

Meta Rational Ways Of Knowing

Raghav Rajagopalan^{a,@}

a: Hull University Business School

@: raghav.rajagopalan@gmail.com

Systemism and the case for other ways of knowing

Current approaches to systems thinking – the various revisioned approaches to Critical Systems Thinking (CST) [1–4] as well as approaches contemporaneous with CST ([5], pp. 81-88) – suffer from a common limitation: their dependence on rationalism¹. I term this affliction *Systemism*, akin to ‘scientism’ – the belief that all pure knowledge can only flow from the assumptions and methods of the natural sciences. In effect, the implication is that intelligibility (or the basis for understanding) about systems rests solely on explanations framed in logic and communicated through language (see [5], p. 100 for detailed argument). Churchman argues eloquently about how problems in human social systems are not amenable to mere rational analysis ([6], pp. 24 and 151). Bateson goes further, arguing that ‘mere purposive rationality is virulent; necessarily pathogenic and destructive of life’ ([7], p. 146). Therefore, I invoke the expression ‘meta-rational’: this refers to ways of knowing that are not necessarily expressed through descriptions in concepts or categories crystallized in language². The argument for this is unfolded in the chapter.

From the foregoing, we can say that one key requirement to strengthen systems thinking is an adequate *epistemology of systemic knowing*. ‘Epistemology’ refers to ways of knowing or understanding the world. (See [5] for a comprehensive analysis; or Rajagopalan and Midgley [8] for a quick summary of this argument).

Let us begin by considering: *What does Systems Thinking aim for?* Inter alia, it seeks a comprehensive, or holistic³ understanding of a situation or phenomenon, to improve it or forestall its worsening. To overcome systemism, we could study how other disciplines approach a comprehensive understanding that supports actions for improvement. I find two sorts of sources that may assist our quest. One source is contemporary approaches from adjacent domains. Action Research readily offers itself, being a field very much allied with Systems Thinking [12]. The second source is wisdom traditions across human cultures outside the modern West: we might carefully consider what they offer to systems thinking.

¹ Rationalism refers to the view of knowledge that regards reason and logic as the fundamental criteria – the chief source and test, final authority and arbiter – of knowledge, that should drive belief and conduct. Thus, it is opposed to any reference to sense experience, instinct, emotion, intuition, religious/spiritual traditions, or other such referents, which are variously included in other approaches.

² This is explained in detail later. Also see [8].

³ While it is now accepted that no analytical method can offer absolutely comprehensive knowledge [9–11], the systems approach attempts to consider all relevant aspects and their interactions. The term holistic has conflicted interpretation and acceptance in the systems thinking fraternity – see Rajagopalan, 2016, 27-29 for a discussion on its origins, meanings and useful applicability.

Transcending systemism

If we accept the limitations of rationalism as an underpinning cognitive stance of systems thinking, we must find ways to overcome this.

Tracing back in the literature, Jackson [13] records the evident application of meta-rational understanding⁴ in successful systemic interventions. I find similar evidence in published case studies and my observation of some facilitators (Rajagopalan, 2016, pp. 88).

In all these cases, I have observed a common underlying factor. Penetrative understanding is accomplished through purposive cultivation of a *metacognitive stance* – a cognitive orientation that can look for systems patterns, or, put another way, a specific skill or capacity to recognize various elements of systemicity in a situation. This is a term coined by [14]. (See [5], for detailed arguments – especially, chapters 6,7 and 9). This is practised consciously by some facilitators, intuitively by some others, and in mixed degrees by a third set. Regardless, the metacognitive stance (in all cases) depends crucially on the harnessing of *meta-rational ways of knowing*.

It is now increasingly accepted that such knowings are *normal* to human experience and *constitute the real underlying basis of all knowing*. Arguments have been advanced from a variety of perspectives, disciplines and research programmes about this, and it is too extensive and complex an issue to discuss here. In Rajagopalan 2016, I have included literature from arts-based research, documentation from action research, and testimony from my own experience. The literature is vast and varied. I will mention a few examples. Brody [15] in his celebrated anthropological study of the Athapascan Indians records their ways of being, knowing, doing and communication – much of it non-verbal. Somé [16] identifies a sacred, spiritual area of knowing within the self which he identifies as nonlinguistic; he avers that there are things we know which simply cannot be expressed in words. The French philosopher of science Bruno Latour [17] argues that the entire construct of modern thought (rational-scientific thinking) depends for new insights and discovery on unconscious mental processes that it has derecognised and delegitimised, which continue to operate below the radar and fulfil the processes of modern thinking. Abram [18] dissects and reveals the knowledge and the connection with nature which was forfeited by the human race when we became a modern society heavily dependent on the written word. Laszlo [19] notes from frontier research in various sciences the existence of an all-pervading instantaneous intelligence which interconnects everything (he suggests the presence of an “in-formation field” which he names as the Akashic field)⁵.

⁴Jackson does not use the term meta-rational – this is my interpretation of what he has set down.

⁵ For a fuller discussion, see [5]. In that work, I have examined in detail the relevance of the ideas of Ervin Laszlo, Ramses Fuenmayor (systems philosophy); Charles West Churchman, Gregory Bateson, the Santiago school of cognition, Anthony Hodgson (systems sciences); Bruno Latour (philosopher of science), John Heron and Peter Reason (participatory research), William R Torbert (action research), Pranee Liamputtong and Jean Rumbold (qualitative research); David Abram (performance art, cultural ecology and philosophy of knowledge); Stanislav Grof, Carl Rogers (psychotherapy); Mark Epstein (Buddhism and psychotherapy); Eugen Herrigel (Zen Buddhist studies); Martin Prechtel, Malidoma Somé (indigenous wisdom); Peter Levine (trauma healing); Swami Yogananda, Raghu Ananthanarayanan (yoga); Coutu and Misino (negotiation); Konstantin Stanislavsky (theatre); Elliot W Eisner (art) and Hugh Brody (geography/indigenous wisdom). I would add to this list now, some further sources – Thompson [20] (consciousness studies); Chemero, [21] (cognition); Damasio, [22] (the cultural nature of the mind); Lakoff and Johnson [23] (metaphors: language and meaning).

In this chapter, I describe the epistemological dimensions involved in meta-rational knowing, which enable the shift to a systemic metacognitive stance⁶. I conclude the chapter by touching upon how practitioners can build systemic capacity through cultivating various practices to harness meta rational knowing. Several conceptual tools are available that can further aid in harnessing various practices towards systemic knowing. Two examples of such tools are described in this chapter: the DSRP⁷ and the Four Ways of Knowing frameworks. Experience with the use of the DSRP framework shows that adopting a metacognitive stance helps to develop a systemic perspective [14]. This is also the outcome of my research with the Four Ways of Knowing framework [8]. These are described in later sections.

What we can learn from Action Research

Action Research, first propounded by Lewin [24], involves ‘learning by doing’ whereby practitioners conduct systematic enquiries, backed by good theory and research methods, to improve their practices and situations. It is sometimes led or facilitated by researchers but *always* aimed at real-world problems (the practical concerns and needs of some particular group of persons). It is typically cyclic and participative and largely relies on qualitative and reflective approaches. It responds to the emergent needs of the situation and builds on emergent learning outcomes [25–28]. I shall briefly mention four methods here.

Cooperative inquiry [29,30] and *collaborative developmental action inquiry* (hereafter, action inquiry – [31,32]) are sophisticated approaches to improvement in organisational and social contexts of the sort familiar to systemists. Both rely on a radical, meta-rational approach to gaining knowledge of the situation – implicit in both of them is the skill and knack for obtaining such knowings⁸. The *Sumedhian process explorations* ([5], pp. 174-184; [33,34]) and *holotropic breathwork* [35,36] approaches make explicit the mechanisms of such ways of knowing (that surpass rational knowing).

In formulating cooperative inquiry in the UK, Heron and Reason have systematically explored the process of deepening knowledge that is achieved through a shared team effort at cycling between action and research. During their investigations, they formulated an extended epistemology underpinning their cooperative inquiry method, going beyond rationalism, which they have named the Four Ways of Knowing, which I discuss in the next section.

A similar path has been trodden by Torbert in developing his action inquiry framework in the US. The process explorations at Sumedhas embrace culturally rooted (for example, yoga, local theatre traditions) and innovative practices (e.g., the use of symbolic and oracular tools such as the I Ching and Tarot cards) to enable inquiring groups ‘to create the space for a visit to the inner world of human existence and phenomena with a view to taking one step closer to the truth’ [34]. The innovative methods at Sumedhas

⁶ My preference for the verb form ‘knowing’, 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. And thus, it sheds the ghosts of rationalism and the classical first-order science approach (including the shadows of neo-colonialism and neo-imperialism), and corresponds better to second-order science and the transmodern approach (see [5] for a detailed discussion).

⁷ DSRP stands for distinctions, systems, relationships and perspectives [14]. Learning to recognise how these four basic patterns (- elements of systemicity -) occur in a situation helps develop a systems understanding. This point is elaborated in the concluding section of this chapter.

⁸Knack – According to Heron and Reason [29], the *knack* is the essence of a skill, the fulcrum on which behaviour is leveraged for practical action, the core of *knowing how*, which cannot be reduced to a *knowing that*: it is basically indescribable in words.

combine Western traditions of knowledge and insights from social science theory and group exploration, with Eastern traditions centred on inquiry and self-discovery, leading to new definitions of man and his reality [34]. Holotropic breathwork is not action research in the usual sense – it is not applied in organisational contexts (as the other three approaches are), but addresses holistic wellbeing and self-exploration in individuals. It works with the body (especially breathing) as a way to access normally barricaded aspects of the unconscious mind. Drawing on his experiences with the study of *non-ordinary states of consciousness*⁹ induced by the drug LSD¹⁰, and experiments while perfecting the holotropic breathwork method, Stanislav Grof has mapped out a new cartography of the human psyche, called *transpersonal psychology, which describes the deeper sources and processes of knowing*. These deeper sources are unavailable to Western rational thinking but are routinely accessed in other traditions of exploration¹¹. I include holotropic breathwork because it is a very significant model with a penetrative understanding of the layers of the mind.

I have briefly described a few action research approaches to make the case that there is learning in their methods and theory, with sophisticated epistemology. The above four are drawn from Asia (process explorations at Sumedhas), Europe (holotropic breathwork), UK (cooperative inquiry), and USA (action inquiry), and their relevance to systems thinking is reflected upon in detail in [5], pp. 160-224. Here, I pick one – cooperative inquiry, to outline its epistemological model.

Cooperative Inquiry and the Four Ways of Knowing

Cooperative inquiry is a participatory research methodology pioneered by John Heron in the late 1960s, richly detailed in Heron, [30] (and also [37,38]; more at [29,39,40]). It is based on an acceptance of the interpenetration of the knower and the known. Their approach is supported with very robust and explicit theory and philosophy, adopting an epistemic position of participatory knowing as advancing towards the truth and a political position that treats human flourishing as intrinsically worthwhile. These positions are carefully developed with several corollary principles backed by much research and detailed case studies provided in the mentioned references.

The epistemological framework from cooperative inquiry is called the *four ways of knowing* [29], and it adds three additional categories of knowing to the rational approach. The output of rational analysis is ‘*propositional*’ knowledge: ideas clothed and expressed in language, representing conceptual categories (be it words, numbers or sketches). The three other forms of knowing are

a) ‘*practical*’ – a knowing ‘how’ – the way one’s fingers know to type or play the piano and one’s body balances itself on a bicycle;

⁹ Grof uses the phrase ‘non-ordinary states of consciousness’ to refer to states of consciousness obtained in such contexts as drug-induced psychedelic states, near-death experiences, memories of past life, trance states related to rites of passage, aboriginal healing ceremonies, spiritual practices, and several other phenomena of historical and cultural significance.

¹⁰ In the years before research on the effects of LSD was banned.

¹¹ The invocation of psychological theory derived from a practice such as holotropic breathwork to reflexive systemic problem-solving may, at first sight, appear far-fetched to conventional systems thinkers. However, it (i) accords well with my systemic ontology and epistemology and (ii) supports the effort to develop a more reflexive systems practice. In [5], I have discussed the close link between holistic healing practices and the deeper sources of human knowing.

b) '*presentational*' – which refers to all forms of creative expression, such as the plastic arts and performing arts; and

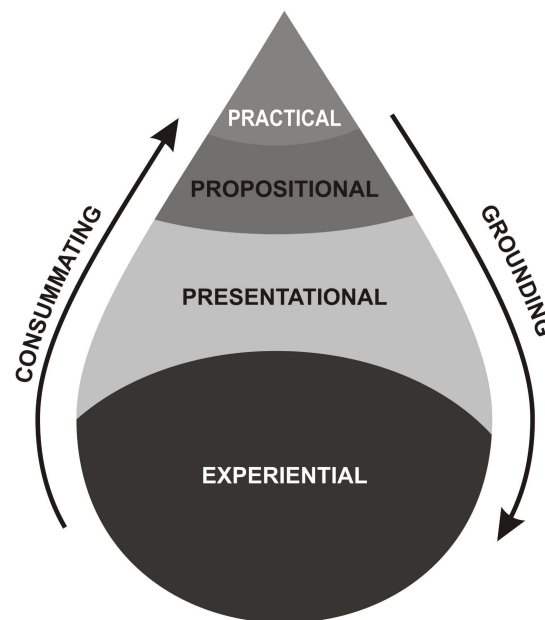
c) '*experiential*' knowing – that impress on our mind in the very moment of encounter: an apprehension or grasp of the world and its elements which we struggle to give form to and clothe later in presentational or propositional outputs.

(Practical knowing, on the other hand, enables us to be and act on the world through our faculties without need for articulation in presentational or propositional terms).

This framework is described in further detail next. To explore how it works, I put myself into a traditional learning situation with an Indian master craftsperson, which I subsequently report, along with a corporate case study. Finally, I end this chapter with some thoughts on how breaching the systemism frontier and incorporating an extended epistemology heralds the next wave of systems thinking – transmodern systems thinking.

The Four Ways of Knowing: Framework for an extended epistemology

The extended epistemology of Heron and Reason [29], later amplified by Seeley and Reason [41], offers a comprehensive understanding as to what might constitute a meta-rational approach. Applying this framework contributes, among other things, in at least two important ways: a) by tapping the knowledge of actors that is not of a propositional or conceptual nature and b) in offering a process to examine the factors or assumptions underlying the subjective understandings of the actors in a given situation.



The four epistemological types of knowing proposed by Heron and Reason [29] are shown in Figure 1. These forms - experiential, presentational, propositional and practical, are basic and interdependent. A brief description follows:

- Experiential knowing is *the direct encounter and its immediate impress or resonance*, unmediated by any conscious mental filtering, evaluation, classification or judgement. In a face-to-face meeting, I experience certain feelings and record the image of the ‘presence of some energy, entity, person, place, process or thing’ [29]. This refers to the automatic, unconscious mental process and not to any deliberative mental processes which occur moments later. This participative, empathic resonance with a thing or being – *wherein as knower I feel both attuned with it and distinct from it* – is experiential knowing. Simultaneously, it is also the creative shaping of a world through the transaction of imaging it, through visual or other sense perceptions [42].

Experiential knowing thus articulates reality through inner resonance with what there is and through perceptually enacting its forms of appearing ([29], pp. 280–281).

- Presentational knowing is *metaphorical expression*, in which the experiential impress often emerges at first. In artistic and aesthetic language, symbols and images, both – (i) our empathic resonance and its *feeling tonalities*, as well as (ii) the *primary meaning of our engagement and the creation or enactment of what appears before us* [42] – take form as an expression, construct or image in space and time and as a metaphor for what we apprehend.

Presentational knowing both 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. ([29], pp. 280-281).

These forms symbolize both our felt attunement with the world and the primary meaning embedded in our enactment of its appearing. There is one overall point about presentational knowledge which is important for our understanding of the world. It reveals the underlying pattern of things. ([29], p. 281; [38], p. 168)

...and I may add, our place and relationship in and with that pattern.

- Propositional knowing is *knowing by description in language*; the output of mental processing, logical reasoning and rational analysis. It is both expressed in and shaped by language – its rules, syntax, ways of naming and describing the world; and its conceptual terms and classificatory systems. It is knowing 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. ([29], p. 281).

This is the kind of knowing produced through the application of most of the extant systems methodologies and the traditional sciences.

- Practical knowing is knowing *how to do something, reflected in a skill or competence*. According to Heron [30], it is primary: it is the culmination of propositional knowing (such as the theoretical principles underlying the practice, and the standards of practice), presentational (demonstrating

elegance and flair in the execution), and the experiential (a groundedness and full appreciation of the context of the act /practice).

[Practical knowing]...fulfils the three prior forms of knowing, brings them to fruition in purposive deeds, and consummates them with its autonomous celebration of excellent accomplishment.

([29], p. 281).

While systemism privileges propositional knowing, according to Heron and Reason [29], the ground of all knowing is experience:

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...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... It is unrestricted experience of the “lived-through world,” which Merleau-Ponty insisted is misrepresented and distorted by the limiting canons of the “objective thought” of positivist science and “dogmatic common sense” (Merleau-Ponty, 1962)

([29], p. 276; text in square brackets added for clarity by author).

Experiential knowing is subjective-objective and thus relative to the knower. It is also relative to the given cosmos – more directly and with lesser mediation than propositional knowing. Thus, experiential knowing is a ground, albeit not an absolute ground, for the symbolic frameworks of conceptual, propositional knowing ([29], p. 278). Propositional knowing can only give mediated — subjective and intersubjective — relativistic accounts.

The participatory paradigm asserts that we cannot have any final or absolute experiential knowing of what there is; in the relation of knowing by encounter, the experiential knower shapes perceptually what is there. ([29], p. 278). Thus, *the key 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 meet 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 mould and to encounter; hence, experiential reality is always subjective-objective ([29], p. 278). This accords with the embodied cognition model put forward by the Santiago school [42,43]. The counterpart aspect of this, called structural coupling by Maturana and Varela [43], is that every encounter also physically reshapes, or rewires, our biological cognitive apparatus¹².

Importantly, Heron and Reason [29] describe practice as consummating the prior forms of knowing and also as being grounded in them. Therefore, *Heron and Reason [29] give primary importance to practical*

¹² For an extensive discussion on cognition (and its limited treatment in applied systems thinking) refer [5]. I believe enactive cognition is one of the three key ontological dimensions of systems thinking; interconnectedness and a pervasive and purposive deeper intelligence underlying sentience are the other two.

*knowing, treating it as of central intrinsic value, whereas most other paradigms only acknowledge propositional knowing as being of intrinsic (or instrumental) value*¹³.

As mentioned, these four ways are interrelated by grounding and consummating relationships – I describe this in what follows. Grounding indicates being established in a solid basis or foundation - something that is concrete or indisputable is "grounded". So, at one end of the spectrum, the experiential form of knowing is grounded –it is, after all, a completely unmediated form of knowing, and has not been selected, filtered, tampered or interpreted by any further cognitive activity. Consummation refers to the fulfilment of a purpose, completion of a cycle, an accomplishment, satisfaction, celebration of excellence. When the three prior forms (experiential, presentational and propositional) result in the fusion of knowings, skills and knack to enable confident action (producing excellence and accomplishment), it is called practical knowing – so this is the consummation, at the other end of the spectrum.

The four ways of knowing need *not* function as discrete modalities, but are *mutually supportive and can come into play simultaneously*. We are usually consciously aware of only one or two of these modes at any single moment in time, due to a limitation in self-understanding that is culturally situated and prevalent in the modern West. On the other hand, traditions such as yoga, certain action research approaches [27] and some communities of practice like the Sumedhas in India [33] specifically promote a conscious increase in simultaneous awareness and the capacity for alignment among the four ways of knowing. They also help to cultivate a conscious deployment, and where required, a synchronous use or cycling flow across the four modes of knowing. On a more widespread basis, the training in arts, crafts and other bodily practices promote an attunement to, and reflective regulation of, the different ways of knowing.

Central to accomplishing such a reflective regulation is the fostering of an ability to attain a temporary suspension between the process of experience and its crystallized content of knowing. All too often, our rational, 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. 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 expressed or depicted magically (Abram, 1996). Such an automatic crystallization appears as an unassailable 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.

In Rajagopalan, 2016 [5], two case studies are reported: In the first, I apprenticed myself as a learner to a master sculptor, and reviewed his teaching methods in the light of the four ways of knowing. I realized that the Master’s traditional pedagogy was purposefully designed to deepen capacities in each of the four ways, engender an ongoing awareness of the deployment or access of these modes, and inculcate the ability to consciously cycle across the four ways or use them simultaneously to deepen holistic understanding. This sort of use of the four ways supports the movement towards a more participative and systemic worldview and creates an enduring foundation for a habitual increase in self-reflexivity. In the

¹³ A solely rational (propositional) philosophy presents many tortuous problems in attempting a more holistic understanding (see, for example, discussions of various philosophical perspectives in [10], 24, 26–30 and 41–105; and [2], 21–28); whereas, the extended epistemology of the Four Ways of Knowing provides a natural basis to attain a critical subjectivity.

second case, I taught the four ways framework to senior corporate trainers as part of a systemic renewal exercise for their organisation. The deployment of this frame supported a deeper and counter-intuitive diagnosis of what ailed the organisation and generated an insightful goal for the organisation renewal.

The Critical Importance of Presentational Knowing

Seeley and Reason [41] have formulated an epistemology of presentational knowing, titled as ‘Expressions of Energy’, in which they examine the learning process in great detail. *They identify the stages in our relationship with reality that could substitute for our commonplace jump from encounter directly to propositional description.* They describe plausible steps for this process involving the progressive interlinked stages of *sensuous encountering, suspending, bodying-forth* and *being in-formed* (– please refer Seeley and Reason, [41] for description of these stages). This way we can shape the inchoate experiential impress into a creative metaphorical expression that articulates the new and unique aspects of the encounter and not merely select what conforms to memories and stored templates retrieved by propositional thinking.

In presentational knowing, a ‘space’ to ‘occupy’ liminal zones in between contradictory or paradoxical perceptions or ideas (‘knowings’) is generated. (For a detailed discussion of five specific paradoxes see [5]). The contradictions can take multiple forms:

- a) what we seem to perceive as opposed to what is expected or “normal”;
- b) what our senses perceive as against the limited range of expectations that inform the situation based on previous memories and stored templates.
- c) between various sense perceptions reporting seemingly different things;
- d) 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 some body part, such as one’s jaw, indicating an emotional undercurrent); and so on.

Practising engagement in conscious liminality through presentational knowing, therefore, involves an existential tension – that of needing to hold, stay with and observe these apparent contradictions. The creative resolution of contradictions facilitates the move to a more comprehensive view.

In the same way, aware deployment of all the four modes generates a capacity to understand the interpenetrative, co-implicative, paradoxical, yin-yang entanglements in the systemic reality of the world in a way that propositional knowing cannot yield. For, in the world of propositions and concepts, these entanglements and paradoxes will run counter to logical, rational models of the world.

“Knowing Differently”: Methods for an Extended Epistemology

The extensive application of the four ways of knowing framework in several intervention settings is documented in Liamputtong and Rumbold [44]. This collection of case studies describes innovative methods and approaches signifying the growing body of work reflecting the ‘reflexive turn’ in methodology. The editors refer to these methods collectively as ‘arts-based and collaborative methods’.

Of key significance is that several case studies demonstrate how these methods effectively address ‘cultures of silence’ surrounding oppressed, marginalized and derogated social groups [45]. As Liamputtong and Rumbold, [44] report, these new methods;

- access experiential, practical and presentational learning;
- are suitable for non-literate participants;
- provide a rich way to blur the researcher/practitioner boundary; and
- enhance the potential for ethical relationships and social change.

The future of systems thinking is transmodern

In the preceding sections, we have examined how current approaches to systems thinking are limited by rationalism and considered the usefulness of meta rational ways of knowing. Meta rational ways are routinely accessed in certain other approaches and we saw that they can instil metacognitive habits and attitudes which enable a more comprehensive and systemic understanding.

This is accomplished, among other reasons, because meta rational ways of knowing cover the entire spectrum of unconscious and conscious mental activity – from pre-cognitive impressions (experiential knowing) to artistic knowing (presentational knowing), highly abstract conceptualization (propositional knowing) and accomplished activity or craft (practical knowing). Elsewhere, I have described in detail how the entangled, enactive and systemic nature of the world cannot be grasped by the rational mind because it will inherently throw up paradoxes and seemingly, logically, contradictory images which cannot be resolved rationally. However, this whole perspective can be grasped through the experiential and presentational ways of knowing [5].

The cultivation of effective systems thinking demands more than a conceptual knowledge of systems or systems methods – it requires the practitioner to assume a specific mindful orientation that recognizes elements of systemicity in a situation. This we refer to as the metacognitive stance (– a sort of critical systemicity, if we were to parallel the idea of critical subjectivity in cooperative inquiry). Developing this metacognitive stance is a knack – among other things, it involves some preliminary cognitive effort at pattern recognition¹⁴. It describes one sort of activity in the realm of presentational knowing with some overlap with propositional knowing. When this is sufficiently practised to become a knack, then we can describe it as a form of practical knowing in the hands of an accomplished practitioner. When such a practitioner can adequately reflect on his/her mental processes to describe the elements or steps towards acquiring that knack, with a set of conceptual markers (– which also supports, along with sheer practice, its transmission to a community of practitioners) it becomes a craft [46].

Cabrera, Cabrera and Powers [14] posit four cognitive patterns as universal to systems thinking. In teaching their model, called DSRP (stands for distinctions-systems-relationships-perspectives), they point to its metacognitive potential (the capacity to be aware of one’s thinking and emotions as they emerge). They note its ability to:

¹⁴ In the DSRP framework, for example, the kinds of pattern recognition involved in the metacognitive stance are postulated by Cabrera, Cabrera and Powers [14] as distinctions, systems, relationships and perspectives (thus the abbreviation DSRP). This is described in the next paragraph.

- engender a shift to seeing co-implicatedness rather than polarities/binaries;
- see fractal nesting of systems;
- appreciate the systemic nature of the ‘other’ (excluded, disfavoured person, group or thing) and thereby appreciate its similarity to ourselves; and
- awaken to the co-implication of our emotional and cognitive selves in our processes of meaning-making (and I would add sense-making).

By describing DSRP and its applications, and similarly with Cooperative Inquiry, the Sumedhian Approach, Viable Systems Modeling, or Systemic Intervention (all complete with theory, techniques and tools, applications and documented case studies), the respective authors have created such craft. Intervention practitioners encountering the challenges of complex human systems would do well to invest in acquiring craft skills for systemic practice by learning approaches such as cooperative inquiry, human process inquiry, action inquiry, or DSRP briefly covered in this chapter. They can also benefit tremendously by mastering and harnessing practices that tap meta rational ways of knowing, including arts-based research, or any of the plastic or performing arts and crafts. Systemists can also innovate their approach to systemic practice by developing mastery in yoga, mindfulness, NLP, and/or neurofeedback, etc. All of these practices will help practitioners develop the skills to reflect on the interplay of the four ways of knowing in their various activities.

Recently, the idea of *transmodernity* [47], garners evidence from a wide diversity of disciplines to show that many young scientists and thinkers are usefully and carefully experimenting with the complementary use of other traditions of knowing alongside classical scientific methods – approaches that are effectively meta-rational¹⁵, to improve the penetrative power, reach, and comprehensiveness of their inquiries.

As more systems thinkers embrace a variety of body and mind awareness practices (including yoga, mindfulness, the creative and performing arts, holistic healing, etc.) – and combine these orientations to meta rational knowing with their current systems skills (through deploying practices like cooperative inquiry and frameworks like the four ways or DSRP) – a new wave of systems thinking shall emerge that will be transmodern in nature. This is extremely critical to solve the VUCA and Anthropocene¹⁶ challenges we face today. Just as the entire positive psychology movement has been birthed by the fusion of Buddhist theory and practices regarding consciousness with modern Western psychology; or international expertise uncovers the scientific value of traditional and indigenous wisdom regarding food, water or forests; systemists need to know the *why* and *how* about harnessing multiple forms of knowing. My understanding of the critical value of such knowings to solving the vexing problems spawned by modernity was incubated in my work with artisanal fishermen, indigenous tribes, handicraft artisans and schizophrenics in India [8].

In Rajagopalan, 2016, I have described how my knowings from working with these communities, and my acquaintance with the practices from theatre, yoga, mindfulness and holistic healing, inform my work. Based on this reflection and inquiry, I construct a plausible new systemic ontoepistemology named *Immersive Systemic Knowing*. This model is assembled after a comprehensive evaluation of systems

¹⁵ Although Ateljevic does not use the term meta-rational, a study of her examples will show that this is the case.

¹⁶ VUCA stands for volatile, unstable, complex and ambiguous – a characterization of certain problems afflicting the environment in which people and organizations have to function today. The ‘anthropocene’ is a proposed name for the current geological epoch: the proposal seeks to recognize the severe nature of the effect humankind has had on the ecology and geology, including the climate crisis.

thinking using three key conceptual frames – the idea of *reflexivity* from second-order science¹⁷, the idea of *teleonomy*¹⁸ from evolutionary thinking, and my theorizing [5] regarding *two modes of consciousness*: While modern Western philosophy equates consciousness with intentionality [53], I argue that there is another well-recognised mode of consciousness – that of non-intentionality. I term these two modes: ‘striving’ and ‘abiding’.

Immersive Systemic Knowing also offers a characterization of the systemic ontology in terms of three basic features (stating key aspects of the nature of the world from a systemic perspective), which is missing in the literature so far¹⁹. This paves open one direction to overcome the limitations of systems thinking and advance its future development.

A critical requirement today is for spawning multiple spaces where artists, arts-based researchers, the performing and healing arts can mingle with, encounter and interact with systems thinking practitioners. The European School of Governance, a recently revived think tank at Berlin, is attempting precisely this. Another sterling experiment is to be found in the Sumedhas Academy in India, who have developed their unique approach to inquiry into human processes. Here, the cliniquing sessions among facilitators that follow the group work, eschew reflective observation, commentary or abstract dialogue; instead, they continue the framework from the groups – of offering here and now data, or testimony, from the facilitators’ feelings and thoughts, as a way of building an awareness of the unfolding processes and insights. This promotes the fundamental capacity for accessing the ‘abiding’ mode of consciousness. Unless this capacity is cultivated among facilitators of systemic practice, we cannot escape systemicity and its inherent inability to overcome the Anthropocene challenge. This conscious harnessing of the abiding mode *is* the key, the *kernel of the knack of meta rational knowing*, wherever it is to be found. Extending the systemic epistemology through the tapping of meta-rational ways of knowing makes another fundamental contribution to systemic knowing: the harnessing of anticipatory awareness [61] – the creative ability to proactively anticipate and shape our future, which again is extremely critical to handle the current VUCA and Anthropocene challenges.

¹⁷ *Reflexivity* refers to the capacity for self-awareness in the observer during the act of observing; I have elaborated and built upon the concept of reflexivity with ideas from [48] and [49]. First-order science explores the world; *second-order science* reflects on these explorations, with second-order observations focusing on self-referential elements [50,51].

¹⁸ Teleonomy refers to the principle of goal-seeking (formulating and moving towards goals) that sentient systems display; this is a term coined by Mayr in 1974 [52].

¹⁹ See footnote 12 above. There is one exception: I have commented on DSRP briefly in this regard. There are a limited number of other efforts to look at the ontological and epistemological aspects of a systemic worldview. I would list [10,53–60] for the interested reader.

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