).

The four faces yield the following characterisations:

a) Face 1-2-3 (left face) corresponds to the Me-Inner quadrant in figure 9.4a. In linking the timebound axis 1-2 with the being-abiding reality of the DIF-N3, it is the more complete knowing universe of the present moment, which develops the character of introspection. This characterizes a deeper *Learning* orientation. Invoking these dimensions together in a sustained way can correspond to what, in yogic terms, is a disciplined inner inquiry - *antaranga sadhana* (Ananthanarayanan, 2012).

b) Face 1-3-4 (right face) corresponds to the We-outer quadrant in figure 9.4a. In anchoring the collective inquiry quest signified by the axis of becoming-striving (axis 1-4) to the DIF-N3, this to me represents a potentized collective *Cognising* orientation: making explicit and consolidating tacit knowing into collective understanding. This is what I have referred to earlier as the role of a *sangha*. Such a type of inquiry, signifying the best aspirations of all the methods discussed in chapter 7, can approximate what in popular Hindu/Buddhist terms is called a *Satsanga* (a comradeship of inquirers on the spiritual path).

c) Face 2-3-4 (bottom face) corresponds to the We-inner quadrant in figure 9.4a. By linking the various subjective axes (the being aspect of 2-3, the timeless unconscious aspect of 3-4 and the epistemological axis 2-4), this focuses attention on the collective unconscious processes. To me, this space can be paralysing and conducive of collusive avoidance. It can only be accessed and dealt with to yield knowing through the rigour of an approach such as the process inquiry tradition of Sumedhas. To me, this signifies an assertive, powerful collective effort: a *Doing* orientation of a most radical sort. The aspiration for social improvement needs anchoring in this level of affirmative collective action.

d) Finally, face 1-2-4 (facing, behind) corresponds to the Me-outer quadrant in figure 9.4a. Here, the ontology of the APM is energised only by the 4WK and the PLC: this is the sort of orientation that can lead to highly ritualised behaviour and the ossification of schemas in the schema inventory of the APM. While extended practice can result in what might seem to be professional competence or expertise, the wellsprings of creative energy and innovative response can dry up if no aware connection is established with the DIF-N3. (My current understanding is that the connection always exists: the core identity of the mechanism of life is the DIF-N3. This corresponds entirely with Latour's (1991) characterisation of the project of purification, which seeks to deny this aspect). In yogic terms, this aspect can

correspond to *Bahiranga sadhana* (practice of an outer discipline), and interestingly, the exhortation is to avoid being submerged in an egoistic identification with such doing to the exclusion of the awareness of the DIF (Ananthanarayanan, 2012).

9.5 Immersive Systemic Knowing and the goals of systems thinking

To my mind, the processes I describe above from the tetrahedron view satisfy the epistemic, political and pragmatic puzzles and represents a reasonable stab at a theory of systemic knowing. These puzzles were summarised by me in Table 5.1 as: the political challenge of including the margins; the epistemic challenge of a theory that corresponds to my characterisation of systemic ontology; and the pragmatic challenge of developing methods that can deal with global problems. As a final explanation of the idea of immersive systemic knowing, let me expand on this point now. In the introductory chapter, I set out these requirements of a relevant systemic theory, and I have summarised this in columns 1 and 2 in **Table 9.2** below.

Table 9.2: The key requirements of a systemic perspective

Dimension of Social / Management Theory	The ask / requirement	Contemporary crisis (shadow aspect; 'otherness')	Systemic Perspective
Political	Uncovering organising principles – beyond traditional power – [hierarchy]	Fascism	Interconnectedness across nested holarchies (dissolving all boundaries and dualities in systemic being)
Epistemic	Uncovering shared meaning and values across deep cultural divides – [collaboration]	Herd mentality and parochialism	Enactive cognition (finding social unity in systemic cognition)
Pragmatic	Individuals recovering genuine and responsible agency – [autonomy]	Narcissism	Teleogeny (finding purpose aligned to larger world in systemic doing and learning)

In column 3, I have listed what I consider as the significant shadow side of our collective inability to meet these requirements. When a suitably sophisticated understanding of the principle of hierarchy and control in nature is missing, the substitute for that is a sense of all or nothing related to power and control; which leads to a fascist mentality. When shared meanings and values across social and cultural divides are missing, this leads to parochialism of various sorts: some of the appeal to ethnic and nationalist sentiments whipped up politically and the resultant xenophobia is a sign of that. When mature individual agency does not subsume within it the

possibility and need for social responsibility, individual liberty takes the form of narcissism. In column 4, I restate in brief my principles for a systemic ontology.

In the next **Table 9.3**, I continue to summarise the ground covered in earlier chapters. While column 1 lists the specific systemic ontology, column 2 lists the challenges discussed in Chapter 5. In Column 3, I state the essential nature of timebound systemic knowing that any form of systemic inquiry or intervention is inescapably bound to involve. Column 4 then shows how the N3 approach makes possible the interpolation of the timeless aspect of knowing into the situation. The simultaneous awareness of the timebound and the timeless knowings in inquiry (in and across moments) leads to the accomplishment of timely knowing and action: the four elements of true expression, effortless action, authentic theory and anchorage in wisdom that were discussed a little earlier in this section. By showing this correspondence between the three dimensions of systemic ontology that I have privileged for my conceptual inquiry and the three features of an N3 approach, I am making the case that the recognition of the N3 (and by implication, the DIF) is inescapable to build a genuine systemic knowing.

Table 9.3 The Systemic perspective and the implicate dimensions of the N3 mode of knowing

Systemic Perspective (ontology)	Challenges	Timebound (explicate) orientation	Timeless (implicate) orientation N3 Approach	Timely synergy (dharmic, true yogic stance)
Interconnected-ness	Duality paradoxes and ideas of space, time, modernization	Duality	Impossibility of knowing everything; Nescience	Anchorage in wisdom
Enactive cognition	Action paradox and language paradox	Representatio n-ism	No guile; accepting the way things unfold; freedom from the need to predict and control	True expression
Teleogeny	Intentionality paradox and ego paradox	Purposing	No striving; abandoning will of any sort	Effortless action, authentic theory

My final statement in relation to this is that the practical operationalisation of the N3 principles (listed in column 4 in Table 9.2) can be realised in terms of the four ways of knowing (the 4WK framework), as shown in the next **Table 9.4**. Column 1 lists the four ways, and column 2 describes their essential function. In Column 3, I take the liberty of stating what I see as the predominant pathologies related to these ways of knowing that appear to saddle contemporary modern Western society with problems.

The N3 orientation, or the ‘Being-abiding mind’, required to restore healthy functionality may be described in terms of certain correlates, which are listed in the final Column 4. I have stated these correlates of a healthy being-abiding mind in terms of what I refer to as an orientation or quality; a process dimension, a process metaphor and a quality metaphor. (These are listed in Column 4 in the same order, separated by semi-colons).

These symbols/words simply sprang to my mind in a revelatory torrent during a session at the 2014 conference of the International Society for the Systems Sciences, and I had to write furiously to jot them down as they arose. Clearly, any meaningful access to such language and metaphors as contained in the last column are outside the territory of ‘Science’ and such knowing is only available in the experiencing.

Considered from a neo-positivistic orientation, proof will be demanded for these attributions; while from an interpretive tradition, they will simply appear solipsistic. My entire effort attempts to point beyond both of these, and show the necessity of seeing the simultaneity in the becoming-striving and being-abiding universes. Since the argument had of necessity to begin and lead from the Becoming (science) side, it seems fitting to include a glimpse of what lies on the other side of the fence.

What I am coming to is this: I refuse the need to make Table 9.4 conform to rational explanation. Instead, I shall summon the audacity to invite the reader to commence her/his own exploration. Become playful. Consider: how would you like to explore attributes, pathologies, or any other correlates for the four ways of knowing? Do you see colours, taste tastes, draw signs, and/or find symbols in poetry or literature? Allow yourself to explore along some new pathways; use bodywork or any outlandish scheme you can conceive, to create columns against these four ways of knowing. Use sticks, stones, playing cards, and consider why some pattern was called in response to your question. Find your path to access a logic beyond rationality; an immersive, systemic knowing that cries out from deep inside that it is your truth.

Table 9.4 N3 in operation: suggested orientation/stance for the conscious mind in the four knowing modes

Knowing Way	Functional response	Contemporary pathology	Being mind correlates: orientation (quality) - - quality metaphor - - process dimension - - process metaphor
Experiential	Meeting	Consuming: blocking the flow	Limpid mind; water; opening channels; birthing.
Presentational	Enacting	Exhibiting; titillating: diverting the flow	Spirit mind; air; priming the channels; breathing.
Propositional	Manifesting	Justifying/ falsifying: drying up the flow	Eternal mind; earth; balancing the flow; harmonising.
Practical	Flowing	Conquering: sullyng the flow	Compassionate mind; biome/gaia; dancing the current; flowing.

CHAPTER TEN

Conclusions

10.1 Overview

This chapter reviews and summarises the entire thesis, in terms of the origins and nature of the research quest; the method and value of the outcomes; the contribution to knowledge and practice; and finally, its limitations and future directions. A reflective note and postscript are added.

10.2 Origins and approach

This research proximately originates in my desire to find a new balance in my career between theorising, practice and policy impact. However, the root quests that underpin this exercise stretch pluralistically into various locations in my past: some of the questions have a character of being timeless; while the coming together of all these perturbatory impulses into this specific doctoral effort at this point has a quality of timeliness to it.

Early in my childhood, I developed impulses to treat authority and given wisdom with scepticism, which moulded the scientific culture and training I received into a kind of radical empiricism. A chequered life story and an itinerant career saw me traverse widely different situations and contexts, often with contrasting value frameworks. A peculiar unifying streak throughout this sojourn was the repeated encounter with (and a resultant widening of my own perspectives to embrace) forms of knowing considerably different from the usual. This insight found nurturance and grew in my practice of employing modalities from theatre and meditation to group inquiry in varied settings. A recent engagement in teaching and an opportunity to influence national accounting policy through some original research whetted my appetite to develop my academic side. I chose a doctoral study in systems science because of my longstanding familiarity with the discipline, which I deploy in my practice.

When I applied for entry into the programme, my proposal was to look at the Indian handicraft sector from a CST perspective, with some idea that both domains might be enriched by the inquiry. In the early phase of my studies, I worked towards a formal assessment document that proposed to create the design for a new sort of University, one where the Crafts sector and the modern sector in India informed and learnt from

each other on an ongoing basis. The outcome itself held appeal; moreover, giving shape to such an institution after my doctoral study seemed a plausible career plan.

Locating a gap in systemic intervention theory and practice related to ways of knowing, I inquired into their operation in an alternate learning context, by apprenticing to a traditional master craftsman. Meanwhile, significant changes in the political context in India made me revise my overall plan and abandon the idea of the Crafts University. I cast about for an alternate project to apply my learnings about the four ways of knowing. Eventually I settled on teaching systemic thinking and the four ways of knowing to a leading corporate training agency in India. My method of inquiry corresponds somewhat to the principles of action inquiry and cooperative inquiry, in terms of embracing radical learning, and employed the ideas of second-order science. While having a certain focus in mind, I have been open to an evolving learning context. It might be pertinent here to quote Flood:

“Seeking absolute mastery as reductionism and science do, misses the point of human being. It turns the magic of mystery in our lives into the misery of failed mastery over our lives. The point is that complexity emerges which the human mind is no master over. In fact, the human mind is both the creator and the subject of complexity, not an externally appointed master over it and all its parts. Balancing mystery with mastery means living somewhere between the hopelessness of the belief that we are unable to understand anything and, at the other extreme, the naivety of the belief that we can know everything. *Human beings in this way know of and learn within the unknowable*. Thinking systemically thus demands an overhaul of concepts and approaches in current use in ‘management and organisation’...” (1999, 83).

My thesis aims *to open a dialogue on methods for systemic knowing*, and my research has been a highly experimental effort in that direction. While I have appraised myself about existing theory related to methods from multiple related disciplines, I have not restricted my effort to any one specific frame of evaluation. I have reported in Chapters 7 and 8 on the method and evaluation for each of the two field interventions that were a part of this larger theoretical exploration.

10.3 Contribution to theory

I argue that this research effort has advanced systems thinking theory in two ways:

1) It has introduced theoretical contributions from multiple sources outside the discipline and discussed them in systemic terms (sometimes adapting or extending them) to highlight their potential value to invigorating theory in the discipline (chapters 3, 5, 6, 7 and 8).

2) It has offered some original theoretical elements that potentially support enrichment of the field (especially chapters 5, 8 and 9).

Some of the theoretical inputs introduced from other fields are:

a) the idea of the two modes of consciousness – being-abiding and becoming-striving (its origins are in the Indian process inquiry perspectives I learned at Sumedhas; I have articulated my own understanding), and relating it to systemic philosophy (chapter 3).

b) the discussion on holism and reflexivity from Indian practice and the idea of strong second-order reflexivity (chapter 3).

c) the ontological frameworks of the anticipatory present moment, four ways of knowing and the epistemological frameworks of the four ways of knowing and the praxis learning cycle (chapter 8).

d) several critical ideas and concepts to expand the understanding of knowing, including the three modes of experience of time, postconceptual knowing, critical subjectivity, radical perception, radical memory and radical practice (§8.6.5, §8.7).

Original theory contributions include:

e) An original critique of systemic intervention indicating a gap between espoused theory and its affordances for practice, as well as its privileging of rationalism and language-based discourse as the primary ways of knowing (chapter 4).

f) Some original observations indicating that other contemporary contributions to systemic theory also possess a gap in terms of addressing only one mode of conscious knowing, namely, becoming-striving, and omit recognition of being-abiding (§4.5.5 to 4.5.9).

- g) Importantly, characterising systemic ontology in terms of three interrelated principles (mindful interconnectedness, enactive cognition and teleonomy). This is a preliminary and possibly incomplete formulation; however, it has served well to ground discussions on where and how systemic epistemology and practice are to be expanded (chapter 5).
- h) Related to the above, characterising the deep intelligence field, indicating its wide (often tacit) recognition across an array of fields and sources, and indicating some unusual features such as its intrinsic nature of supporting self-healing, expansion of conscious knowing and creative intuition (§6.1.5, Chapter 7 and §8.5.1).
- i) Suggesting an approach, termed N3, to develop explicit attention to the deep intelligence field and reflexivity to the being-abiding mode of consciousness.
- j) Describing four domains of mature practice from related disciplines, which are related to the systemic ontology and demonstrate how to operationalise the N3 approach and access the deep intelligence field (chapter 7).
- k) Significantly, developing the frameworks described at (c) and synthesizing from them an original model of immersive systemic knowing (chapters 8 and 9).

10.4 Contribution to practice

The thesis argues that experience, in the ultimate analysis, is the ground of all knowing. It privileges practice by demonstrating how radical practice and suitable methods can advance knowing. It constructs a theoretical framework called Immersive Systemic Knowing to underpin a possible expansion in the methodology and methods of systems thinking. By indicating how methods in adjacent disciplines demonstrate a greater reflexivity to systemic realities, it points the way to their inclusion or adaptation in systemic practice.

10.5 Contribution to larger domains of knowledge

This effort initiates inquiry that potentially bridges the gap that continues to be experienced between theory and practice. It argues for the value of tacit practitioner knowing, and methods for its ongoing articulation into collective knowing in inquiring groups. It emphasizes the value of sustained practice to better knowing. This is

potentially of fundamental value to the underpinning philosophy in the larger disciplines of the management sciences and social sciences. It provides a fresh impetus and discussion thread for efforts to reconcile the gap between the ‘sciences’, the ‘arts’ and the ‘crafts’ (domains of practice); and between Western and Eastern approaches to knowing.

10.6 Limitations and future directions

The thesis seeks to provide a unifying schema to understand and link systemic theory and practice, and make them more effective. The path to generating a framework for this schema has traversed and drawn on several wide-ranging domains of theory and practice. Of necessity, such a broad-based effort falls somewhat short of the ideal in terms of exhaustive coverage of the literature, deeper analysis of the terms, meanings and sources of ideas, and of a necessary economy in synthesis and brevity in presentation. With time and effort, these shortcomings are addressable. Nevertheless, I would venture that some original value and a clear and fresh new direction for inquiry into systemic knowing has emerged from this experiment, making the sacrifice of depth in favour of breadth worthwhile. The emergent model is highly tentative and there is a lot of ground for careful testing and development of these beginnings.

10.7 Reflections

My key understanding of the learning praxis that operates in traditional teaching situations involving complex knowledge systems, and the significant role of the Deep Intelligence Field in fostering coherence and creative insight, emerged from my second fieldwork period. As I sat down subsequently to translate the record of my activities and develop my ideas, I desisted from directly grappling with the component idea elements and abstractions that modelled my experiences for me; rather, I sought to stay with many of the words and symbols floating in a disordered state through my mind, only capturing connections and insights as they emerged from my deeper self, in the form of sudden phrases, formulations or insights-into-connections, which were all meticulously noted but never further developed or written up with detailed articulation. I cannot say that this was a deliberate strategy, since it was not a completely conscious rational decision. Rather, I seemed to be on the cusp of discovering something new and important about my own processes of cognition and knowing; and some inner impulse kept me from tearing and working at the ideational elements in an analytical mode.

This has resulted in a mesh of jotted ideas that I eventually assembled on a set of charts, and led to the synthesis of the Immersive Systemic Knowing Framework. At this later stage, I did some analysis and experimented with the cartography, and played with the ideational elements and their interrelationships.

As I reflect now on how this project unfolded, I continue to carry a sense of mystery about my own processes of knowing. At a certain minimal level, I have satisfied the need for order and, shall we say, decorum. Arguably, I have had defined and explicit objectives at various stages of the inquiry. Yet, I have been open to them evolving and changing over time. Whether this represents a better approach than the more conventional rational-analytic one I originally set out to use, I am unsure, although I am able to justify this in terms of second-order science.

Actually, despite these original intentions to be more formal, this emergent style of learning has always been my approach, from very early childhood beginnings, evolving in sophistication as time passes. However, during these three years of this doctoral effort, I have watched my own processes undergo some transformation. I am much more willing to trust the flow of events, and have much less need to control outward events and outcomes. Whether this is something that can be carried over into a practical life, I am unsure. (The life of a doctoral student affords a rare luxury of thoroughly indulging one's intellectual pursuits; in my case, accompanied by diminished family responsibilities, as they remained in India while I studied in the UK). Yet, there is a germinating sense of something profound in this transformation, which I cannot yet characterise. At one level, I sense a deep shift within myself in terms of placing more confidence in guidance from the deep intelligence field, and in the possibilities for coherence, both individually and collectively for humankind, notwithstanding the urgent pressure of the world problematique in its current day manifestations.

To use a phrase I encountered somewhere along the way, but whose origins escape me, I can say that, in this effort, I have been sincere, but not serious. Which is to say, that I am not stuck with a specific action or desired outcome; what's more, I remain aware that my control of all of the elements of theory and practice in this doctoral study is only partial. At the same time, in a deep realisation of being co-implicated with the world upon and within which I am acting and seeking outcomes, I trust in two ways: first that, when in alignment, deep change and movement can be effected by small

actions on my part; and second that, in alignment, the larger system is supportive of my own development. In these three years, I have learnt to become even less serious, and even more sincere, even passionate, in my action.

At the same time, I have also developed my ‘thinking muscles’, both for analysis and synthesis of ideas, and the imperative to do a lot of writing has at once reinforced both the creative potential and the mystery of articulating tenuous knowings into language. Despite diving into this zone and trying to recover a sense of the processes involved, I feel I have barely touched a mysterious core that begs much further understanding. In the final analysis, I remain unclear about some aspects of the relationship between the intuitive, tacit knowing arising from the universe of being-abiding and the knowings in the universe of becoming-striving, where expression of ideas into language and dialogue is critical for knowing.

There are many other outcomes at the end of this journey that I might have (at least in part shared) here: my new formed acquaintance with the Rune cards and their always supportive insights; my journal; my sketches; but I have not dwelt on these things. I carry the pregnant sense that further significant insights awaits emergence in the short-to-medium term to follow.

All of that notwithstanding, I believe that certain key insights and findings of this thesis are a valuable resource for a more effective systemic approach, despite the crude exploration and rough cartography that characterises my research adventure so far.

10.8 Post script – ‘Walking the talk’:

It has been difficult, and frustrating at times (not to speak of the irony), to dwell in a sustained and perhaps excessive *theoretical* effort to articulate a case for *practical* knowing! It was my desire, when writing up my thesis, to perform a simple exercise called ‘walk the talk’; a theatre improvisation from Raghu Ananthanarayanan that I frequently use. Unfortunately this was not possible within the time and financial constraints I faced. Nevertheless, it is worth mentioning as a future possibility. It requires that I assemble a group of fellow inquirers into a room. One of the maps that I have created for Immersive Systemic Knowing would be represented, or notionally marked, onto the floor. Each of us then seeks and assumes a position on the map representing particular ideational elements (or between them, anywhere in the space, representing some boundary or relationship). Speaking from that location in the first

person, each then shares reflections about: What does that idea, or element, mean (or signify) to me? Why can I relate/not relate to it? What are the multiple ways in which I relate to the element? What has been my experience? ...and so on. The idea is to respond to one another and invite further exploration from each other, with the rule that such a dialogue is not reduced to a purely cerebral or abstract exercise; all statements have to be in the first person voice, in terms of (my) personal here and now evocations and provocations, and in relation to (my) specific location within the field (map) of idea objects. Often in this kind of exercise, movement within the space, in my relationships with the varied elements and the tensions inhering in their inter-relationships, or while interacting with other presences and voices standing in for the other elements, leads to significant exhumation and revealing of tacit knowing. This leads on to redefining, renaming, reshaping, and other rework and improvisation of the map (idea field). At a suitable stage, the exercise can be shifted into an analysis and intellectual discussion on the model.

I still think this would be worth doing, and it gives a new twist to the idea of enactive cognition: here is an exercise that can powerfully reveal to us where we stand in relation to ideas we have projected out, and where abstracted objects and things stand within us. It can bring a set of persons together around a shared resonance and evocation of these very dispassionate and disparate objects that potentially could otherwise begin to rule over us. Interconnectedness, and co-evolving purpose, also, can be felt in the room. I can be in simultaneous touch with both my modes of consciousness, and can also feel in co-evolving unison (of developing purpose and action) with the other energies in the room: I am ‘the system observing itself, knowing it is observed’.

Appendix A CALENDAR OF ACTIVITES

Date	Activity
July 9	Went to India
15	Wrote to six persons after speaking to them over past few days about my project requirement.
21	Visit to CTA Bangalore. Met CPN, CKD, Seema
26	Travel to Washington to present paper at ISSS conference
August 3	Return to Chennai
26	Visit to CTA – detailed discussions; agreement for my joining GNVC programme to see CTA at work
September 8, 9	GNVC programme at Bangalore campsite
October 3	Sent formal communication to CTA for project collaboration after approved by PhD supervisor
6	Supervisory Skype
10	Detailed workshop design communicated by me to CTA
13	Visit to Pondicherry for discussions with Prof RV
17	Supervisory Skype
24	Supervisory Skype
November 4	Made presentation about research proposal at Chennai Nanganallur office
11	Further talk with small group at Bangalore office
12	Supervisory Skype
WAITING	Standoff and issues about 3 days' time off

26	Formal half day presentation at Bangalore office to full team
December 2 to 4	INCEPTION WORKSHOP
20	Bhargavi visits me for half day refresher on four ways of knowing framework
January 8,9	Doosan programme

APPENDIX B: Summary of evaluation - CTA workshop							
Questions		<i>Numbers in the cells below indicate number of respondents who agreed with the description on top of the column</i>					
Section 1: Usefulness of workshop							
Q. 1	How useful was this workshop for you?		<i>Not at all useful</i>	<i>Not so useful</i>	<i>Neutral</i>	<i>Fairly Useful</i>	<i>Very Useful</i>
			0	0	0	6	2
Section 2: Purposes of the Workshop							
<i>Workshops can achieve a number of different purposes (although no one workshop can achieve all purposes). Please help us to understand what purposes were achieved in this workshop by answering the following questions:</i>							
To what extent do you agree or disagree that the workshop has helped you to ...		<i>Strongly Agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly Disagree</i>	<i>Not applicable</i>
Q. 2.1	Put forward ideas for discussion	2	6	0	0	0	0
Q. 2.2	Recognise that there are many different points of view on organisational transformation	3	5	0	0	0	0

Q. 2.3	Gain a better idea of the possible options for handling systemic transformation	0	3	3	2	0	0
Q. 2.4	Change your mind on what ought to be done about organisational transformation	0	2	5	1	0	0
Q. 2.5	Think more creatively about systemic transformation	0	4	4	0	0	0
Q. 2.6	Learn more about the issues surrounding systemic transformation	1	4	2	0	1	0
Section 3: Negative aspects of the workshop							
<i>These questions address potential negative aspects of, or things that might have gone wrong at the workshop.</i>							
To what extent do you agree or disagree with the following statements?		<i>Strongly Agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly Disagree</i>	<i>Not applicable</i>
Q. 3.1	The purposes of the workshop were clear	0	3	4	1	0	0
Q. 3.2	What was expected from me during the workshop was not clear	0	2	2	3	1	0
Q. 3.3	There was too much talk	0	1	2	4	1	0
Q. 3.4	Workshop discussions were free and open	2	5	0	0	1	0

Q. 3.5	Issues of systemic transformation were made more complex than they actually are	0	1	2	3	1	1
Q. 3.6	This workshop was different from my previous experiences with workshops	1	4	3	0	0	0
Q. 3.7	My views were not listened to	1	0	0	4	3	0
Q. 3.8	People worked well in a team	2	5	1	0	0	0
Q. 3.9	I had sufficient information to take part in workshop discussions	0	7	1	0	0	0
Q. 3.10	There were issues that could not be discussed	0	4	1	3	0	0
Q. 3.11	My 'cultural' viewpoints were acknowledged by others within the workshop	0	5	1	0	1	1
Q. 3.12	I felt pressured to agree with the group	0	0	6	2	0	0
Q. 3.13	Significant issue(s) were missed in workshop discussions	0	1	3	4	0	0
Section 5: The Ways of Knowing Framework							
<i>Please tick the appropriate box:</i>			<i>Not at all useful</i>	<i>Not so useful</i>	<i>Neutral</i>	<i>Fairly Useful</i>	<i>Very Useful</i>

Q. 5.1	How useful was the exploration of the ways of knowing framework to you?		0	0	1	4	3
To what extent do you think the four ways of knowing framework is useful to...?							
Q. 5.2	Developing a systemic understanding of the situation		0	0	0	7	1
Q. 5.3	Exploring and developing a theory of education/ training		0	0	0	7	1
Q. 5.4	Exploring and knowing more about yourself in relation to a situation		0	1	0	4	3
Q. 5.5	Exploring and knowing more about the contextual aspects in a particular situation		0	1	3	3	1
Q. 5.6	How useful was the application of physical movement activities to you?		0	1	0	3	4
Total attendees at the workshop: Full attendance: 8; part attendance: 2							
Total respondents to evaluation questionnaire: 8							

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