Chapter 7
Epilogue: Systems Approaches and Systems Practice

Martin Reynolds and Sue Holwell

Abstract Each of the five systems approaches discussed in this volume: system dynamics (SD), the viable systems model (VSM), strategic options development and analysis (SODA), soft systems methodology (SSM) and critical systems heuristics (CSH) has a pedigree. Not in the sense of the sometimes absurd spectacle of animals paraded at dog shows. Rather, their pedigree derives from their systems foundations, their capacity to evolve and their flexibility in use. None of the five approaches has developed out of use in restricted and controlled contexts of *either* low *or* high levels of complicatedness. Neither has any one of them evolved as a consequence of being applied only to situations with *either* presumed stakeholder agreement on purpose, *or* courteous disagreement amongst stakeholders, *or* stakeholder coercion. The compilation is not a celebration of abstract 'methodologies', but of theoretically robust approaches that have a genuine pedigree in practice.

7.1 Reflections: Thinking about Practice

The compilation of the five systems approaches discussed in this volume – system dynamics (SD), the viable systems model (VSM), strategic options development and analysis (SODA), soft systems methodology (SSM) and critical systems heuristics (CSH) – is not a celebration of abstract 'methodologies', but of theoretically robust approaches that have a genuine pedigree in practice.[1] Their pedigree derives

[1] The term 'methodology' is often used interchangeably with a 'methodological approach'. Following Ison (2017 p. 167), methodology "involves the conscious braiding together of theory and practice in a given situation…it is thus a context specific enactment". This chapter uses the term 'methodological approach' to denote any 'systems approach'; that is a formalised set of methods/ tools/techniques associated with a particular tradition of systems practice, all of which can be

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from their systems foundations; their capacity to evolve and their flexibility through a variety in contexts of use. There are three levels of rich practice enabling these five systems approaches to retain flexibility and continual development: firstly, the interaction amongst those sharing an enthusiasm for one particular approach; secondly, the interaction between practitioners from different communities of systems approaches; and thirdly the rich interaction between Systems and other communities of practice associated with different professions. All five approaches deal with inter-relationships, multiple perspectives and boundary judgements, but always with regard to the context of use – 'the way of the world'.

7.1.1 Taking Stock: Concepts and Purposeful Practice

This is a useful point at which to consolidate some of the core commonalities shared by the five approaches described in the preceding chapters. Firstly, and most importantly, they all are ways of dealing with complex situations and issues. Secondly, they are all rooted in the fundamental systems concepts of *emergence* (the property of a 'whole' that arises from the interaction of the parts and is more than the 'sum of the parts'); *hierarchy* (layers and/or levels); *communication* (the exchange of data, information, resources within the boundary as well as the development of mutual understandings and the power that genuine listening can offer); and finally *control* (the corrective actions necessary for long term survival). In Checkland's basic system metaphor, "of an adaptive whole, surviving over time in a changing environment," these fundamental notions are essential (Checkland 1981).

An essential corollary of the 'system' metaphor is that of inter-relationships, multiple perspectives and boundary judgements – the three generalized purposeful orientations behind any systems approach. Again, it is evident that all five approaches take connections and relationships seriously, although their focus of attention may be on different forms or kinds of connection and relationship. The drawing of a boundary, a demarcation between what is included and what is excluded is explicit and unavoidable in all systems practice; although the degree of attention given to this varies between the five approaches. This crucial point in any systems work – making the judgement about boundary – is discussed more fully shortly. Clearly, the fundamental systems concepts and the three 'purposeful orientations' are manifest in each of the approaches but in different ways and with different emphases.

Moreover, each of the approaches included here is the result of the cumulative experience of a community of practitioners that comprises people from many different professional backgrounds: some of whom, but not all, call themselves 'systems practitioners'. The practitioners who have contributed to this development work in

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adapted by the particular user(s) in a given situation to develop a context-specific methodology. Whilst the editors are conscious of the more looser usage of the term 'methodology' in this publication, and within some of the illustrations used in this chapter, a distinction of context-specificity for 'methodology' is considered important for developing systems thinking in practice capabilities.

many different fields and domains. The experienced complexity of the real situations through which the approaches have developed derives from there being both interrelatedness and interdependencies to deal with, and with there being many views on what 'improvement' could/should look like. Not surprisingly, through practice some now have recognizable variant forms; and in some instances, such as VSM and SD, there are distinct 'schools of approach'. For this book, practice has been given precedence although we acknowledge that some readers might have preferred a much closer adherence to theoretical definitions in some instances. We also acknowledge that all perspectives on use of all approaches have not been included. But our focus on practice, drawing on the reflections and experience of long-standing practitioners, provides a unique strength of perspective and portrayal of each approach.

7.1.2 Flexibility and Ongoing Development

The accounts of the approaches here, in general, bear little resemblance to the first expositions of the approach (see for example, the SSM account by Checkland in this volume and compare that to the first SSM paper published in 1972). As mentioned in the Introduction, similar evolutionary modifications are applicable to all five approaches. The ongoing development of each approach is a function of the variety in contexts of use. A contemporary list of application areas where SD is used – from modeling defence systems to use for fostering group dynamics – illustrates David Lane's point that System Dynamics is an approach that provides space for different contexts of use (Lane 2000). Whilst VSM is primarily used for organisational management, Patrick Hoverstadt in Chap. 3 makes an important wider distinction: "I've talked about VSM in terms of an organisational model to look at "human activity" and the emphasis has been on formalised systems that the casual observer would recognise as entities in the real world – companies, hospitals, charities that sort of thing. But of course, VSM isn't just a model of organisations it's a model of *organisation* and as such is useful in other domains."

Both SODA with cognitive mapping, and SSM belong to a group of approaches that are frequently regarded as problem structuring methods (Rosenhead and Mingers 2001). They each have a rich historic tradition of being helpful in structuring problems in different domains (as against the more rigid exercise of solving problems, which tends to be more domain specific). In common with SD, SSM also emerged from another discipline – that of Systems Engineering. Peter Checkland found, when he and his colleagues tried to apply Systems Engineering to 'messy management' problems, that it failed. First, the learning from experiences that gave rise to SSM can be encapsulated in the key ideas of treating purposeful activity as a systems concept, and acknowledging that any purposeful activity is only meaningful when a worldview is declared. In other words, purposeful activity only makes sense when the view that frames the 'purpose' for the activity is understood and made explicit. Second, the models used in SSM were of

concepts relevant to thinking about the problematic situation, and explicitly were not models of anything in the situation to be engineered. This 'shift of systemicity' from the world to thinking about the world, for Checkland differentiates 'hard systems approaches' from soft systems approaches. The third key thought that separated Systems Engineering from SSM was the realization that the 'intervention process' was organized as a learning system, a means of learning the way to what would count as an 'improvement'.

Finally, CSH shares some of its ancestry with SSM. It emerged directly from the ethical systems tradition and the works of C. West Churchman. Churchman himself began professional work as a systems engineer but was increasingly involved with applying systems ideas to wider ethical issues, ending his career with a professorship in peace and conflict studies at the University of Berkley, California. Werner Ulrich's work in developing CSH as a means of supporting reflective practice in all professional domains including social planning and environmental design was firmly rooted in this tradition.

7.1.3 Characteristics: Shared and Distinct

Moving beyond the common systems origins, the five approaches also share other characteristics, particularly at the more abstract level. All five assume that complex situations and messes cannot be resolved or improved without engaging in a process that is cyclic and iterative; recognizing that changes in perspective and level (in the hierarchy sense) reveal new insights that require revisiting earlier findings. This point is explicitly made, for example by Morecroft and Checkland, but is equally the case for all five.

The contributing authors are very clear that real improvements can only come when the richest understanding of the situation as a whole is achieved; that treating a situation such as the Somalia pirate 'problem' simply as a problem of bad people being pirates will only result in the on-going need for more fire-fighting at best, but will not improve the situation overall. This is reflected in the precise use of the language of 'situation' and not 'problem'; of 'improvement' and not 'resolution' or 'fix'. Simon Caulkin's comment in *The Observer* newspaper on the banking sector early in 2009 laments the prevailing fashion that in both its view and language is diametrically opposed to the approaches examined in this Reader:

> Ever in thrall to economics, today's management has faithfully reflected this.… Managers have grown – and been taught – to eschew messy reality in favour of managing by computer model and target.… Indeed, increasingly they don't know how to manage forward from reality rather than backward from the numbers. Thus the besetting sin of mistaking the map for the territory, the scorecard for the game, the representation for reality. Seize the chance to make banking dull again. (Simon Caulkin, management editor The Observer, Sunday 19 April, 2009)

The use of models and diagrams is integral to all five approaches. Crucially, all five regard the models as being 'conceptual constructs' and not representations of (or part of) reality in the way that in the UK we expect an ordnance survey map to be.

All five approaches regard the use of models and diagrams as a means to facilitate *learning,* and not as ends in themselves.

However, even a cursory reading will reveal that at the more detailed level there are very distinct differences between the approaches. Clearly the content and appearance of the models and diagrams is very different: the straight lines and boxes in VSM, contrast with the curves of a cognitive map, and the 'clouds' in an SSM activity model. And while all of the models make clear the connections between the various elements, the nature of the connections varies considerably from variety equations in VSM, from influence of one variable on another in SD, and contingency in SSM. The entities being modeled are also quite different, for example, entities in SD, processes in VSM, issues and options in SODA, activities in SSM, and sources of influence in CSH.

The book chapters are descriptions or accounts of the different approaches, but they are no more than that and their use in practice is never as clean and tidy as a concise description might suggest.

The success of any systems approach discussed in these pages is ultimately dependent on the user of the approach in some context or setting. An approach of itself cannot guarantee, or even determine success. So whilst we may discuss different approaches in their abstract sense, any claims towards their value in improving or making change in a situation are dependent on several things: the context of use; the practitioner's purpose, skill and insights, and the level and quality of participation of those engaged in the problem situation itself. Indeed as Checkland describes see Sect. 5.1.3 and Fig. 5.3 in the LUMAS diagram (Learner, User of methodology, Methodology, Actual approach adopted, real-world problem Situation) there is an ongoing definition and re-definition between the ideas, the situation and the practitioner for every approach in the hands of a skilled (or just knowledgeable) practitioner. Indeed this aspect, which one might term improvisation, is true of any approach to dealing with human situations. Donald Schön writes explicitly about the role of improvisation in professional practice:

> … Schön, who stresses reflection in the midst of action … frequently used jazz as an image of reflection-in-action: the process of improvisation in the moment based on a response to the situation (what other musicians are playing, the audience's response etc), to the established rhythm and melody of the piece, and also on one's own abilities and enthusiasms. (Ramage and Shipp 2009 [2020] p. 292)

The notion of improvisation is helpful in grasping some of the nuances of a good systems approach. But how might we understand this process more in order to help nurture and ensure future flexibility and development in systems approaches and still retain theoretical rigour? Two ideas in the wider systems tradition may help us. First, there is the widespread understanding of the tension between *practice and theory* expressed by practitioners like Donald Schön and others more specifically concerned with systems modeling (Pidd 2004). Second, there is the notion of *entrapment* in our ways of thinking and practice that is of interest to many systems practitioners including the authors in this compilation. We can briefly examine both.

7.2 Practice and the Skilled Practitioner

The notion of 'practice', and therefore 'practitioner' is somewhat slippery. Schön's writings on reflective practice may already be familiar. Writing on the 'crises-of-confidence' professionals were experiencing in the 1980s Schön argues that the process of 'reflection-in-action' by professionals is underpinned by four constants that only change relatively slowly. They are "the reliably solid references from which, in reflection-in-action, he [the professional] can allow his theories and frames to come apart" (Schön 1984, p. 270).

These constants are the:

1. Language, media and repertoires used to describe 'reality' and to conduct 'experiments'
2. Appreciative settings brought to the problem setting, to the evaluation of inquiry and to reflective conversation
3. Overarching theories by which sense is made of the phenomena
4. Role frames within which tasks are set and through which institutional settings are bound

A satisfactory account of the phenomena in the practice situation is not achieved until it is framed in terms of the overarching theory, and a cumulative repertoire of exemplars, facts and descriptions can be built against the institutional settings (Schön 1984, pp. 273–274).

A skilled practitioner is one who continually keeps alive the tension between practice and theory. This ongoing tension can be understood on different levels. At an individual level, our personal reflection-in-action continues all the time both consciously and sub-consciously. Past practices and experiences inform the way we think about things and the way that we think obviously influences practice. Beyond the individual level – what might be called 'practitioner community' levels – the dynamics of theory and practice become more intricate and three different levels are helpful. Our colleague, Karen Shipp, designed the three influence diagrams below to help illustrate these three levels of rich dialogue enabling systems approaches to retain flexibility and continual development.

7.2.1 Level 1 Interaction Within a Practitioner Community Associated with a Particular Methodological Approach

Figure 7.1 illustrates the dynamics of interaction amongst a practitioner community such as, for example, VSM practitioners or SODA practitioners. The practitioners share an underlying methodological approach.

This diagram shows the traditional cycle of learning from the interaction of theory and practice within the practitioner community associated with a particular methodological approach. When a practitioner makes an intervention in a problem situation, the methodology guides the nature of the intervention, and the situation

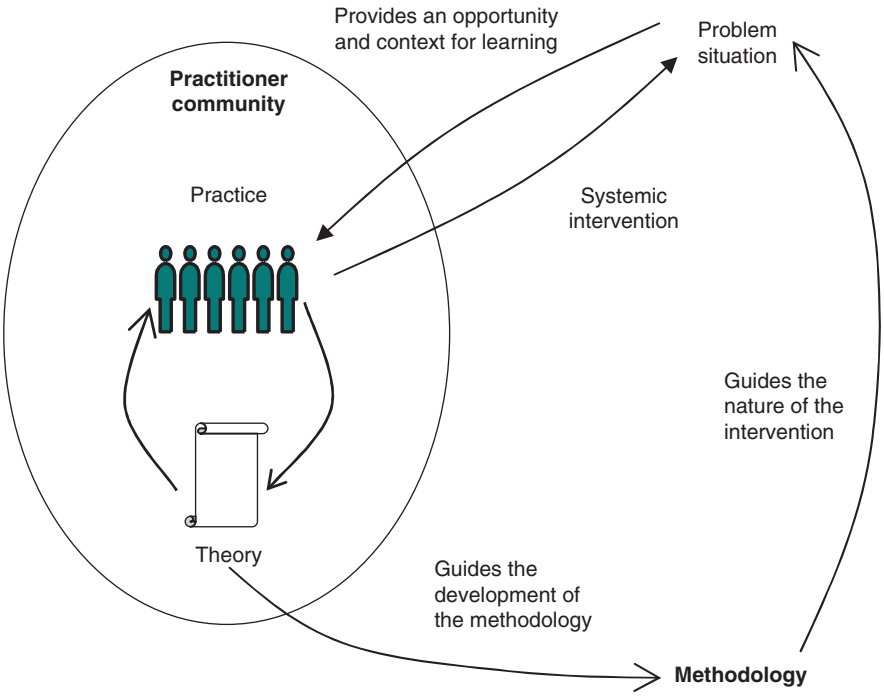

Fig. 7.1 Influence diagram illustrating the interplay between problem-situation, methodological approach ('methodology') and practitioner-community in the development of a methodological approach over time associated with a particular (systems) approach to intervention

provides the opportunity and context for the practitioner to learn from the experience. This learning influences the development of theory within the community, which in turn influences the development of the methodological approach itself.

7.2.2 Level 2 Interaction Within the Wider Systems Community

The next diagram is up a level from Fig. 7.1 and illustrates two of the mechanisms by which methodological approaches develop as a result of learning transfer between *different* practitioner communities; say between SD practitioners, SSM practitioners and SODA practitioners.

Figure 7.2 shows three practitioner communities (PC1, PC2, PC3) for methodologies 1, 2, and 3. The overlapping circles of the practitioner communities illustrate that individuals can, and do, belong to more than one practitioner community, perhaps practicing more than one approach. This co-membership is one mechanism by which different methodological approaches can, and do influence the development of others, in the interplay of practice and theory within the practitioner community.

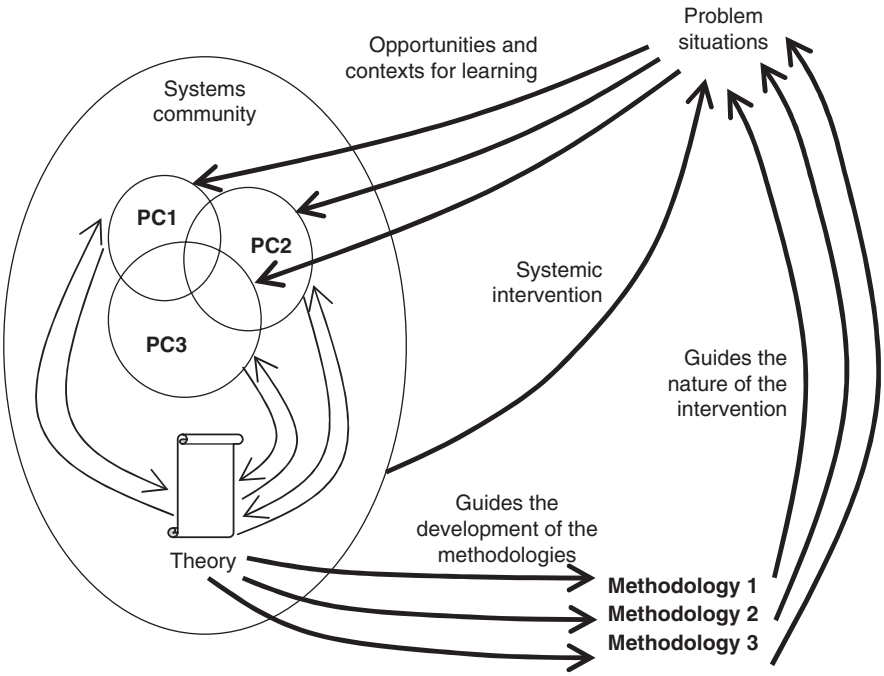

Fig. 7.2 Influence diagram illustrating two mechanisms by which methodological approaches ('methodologies') develop as a result of learning transfer between different practitioner communities belonging to a shared family of approaches (e.g., systems approaches)

The interaction between theory and practice is shown here between each practitioner community and an *external* body of theory, acknowledging that published theory is often read widely amongst a broad systems community (as well as in more specialist community publications). This illustrates a second mechanism by which the development of a methodological approach is likely to be influenced by *other* methodological approaches.

7.2.3 Level 3 Interaction Between Systems and Other Communities of Practice

Finally, there is an even wider influence on systems approaches. This involves the influence of practicing professionals and non-professional groupings – teachers, health workers, managers, planners, evaluators, public and private sector administrators, etc. that may or may not have any formalized 'methodical' traditions. Whether they have recognized formal methodological approaches or not, such groups and individuals have considerable influence on the way in which practitioner communities develop their skills (Fig. 7.3).

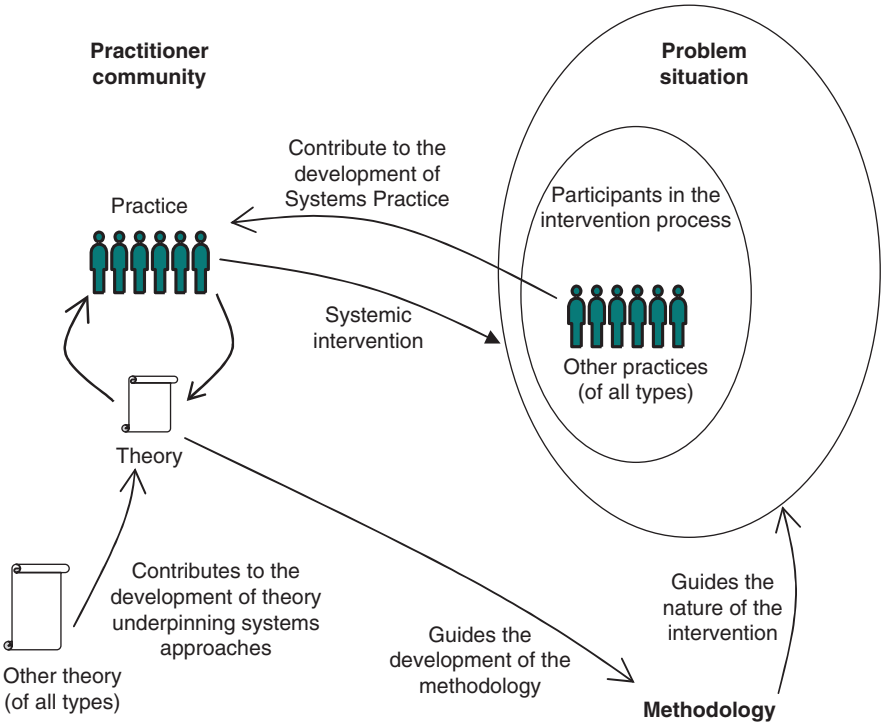

Fig. 7.3 Influence diagram illustrating how other types of professional practice and other fields of academic theory can contribute to the development of a 'methodology' associated with a systems approach

Figure 7.3 shows two routes by which a systems 'methodology' can evolve as a result of influences from outside the systems community. When the practitioner community connected with a particular methodological approach is engaged in the continual cycle of learning from the interplay of theory and practice, the thinking and experiences of members cannot help but be drawn into this learning cycle. In particular, other ways of thinking and seeing – whether drawn in from conversation, everyday media or deeper reading – will influence the development of theory; while the close engagement with participants of all kinds – from their different professions, roles and fields of endeavor – when working in the field, will broaden and perhaps challenge the repertoire of practice that the practitioner has to draw on. The message to be taken for practitioners from the account of the five approaches given here is to avoid seeking some methodological purism in testing out any one systems approach, but rather to explore its validity and adaptation in conjunction with other approaches familiar to the user.

A particular feature of the five systems approaches discussed in these pages are the sought-after working relationships and dialogues with such communities and individuals. Such interactions enhance not only the practice but also serve to

strengthen the theoretical underpinning associated with each methodological approach. They also serve to protect against the risk of becoming trapped in 'group-think' that can be a feature of long-standing communities.

7.2.4 Recognising the Possibility of Entrapment

A particularly helpful way of envisioning traps is through the practice of boundary critique (Ulrich 2000) described more fully in the CSH chapter. Making judgements is always central to practice. This is especially so for systems practice where the explicit drawing of boundaries is an integral part of the practice. But it is also important because practice of the systems approaches in this compilation involves understanding that the 'world' is not a given; it is not a once-and-for-all, unambiguous object. Systems approaches here recognise that there are unlikely to be single, and universally accepted solutions to the issues that engage people's attention.

Figure 7.4 illustrates not only the necessity for making judgements, of at least three different kinds, but reminds us that each kind of judgement affects other judgements in a never-ending cycle.

Similar ideas have been expressed in somewhat 'classical' prose by Geoffery Vickers (1987). In his description of an appreciative system: "… [It] seems to me to carry with those linked connotations of *interest*, *discrimination* and *valuation* which we bring to the exercise of judgement and which tacitly determine *what* we shall notice [judgements of fact], *how* we shall discriminate situations from the general confusion of ongoing events [boundary judgements] and how we shall *regard* them [value judgements]" (Vickers 1987, pp. 98–99; My italics). There is a resonance also with the 'triadicity' (between fact, value, and boundary judgements) in Charles Peirce's nineteenth century semiotics and theory of representation (objects being represented, those who make representation, and actual representations (Peirce 1878) and Habermas' three worlds (*the* natural world, *our* social world, and *my* internal world (Habermas 1984). There is also resonance with Peter Checkland's LUMAS model (Learning for a User by a Methodology-informed Approach to a problem Situation) distinguishing between 'methodology as words on paper' – *boundary judgements* –, the 'user of methodology' – *value judgements* –, and 'the

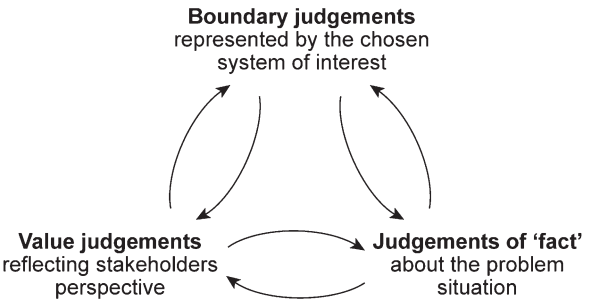

Fig. 7.4 Dynamics of systems thinking. (Adapted from Ulrich 2000; Reynolds 2008a, 2014 (Fig. 3))

situation addressed' – *judgements of* '*fact*' (see Sect. 6.6.1). Thus Vickers, Checkland and Ulrich in different ways highlight the need to continually question and review judgements, not least on systems boundaries during the course of any intervention.

Importantly, systems boundaries – that is, boundary judgements (whether in terms of models, methodologies, approaches, organisational practices etc.) – must never be allowed privilege to remain independent of changes in the context of use (judgements of 'fact') and the users themselves (value judgements).

Systems are of course abstractions – ways of framing – and the act of framing itself requires making judgements, especially boundary judgements. Different systems approaches can be considered as frameworks (Reynolds 2008a, b) in the sense that, as the name implies, *framework* has two interrelated parts; one, a cognitive or conceptual device – a *frame* of reference which, two, enables *work* through systems (plans, projects, programmes, etc.). Figure 7.5 is a development of Fig. 1.4 in the introductory chapter to illustrate the dynamics of change in the development of systems approaches.

From Figs. 7.4 and 7.5, we are reminded that there is an imperative to continually ask questions of 'systems'; to appreciate them as *judgements* of fact rather than *matters* of fact. For example, when confronted with arguments of an iniquitous 'economic system' generating continual social and ecological impoverishment, or an 'education system' that systematically continues to marginalise particular sectors of our community, as systems thinking practitioners we have an opportunity (some would say a responsibility) to create space for, and help support the framing of, better 'economic and education systems', rather than continuing as if they are given

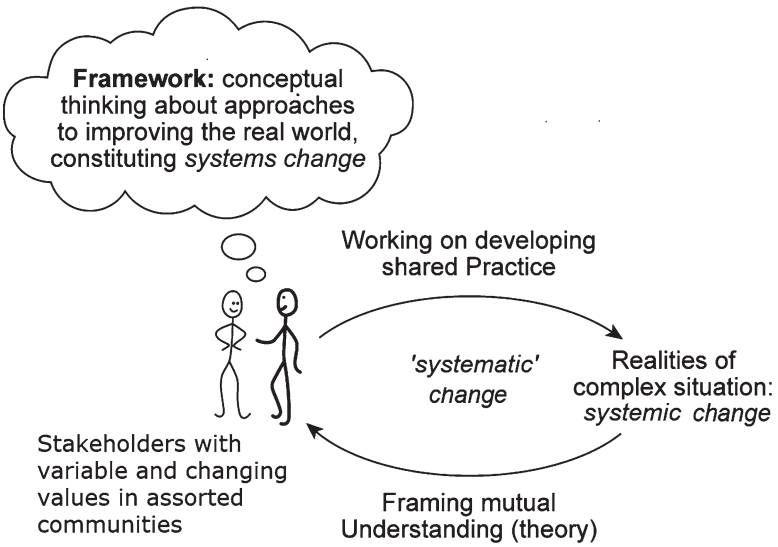

Fig. 7.5 Framing and systems change, systematic change and systemic change. (Adapted from Reynolds 2008a and Reynolds 2016)

realities that we simply have to live with. The potential idea of 'systems' as conceptual tools of oppression rather than conceptual tools for liberation is captured in a familiar quote:

> To a man with a hammer, everything looks like a nail.

In the introductory chapter we talked of traps in conventional thinking, but are there also potential traps in our systems thinking? We previously identified two traps of conventional thinking – reductionism and dogmatism. We ought to acknowledge the second side of this coin now, and ask what it would mean to think of systems thinking as being subject to the risk of the two traps of holism and pluralism. How might these also become – in some situations or on some occasions – limitations rather than enhancements to our thinking? Could it be something akin to 'systems fixation' or even a 'fetishisation of systems'? There is always the potential of becoming too attached to our systems – whether these be conceptualized as rigidly bounded systems or indeed less overtly bounded systems approaches – they are only conceptualizations that help us on our way – they are not the (or even an) answer in themselves (Reynolds 2011).

7.3 Context Always Matters: The 'Way of the World'

Let us finally return to the nature of the complex situations to which systems approaches generally make a claim towards improving. In the introduction we chose three stories prevalent in the UK during Easter 2009 to illustrate contrasting senses of complexity (the 'way of the world') with which systems approaches might be of help: the remembrance of tragic events at Hillsborough in 1989, the continuing piracy off Somalia, and the discovery of relatively large numbers Orangutans – an endangered species – in Indonesia.

By way of review we will finish by re-visiting the media stories used in the Introduction to contextualize the relevance of these five approaches, but this time by reference to each story and the five approaches. This is intended to be illustrative only, and is not an exhaustive mapping of any one approach against a story.

System Dynamics, for example, might be used to examine the consequences of different configurations of the physical layout of a football stadium (the flow of patrons into and out of regions of the stadium under different conditions, in order to assess the risk of overcrowding, or speed of evacuation). It might be used to examine, say, the economic consequences of piracy in a particular geographically bounded region. Or it might be used to examine the dynamics of the interconnections between orangutang population size, the population of other predator or predated species, and human encroachment into the habitat. The VSM could be used to explore the organizational arrangements and governance for a football event from intelligence gathering to the operations necessary to accept tickets and seat patrons.

VSM could provide insight to actual hierarchical relationships in the organisation of piracy. Or it might be used to model future design of species protection schemes. Cognitive mapping (from SODA) might be used with the police leaders who had been involved at Hillsborough to examine the thinking which lay behind some examples of faulty decision-making, perhaps for training purposes. This could be extended to reveal patterns of thinking prevalent in one stakeholder group (say football ground officials) to members of another stakeholder group (say victims' families) in order to facilitate understanding and thus a movement towards greater eventual peace of mind. SODA might be used to develop a strategy for protecting international waters from piracy, or the policing of illegal logging in Indonesia. SSM has already been used to think about Hillsborough (see Lea et al. 1998). It could be used to think about improvements for the Somalia piracy using relevant models such as 'a system to improve living standards in Somalia', a 'system to reward pirates for safe escort of ships', a 'system to create new jobs'. Similarly, SSM models relevant to the protection of Orangutans could include – 'a system to provide ecotourist travels', or on a deeper learning level, a 'system to protect against the diminishment of biodiversity' or a 'system to promote a natural resource based economy in Indonesia and so on. Finally, the use of CSH could help in revealing the details and consequence of reference systems that perceive football supporters as 'hooligans'. CSH might be used as a discursive tool to enable meaningful conversation between those stakeholders involved with perpetuating sea piracy and those stakeholders affected by sea piracy. Similarly, CSH could be used to map out the different reference systems associated with the conservation of Indonesian forests, with a view to identifying contrasting stakeholders and collective stakeholdings around sources of motivation and values, control and the leverage of power, knowledge and 'expertise'; as well as sources of legitimacy in appreciating the moral consequences of conservation and non-conservation.

This superficial sketch of the approaches against the media stories only serves to illustrate the applicability of all of them to situations of different kinds. It does not say anything about situation of type A is suitable for approach X, and that situation type B is not suitable for approach X. In the hands of a skilful practitioner each of these approaches will give useful insights to any situation. In our view, a *systems thinking practitioner* applying craft skills of *systems thinking in practic*e qualifies as an artisan; a skilled creative practitioner able to make purposeful change for the better.

In conclusion we provide space for two other voices. First, our colleague, Robin Asby, describes the relevance of systems approaches in today's world:

> Too often, today's problems are solved by utilizing easy and comfortable approaches to obtain simple solutions. In reality as many discover, simplicity and common sense approaches are far from effective in dealing with complex, dynamic and diverse problems. Despite the initial apparent ease and comfort that this brings, focus tends to be on the elements of the perceived problem, rather than the 'bigger picture'. Typically there is no consideration of interactions, nor questioning the belief that there is one best solution, often falling into the trap of thinking that it has to be 'this' or 'that' missing the possibility that both are possible. As more and more program failures escalate there is a growing need to improve and create better results through systems thinking.

> Systems thinking in practice is an approach of seeing the "whole" through a critical lens, recognizing patterns and interrelationships, appreciating and taking into account other perspectives, and learning how to structure more effective, efficient and creative systems." (Asby 2020)[2]

Second, in relation to the artisanal skills of a systems thinking practitioner, Mary Catherine Bateson, reminds us of the 'way of the world' to which systems approaches covered in this compilation continue to serve as a continually creative endeavour:

> It's confusing, but we have a right to be confused. Perhaps even a need. The trick is to enjoy it: to savor complexity and resist the easy answers; to let diversity flower into creativity. (M.C. Bateson 2004, "Afterword: To Wander and Wonder", p. 410)

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[2] Adapted from 1st edition citation "Robin Asby, 2009, personal communication" and to be published as part of Conclusion in Robin's 2020 book *Thinking Systems; an organic language for survival*.

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