CRITICAL SYSTEMS TOOLS TO SUPPORT COLLABORATIVE PRACTICE

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ABSTRACT

Collaboration between practitioners who come from differing starting points presents more than procedural challenges. Differences of worldview and/or of power can threaten collaborative processes at their core, potentially leading to despair, unsatisfactory trade-offs, or inequitable processes and outcomes. Differing starting points in collaborations may manifest as divergent assumptions about what is important, what is possible, and how to proceed; different accepted terminology, methods and priorities; diverse personal or professional capacities or capabilities; non-aligned standards and structures of accountability; and differing real or perceived levels of power.

The challenges of facilitating productive collaboration with people from diverse professions, backgrounds, capabilities and accountabilities are not difficult to imagine or list. The process of harnessing multiple perspectives and sets of expertise in order to work together on a common issue is highly complex. This paper offers two practical tools for supporting such collaborative processes. Each of the tools has been derived from systemic frameworks already in the literature, but which here have been turned into tools readily usable by practitioners. The development of the tools comes from reflective fieldwork by the author, as a facilitator of collaborative process, and from his search to make sense of researched experiences of practitioners of collaborative processes. The first of the tools draws on the four windows of systemic appreciation developed by Flood. Each of the four windows (systems of process, systems of structure, systems of knowledge-power, systems of meaning) are used to derive practical questions on matters all participants in a collaborative process will need to be satisfied for productive collaboration to happen. The second of the tools draws on two otherwise unrelated frameworks: a framework (Cash, Clark, Alcock, et al.) to understand what it takes for information to be utilised in group situations, and a framework (Ulrich) for critically reflecting on boundaries in a social system. Each of the contributing frameworks can be presented as triangles, and the innovation presented here superimposes the two triangles as mutually complementary in a way that can generate six dialogical questions for critical collaborative practice. While Cash et al. identify three qualities needed for information or expertise to be utilised: salience, credibility and legitimacy; Ulrich (Critical Systems Heuristics) offers a schema to make power, marginalisation and inclusion discussable by examining any ‘truth claim’ as embodying judgements about what is relevant, values and boundaries. The paper briefly describes two pieces of research/practice that serve to highlight challenges of productive collaboration. It then introduces each of the two tools, showing how they draw on existing frameworks and how they help address the challenges identified. Finally, the paper discusses the potential for the tools and their importance as practical expressions of aspirations of critical systems thinking for engaging diverse parties in common action.

Keywords: collaboration, critical systems thinking, tools, Critical Systems Heuristics

INTRODUCTION

This paper offers two practical tools for supporting challenging collaborative processes. Each of the tools has been derived from systemic frameworks already in the literature, but which here are turned into tools readily usable by practitioners.

Collaboration between practitioners coming from differing starting points presents more than procedural challenges (Butcher et al., 2019). Differences of worldview and/or of relative power can threaten collaborative processes at their core, potentially leading to despair, unsatisfactory trade-offs, or inequitable processes and outcomes (Midgley, 2000). Differing starting points in collaborations may manifest, variously, as divergent assumptions about what is important, what is possible, and how to proceed; different accepted terminology, methods and priorities; diverse personal or professional capacities or capabilities; non-aligned standards and structures of accountability; and differing real or perceived levels of power.

Challenges for facilitating productive collaboration with people from diverse professions, backgrounds, capabilities and accountabilities are not difficult to imagine or list (e.g.: Brower, 2016; Kirk et al., 2017; Pirsoul and Armoudian, 2019). The process of harnessing multiple perspectives and sets of expertise in order to work together on a common issue is highly complex (Ansell and Gash, 2008, 2012; Butcher et al., 2019; Innes and Booher, 2015).

The development of the tools presented here comes from the author's reflective fieldwork as a facilitator of collaborative process and from his search to make sense of his research into experiences of practitioners of collaborative processes. In particular, the author worked with public health officers in New Zealand seeking to establish collaboration with 'non-health' experts when addressing public policy (Nicholas et al., 2021); and with practitioners seeking collaborative decisions on water use in New Zealand (Nicholas, Foote, Hepi, et al., 2019; Nicholas and Foote, 2020; Robson et al., 2017).

The first of the two tools presented here draws on the four windows of systemic appreciation developed by Flood (1999). In our application, each of the four windows (systems of process, systems of structure, systems of knowledge-power, systems of meaning) are used to derive practical questions on which all participants in a collaborative process will need to be satisfied for productive collaboration to happen. The second of the tools draws on two otherwise unrelated frameworks: one (Cash et al., 2002) to understand what it takes for expert information to be utilised in decision making, the other (Ulrich, 1983, 2003, 2005) for critically reflecting on boundaries in a social system. Each of these contributing frameworks can be presented as triangles, and the innovation presented here layers the two triangles as mutually complementary, then generates six dialogical questions for critical collaborative practice. Cash et al. identify three qualities needed for information or expertise to be utilised (salience, credibility and legitimacy); Ulrich offers a schema to make power, marginalisation and inclusion discussable by examining any 'truth claim' as embodying judgements about what is relevant, values and boundaries.

The paper briefly describes two pieces of research/practice that serve to highlight challenges of productive collaboration. It then introduces each of the two tools, showing how they draw on existing frameworks and how they help address the challenges identified. In doing so, we highlight

some important intellectual antecedents for our development of the tools. Finally, the paper discusses the potential for the tools and their importance as practical expressions of aspirations of critical systems thinking for engaging diverse parties in common action. As will be seen, the concept of dialogue is used a number of times in the paper. Two clarifications may be useful: we explicitly recognise that power imbalances and coercive settings are corrosive to dialogue, so a naive view of dialogue will not do; we take our understanding of dialogue from Bohm (1996) and others (e.g. Isaacs, 1999) who have clarified that it refers to a collaborative effort, not (as some assume) the direction of communication (two way rather than one way).

This paper brings a practitioner's eye to three generic models suitable for investigating complex social dynamics and produces practical wisdom for those attempting to design, critique, support or participate in collaborative process. The tools presented here, then, are not an attempt at general theory, nor recipes for predictable outcomes; our aim is simply to re-present generic frameworks as practical tools for practitioners in the field. Our contribution may be seen as bringing together a deep appreciation of the foundations of critical systems thinking, including Ulrich's 'discursive' perspective (Ulrich, 2003), in its attempts to handle issues of diversity and power dynamics with the increasingly common requirements of governance and operational decision makers to engage constructively the experience and expertise of diverse multiple parties.

TWO SETTINGS FOR COLLABORATIVE TOOLS

The development of the tools to be presented here draws on two settings from the author's research that serve to highlight the demands of collaborative practice and the potential for some practical wisdom to support those involved. Our examples are: public health officials engaging with officials from other disciplines and authorities to improve local outcomes, and collaboration between diverse parties with interests in waterways and their use in relation to cultural, environmental, recreational and economic outcomes. Each of the settings involved structured engagement between actors bringing diverse expertise in an intentional pursuit of a shared task to change outcomes.

The public health setting involved officials participating in various inter-agency collaborations and statutory processes in attempts to ensure public health concerns would be part of public policy. Our research investigated public health officers' role in three projects: participation in developing a city plan to ensure it took account of wastewater disposal issues; submissions to formal hearings to approve a residential development which needed to consider environmental and health outcomes, including quality of drinking water, wastewater disposal and toxicity in soil; and an inter-agency approach to improving housing quality in a region. A key finding from these studies was the need for public health experts "to establish a 'place to stand' or to create space for public health expertise to be received by non-health actors" (Nicholas et al., 2021: 4). Such a space was not guaranteed, and required establishing with those coming from other disciplines and agencies sufficient legitimacy, credibility and salience (Cash et al., 2002). The situations also demonstrated that the relative power or authority of discourses in such collaborations can not be taken for granted or disregarded. Hence, we found it important to consider Ulrich's discursive systems approach (Ulrich, 1995, 2002a, 2002b, 2003)for its usefulness in making embedded assumptions discussable. This thinking resulted in a prototype (Nicholas et al., 2021) of the Critical Collaboration Model to be presented later. We also needed to offer advice to our client, public health officers, to support collaborative process in the practice of meetings. For that we drew on Flood's four windows of

systemic appreciation, not as a sense-making model to 'simply' appreciate the system, but as a way to generate practical questions that could be seen as concerns (implicit or explicit) for all participants. Our application of the four windows is the first of the two practical tools outlined below.

Our second setting was the experience across three areas of New Zealand attempting to engage multiple perspectives and interests around the use and quality of waterways. Our findings in that case resulted in a model of critical variables covering the conditions, capabilities and capacities influencing success of collaborative processes (Nicholas et al., in preparation; Nicholas, Foote, Hepi, et al., 2019; Nicholas and Foote, 2020). Within the overall findings of critical variables, one area that emerged as particularly important for constructive collaboration was help for a group to negotiate and embrace difference while managing power differentials within the group and in society. This finding led us to refining the prototype Critical Collaboration Model (CCM) (referred to above). The CCM is the second of the two practical tools outlined below.

TWO PRACTICAL TOOLS TO SUPPORT COLLABORATIVE PROCESSES

Four windows of systemic appreciation

The first of the tools draws on the four windows of systemic appreciation developed by Flood (1999). Flood's stated aim in describing the four windows is to "deepen systemic appreciation". "The aim is to become better informed about issues and dilemmas [of the action area] leading to more relevant choices for improvement" (Flood, 1999: 94).

Flood describes the four windows as a form of categorisation, to be seen as an 'ideal type', for the purpose of stimulating debate, generating insights and enhancing learning. He goes on to state:

> "Organisational life might be made sense of in terms of the following four categories – systems of process, of structure, of meaning, and of knowledge-power... The four categories help to locate types of issue and dilemma encountered in organisational life" (Flood, 1999: 94)

Systems of processes concern matters of efficiency and reliability of flows of events; systems of structure concern matters of effectiveness; systems of meaning concern matters of view-points held by people on what is meaningful to them; and systems of knowledge-power concerns matters of fairness in terms of who determines what is deemed valid knowledge and proper action (Flood, 1999).

We have taken Flood's four windows and used them to categorise generic challenges to collaborative activity, and to propose practical approaches to overcome the challenges. Our framework was first described to assist practitioners designing or participating in interdisciplinary meetings (in particular, meetings in which public health experts sought to collaborate with non-health experts in response to public issues). It serves to alert organisers and participants to categories of potential misunderstanding or resistance in collaboration. It also is suggestive of pathways to work through such misunderstandings and resistance.

Our use of Flood's categorisation to support collaboration reflects our experience of finding it useful to monitor unconscious processes in groups, and of making such processes explicit enough to be addressed. The work of Bion (1961) and of Argyris and Schön (Argyris and Schön, 1996; Schön,

1987) provide support and background to this approach. A pioneer in the field of unconscious processes in groups, Bion (1961) drew a distinction between the intended work of a group and 'basic assumption' behaviour that can distort or disrupt that work. He attributed the source of such disruptions to unconscious anxieties and frustrations held by members of a group about the group itself.

> "In any group there may be discerned trends of mental activity. Every group, however casual, meets to 'do' something; in this activity, according to the capacities of the individuals, they co-operate... Since this activity is geared to a task, it is related to reality, its methods are rational... This facet of mental activity in a group I have called the Work Group. The term embraces only mental activity of a particular kind, not the people who indulge in it...
>
> [However] Work-group activity is obstructed, diverted, and on occasion assisted, by certain other mental activities that have in common the attribute of powerful emotional drives" (Bion, 1961: 142–143, 145).

While Bion went on to describe particular basic assumption behaviour in terms of psychoanalytic theory, here we are simply recognising that certain frustrations and anxieties are likely to exist in groups and can be disruptive if not surfaced constructively. Our use of Flood's four windows is one approach to surfacing disruptive basic assumptions through calling attention to particular generic loci of frustration or anxiety. Argyris and Schön, in turn, proposed the concept of 'theories-in-use' behaviour to describe usually tacit interpersonal behaviours that often operate in situations of difficulty or stress (Schön, 1987). They called the values, strategies, and assumptions implicit in the common (unreflective) expression of theories-in-use, Model I behaviour.

> "Model I theories-in-use contribute to the creation of behavioral worlds that are win/lose, closed, and defensive. It is difficult in Model I worlds to reveal one's private dilemmas or make a public test of one's most important assumptions" (Schön, 1987: 256)

Argyris and Schön advocate a different set of values, strategies and assumptions that they called Model II.

> "Its governing variables are valid information, internal commitment, and free and informed choice. Model II aims at creating a behavioral world in which people can exchange valid information, even about difficult and sensitive matters, subject private dilemmas to shared inquiry, and make public tests of negative attributions that Model I keeps private and undiscussable" (Schön, 1987: 259).

Thus, the framework of Flood's four windows provides us with generic categories for possible tacit assumptions that, in groups attempting collaboration, can be disruptive and counter-productive. The models of Bion, and Argyris and Schön provides us with theoretical underpinning for understanding the shape and power of unconscious processes in groups, and can suggest practical strategies to improve collaborative action.

Applying the Four Windows

One way to manage the generic challenges of multiple worldviews and power differentials in meetings and other collaborative settings is to consider four under-pinning sets of questions that need to be answered satisfactorily for each of the participants:

- Questions of efficiency and reliability (process)
- Questions of effectiveness of functions (structure)
- Questions of meaningfulness (meaning)
- Questions of fairness and recognition of different knowledge (knowledge-power).

In outlining this application of the four windows it will become clear that, useful as it is, a simple application of the questions will not address power differentials and implicit boundary judgements; these are more appropriately addressed by our second tool, to be discussed later.

Questions of efficiency and reliability

Participants from diverse perspectives need confidence that the way meetings are held, and that work is managed and carried out, are an efficient use of time and resources, and are dependable. The question that needs to be answered is: is there a better way of carrying out this work?

When working with people from diverse backgrounds and perspectives, it cannot be taken for granted that any one profession or expertise has a monopoly on the most efficient and reliable way to approach a problem. Nor can it be taken for granted that participants will already know and trust the efficiency and reliability of an approach to the problem if it is brought from some different perspective.

By explicitly focusing on differing assessments of what will make for efficiency or reliability, collaboration can be enhanced. The immediate focus for collaborative dialogue becomes this as a source of anxiety or suspicion among collaborators. Instead of diffuse or generalised resistance or obstructive behaviour, dialogue about differing assumptions about fit-for-purpose process can become a stepping stone to refocusing on the formal purpose of the collaboration.

Questions of effectiveness of functions

Participants will also need confidence that the rules and procedures being employed or assumed as part of a current collaboration are likely to be effective in achieving what it is they are intended to achieve. Such rules and procedures typically deal with issues of co-ordination, communication and control. They are often taken for granted within a particular organisational context, but can be a mystery and/or a stumbling block to participants from other contexts. For example, structures taken for granted within central government are not the same as those that operate in local and regional government, among indigenous peoples or for NGOs; and central or local government structures may seem quite alien to those from a business or a community background.

Doubts about effectiveness may spring from earlier negative experience of a particular approach, or may be simply based on lack of experience of the proposed approach compared with a familiar one. Either way, it can be useful to invite and make discussable evidence of effectiveness, thus surfacing tacit bases for resistance or enthusiasm. Such an invitation is designed to draw participants into what Argyris and Schön (Argyris, 1977; Schön, 1987) called ‘double loop learning’: “learning about

the values and assumptions that drive one's own or the other person's behavior" (Schön, 1987: 256). Again, taking time to focus together on possible grounds for a choice is likely to be more productive than direct advocacy for particular paths as if their effectiveness is self-evident or there is no sensible alternative.

Questions of meaningfulness

Participants in collaborative processes need confidence that their own ways of making sense of the world are able to co-exist with and inter-act with those of others in the collaboration. The way people make sense of the world can be thought of as a product of "values, norms, ideologies, thought and emotion, coherence and contradiction" (Flood, 1999: 110).

While it is likely that any collaboration will involve a diversity of how to make meaning, there are three ways in which people may decide to work together: consensus (very strong alignment on what needs to be done and how to do it), accommodation (finding some common ground while preserving difference), or tolerance (acceptance of tension between differences) (Flood, 1999). Flood sees the notion of consensus as "increasingly recognised as undesirable and unlikely" (Flood, 1999: 111), noting that consensus epitomises assimilation, reduces diversity of thought, and may represent oppression; and that, in any case, diversity of experience, values, norms and ideologies makes the likelihood of consensus incredible. Flood is cautious about tolerance as the mode for working together, simply because of how difficult it can be to achieve and maintain a system of recognising the "positive worth of what emerges from an existence where tension is accepted as a norm" (Flood, 1999: 111). Accommodation, then, is the most realistic mode for collaborative processes when it comes to diverse ways of making sense of the world. This is a matter of discovering what can be held in common, while accepting differences. Accommodation speaks of making room for one another. We have found it useful to deliberately invite reflection of what matters to participants. Various applications of Critical Systems Heuristics (CSH) (Ulrich, 1995, 2003; Ulrich and Reynolds, 2010), including our model (CCM) shared later in this paper, are useful in stimulating dialogue on values and assumptions, and for making apparent the diversity among participants. Examples of such applications, to collaboration in research settings, are described in Nicholas et al. (2020; 2019).

Questions of fairness and recognition of different knowledge

Participants in collaborative processes need confidence that what is to be considered valid knowledge (and, therefore, valid action) will be decided fairly rather than being simply an expression of those in the setting that have the most power.

Taking power relationships seriously is a core concept in critical systems thinking (Midgley, 2000; Reynolds and Holwell, 2010). Again, various applications of CSH and other critical systems tools can be useful in making power dynamics and assumptions discussable. The choice of tool or method is not as important as ensuring dialogue enabled by a structured heuristic (Nicholas, Foote, Kainz, et al., 2019: 367). 'Dialogue' is our preferred term here, in contrast to 'dialectic'. With Friedman (quoted in Czubaroff, 2000), commenting on Martin Buber's approach to dialogue, we understand "dialectic as the interaction of ideas abstracted from their human advocates, while dialogue is the interaction of concrete particular persons" (Czubaroff, 2000: 170). Collaboration is between particular persons; it is by its nature an intention by those persons to work together. While decisions on validity of knowledge will be important, abstracted 'truths' or agreements would miss

the point; what matters for collaborative effort is mutual confidence that differences of what counts as valid are admissible and respected while validity is decided. We find the 'eternal triangle' articulated by Ulrich (2003) helpful in this regard (Figure 1). Ulrich holds together in the triangle boundary judgements (understanding of the system), observations (relevant facts) and evaluations (value judgements). This triangle constitutes a core part of the second tool we present and is discussed further below.

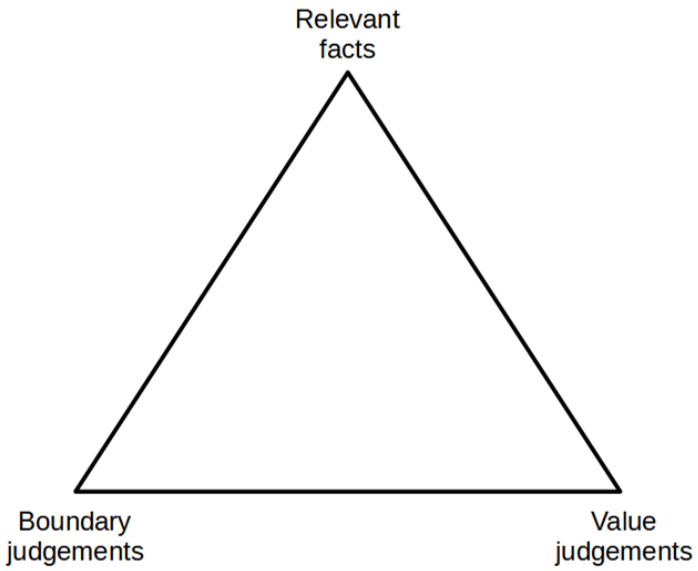

Figure 1: Ulrich's 'Eternal Triangle'

Using the tool

Our application of the four windows framework is likely to be most useful in designing adequate process, and in diagnosing (formally or informally) tensions, resistance and dysfunction in a collaborative project. The questions proposed for each of the windows are useful in identifying aspects of working together that may need intervention, but they are not in themselves methods for correcting resistance or dysfunction.

The second tool, now presented in the paper, complements the four windows framework. It can be used to promote collaborative dialogue within a collaboration and make explicit issues of power, inclusion and validity of knowledge.

Critical Collaboration Model (CCM)

The second of our tools draws on two otherwise unrelated frameworks: a framework (Cash et al., 2002) to understand what it takes for information to be utilised in group situations, and a framework (Ulrich, 2000, 2003) for critically reflecting on boundaries in a social system.

Our CCM is offered as a tool for reflective practice (Schön, 1983, 1987) for use by those participating in, designing or facilitating collaborations. Notably, however, our model takes as axiomatic that all practice takes place in contexts of "structural asymmetries' of discourse situations" (Ulrich, 2003: 330).

Collaboration here is conceived as a process of mutual uptake of one another's diverse expertise as participants in an intentional pursuit of a shared task. This requires some explanation. Reserving the term collaboration for situations intending mutual uptake of expertise (while idealised) puts front and centre where expertise is seen to reside: in each participant. As will be seen, this conception of collaboration also opens the way for us to use a framework otherwise designed to describe the relationship between specialist knowledge holders and decision makers (Cash et al., 2002, 2006; Mitchell et al., 2004).

Also, in our conceptualising of collaboration, we distinguish 'shared task' as the function of collaboration from commonly assumed alternatives, shared purpose or goal. Purpose is a matter of motivation and worldview, and so can remain quite diverse among participants while focusing on a task; and goal (achieved purpose), as a desirable destination for participants, is unlikely to be fully satisfied within the collaborative process itself. Achieving purpose will involve a co-creation of value (Vargo and Lusch, 2015) in which each participant in the collaboration becomes an active integrator of resource from the collaboration into their own 'world' and produces value according to their own evaluation.

Salience, Credibility and Legitimacy

The salience, credibility and legitimacy schema was developed by Cash et al. (2002) to explore the boundary between scientific and technical advice and decision making (particularly policy). They conceptualise what is involved in moving across that boundary. Their finding is that "information requires three (not mutually exclusive) attributes – salience, credibility and legitimacy – and that what makes boundary crossing difficult is that actors on different sides ... perceive and value [each of the attributes] differently" (Cash et al., 2002: 1). They point to strategies and structures that can assist with boundary crossing and thus collaboration and uptake of expertise. We have chosen to incorporate their triangle of attributes (Figure 2) in our CCM because we conceptualise collaborative process as analogous to overcoming the boundary between expertise and decision making; in the context of mutual collaboration each party faces the thresholds of salience, credibility and legitimacy in order to integrate expertise/experience from other parties, and in order to commend their own expertise/experience to others.

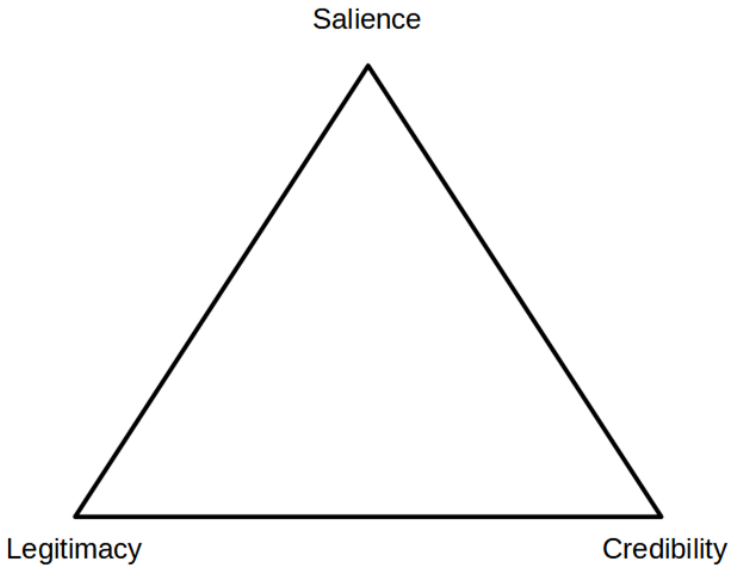

Figure 2: Ulrich's Eternal Triangle

Ulrich's Eternal Triangle

Ulrich (2003) offers a schema to make power, marginalisation and inclusion discussable by regarding any 'truth claim' as embodying judgements about what is relevant, values and boundaries. Ulrich has described the background to the schema, stating,

> "The idea is that both the meaning and the validity of practical propositions (eg solution proposals or evaluations) depend on assumptions about what 'facts' (observations) and 'norms' (valuations) are to be considered relevant and what others are to be ignored or considered less important" (Ulrich, 2003: 333).

Such 'boundary judgements' "define the boundaries of the *reference system* to which a proposition refers and for which it is valid" (Ulrich, 2003: 333). The eternal triangle (Figure 1, above), then, is a systemic triangulation that links 'facts', value judgements and boundary judgements such that, "each of the corners [are to be considered] in the light of the other two".

> "Different value judgements can make us change boundary judgements, which in turn makes facts look different. Knowledge of new facts can equally make us change boundary judgements, which in turn makes previous evaluations look different, etc. (Ulrich, 2003: 334).

Ulrich's purpose for the schema and the associated Critical Systems Heuristics seems to be that claims to the way the world is to be seen (validity claims) need to be open to critique, and that such critique should not "depend on any special expertise regarding the claim at issue and thus can give a new critical competence to ordinary people" (Ulrich, 2003: 334). The approach is explicitly intended to be emancipatory, and the emancipatory task is to be seen as more than a commitment by those with power, it is a 'methodological requirement'. Emancipation is to be attempted by making citizens competent to question selectivity embedded in and distorting any discourse.

Constructing the model

The CCM is a pragmatic amalgam of the two schema by representing them each as a triangle, layering them together and then allowing a 'dialogue' between adjacent points to generate generic enquiry (Figure 3). That much was present in the prototype derived from the public health work referred to (Nicholas et al., 2021). The purpose of the six enquiries is to enable on-going explicit discourse to critique assumptions that may be embedded in a system or authority claim.

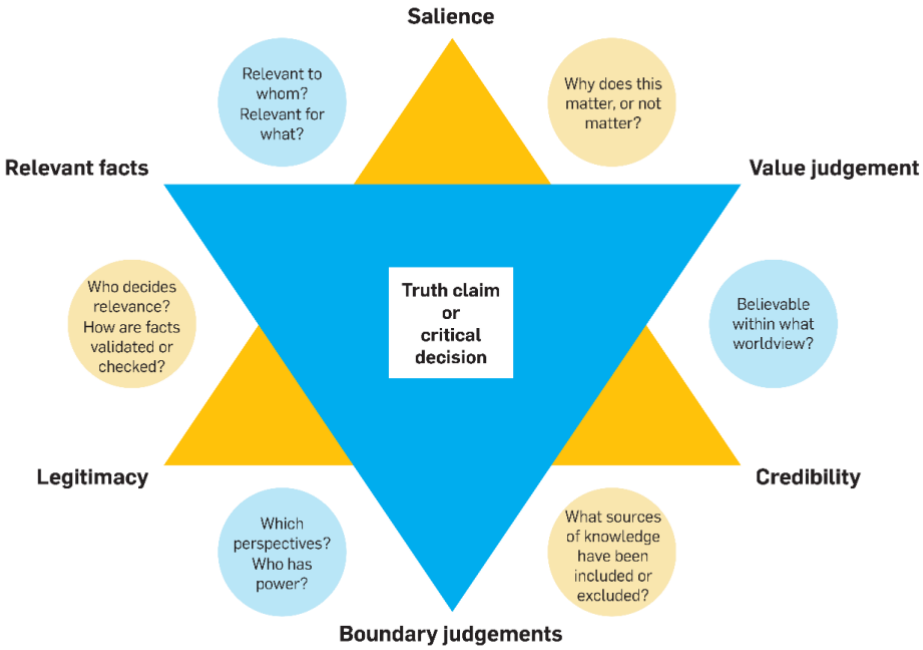

Figure 3: Prototype Critical Collaboration Model. Source: Nicholas et al., 2021

The CCM as presented below is a refined version, removing the visibility of the underlying triangles, and focusing on edited practical questions for collaboration participants and practitioners (Figure 4).

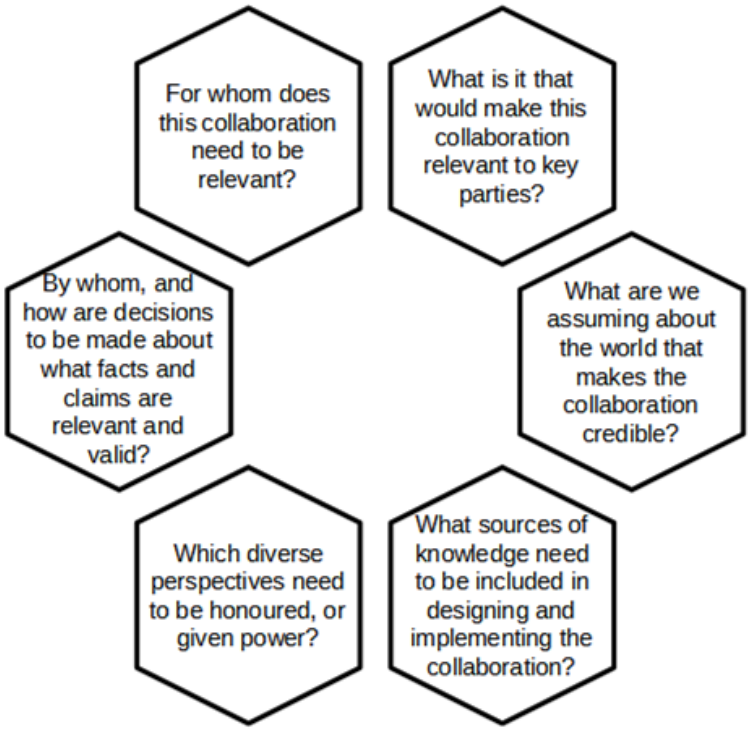

Figure 4: Critical Collaboration Model

As will be seen, the questions are basically the same between Figure 3 and Figure 4, although have been edited for clarity and wider application.

One aspect of layering the triangles is the decision about how one triangle would be related to the other. It would be possible to rotate one triangle in relation to the other and thereby have quite different points adjacent, and therefore quite different enquiry generated between them. Our choice of orientation is entirely pragmatic in relation to our purpose (to offer practical wisdom to support collaborative practice). The question was, which orientation produced generic enquiry likely to prove useful in practice. So, the generative dialogues were between *salience* and *value judgement*; *value judgement* and *credibility*; *credibility* and *boundary judgements*; *boundary judgements* and *legitimacy*; *legitimacy* and *relevant facts*; *relevant facts* and *salience.*

Using the model

The CCM functions as a dialogue device for participants, inviting perspectives and assumptions to be shared and enabling them to be discussable. It can be like a boundary object (Hoppe, 2010; Star, 2010): "objects that are plastic enough to be adaptable across multiple viewpoints, yet maintain continuity of identity" (Star, 1989). In this case, the model is an object that can accommodate multiple perspectives on the chosen focus for its questions. The aim is not agreement or reaching 'an answer'. The aim is to support the main task of a collaboration by paying attention from time to time to the practice of collaboration; thus, collaborative reflective practice. Furthermore, the

dialogical function of the CCM is enhanced by it becoming a shared language among collaborators that enables reflexivity throughout the work together, be that through formal application of the model at periods or informal mutual critique.

Enquiry stimulated by the CCM can be useful at several levels of collaboration. For example, the focus may be the collaboration itself, or (looking up a level) the collaboration as an activity in society, or (looking down a level) particular projects or focuses within a collaboration, or (more particular again) individual claims or assumptions by participants to a collaboration. Our experience in using the CCM is that it is helpful to clarify which level of focus is being discussed.

As will be discussed below, CCM is intended as a basis for contesting unquestioned assumptions within and around a collaborative effort. As such it is not intended as a method to be followed to achieve an outcome. Rather, it is intended to signal and enable a way of being together that encourages equitable dialogue by making the framing of dialogue dialogical.

Finally, our experience is that the diagrammatic presentation of the model unhelpfully invites a linear application, systematically working from a supposed starting point clockwise around the circle. We have found it important to emphasis that no sequence is implied by the layout; that each enquiry in the model is systemically linked to the others. Indeed, an earlier visual of the CCM had an apex of the model at the top; we modified the orientation to de-emphasise any starting position.

DISCUSSION

Our aim in this paper has been to present systemic frameworks as practical tools for practitioners undertaking complex collaborations. The two tools presented here can be seen as complementary to one another. While both can be used to promote internal and external dialogue about the collaboration itself, one (the four windows) remains naive about potential power imbalances and unquestioned judgements within and around such dialogue. The other tool (the CCM) offers an accessible way for power and judgements to be questioned and considered. Thus, we have drawn one tool from each of the two stands of Critical Systems Thinking, as outlined by Ulrich (2003): Flood's framework from the 'total systems intervention' (Flood and Jackson, 1991) strand, and Ulrich's from the Critical Systems Heuristics strand. Neither of the tools is intended as general theory to explain or predict behaviour or outcomes in collaborations. They are simply credible tools to equip practitioners with approaches to support constructive collaboration. As such, the main limitation of what is offered here is limited robust assessment of usefulness to practitioners in a variety of settings. We look forward to further trials by ourselves and others.

The innovative application of Flood's four windows of systemic appreciation offers a framework for considering potential resistance to collaboration, and can be useful in designing processes or diagnosing dysfunction. Our approach draws on psychological concepts of resistance, anxiety and unconscious processes. Although such concepts are core to thinkers such as Bion (1961), Argyris and Schön (Argyris, 1990; Argyris and Schön, 1996; Schön, 1983, 1987), we believe our integration of them into the easily understood four windows provides a practical tool for practitioners. By focusing on four areas on which participants need to feel confidence (questions of efficiency and reliability, effectiveness of functions, meaningfulness, and fairness and recognition of different knowledge) the framework opens possibilities for choosing preventative or corrective strategies. Our application of each of the four windows includes the possibility of taking time within a

collaboration for participants to attend to underlying and possibly unrecognised anxieties and sources of reluctance or resistance. As such the tool can be useful in promoting dialogue on structures and process within a collaboration.

The CCM is a tool to recognise diversity of worldview, including values and perspective. Its purpose is not to eliminate difference but to make difference explicit and hold each position vulnerable to other positions. It is offered as an emancipatory tool; providing language and logic for otherwise marginalised voices to question assumptions. We see this use of the CCM within the discursive approach advocated by Ulrich (1995, 2000, 2003). Consequently, the CCM is offered, not as a method to be followed, but a tool to be accessed *im passim* throughout the course of collaboration to enable collaborative reflexivity or particular critique, making the collaborative enterprise itself a matter equitable dialogue.

Robust dialogue requires commitment by participants. As one author puts it:

> Dialogue is a conversation in which people think together in relationship. Thinking together implies that you no longer take your own position as final. You relax your grip on certainty and listen to the possibilities that result simply from being in a relationship with others – possibilities that might not otherwise have occurred (Isaacs, 1999).

The CCM is a tool to enable that process. The CCM can also be seen as a Foucauldian tool, in the sense explained by Flyvbjerg in contrasting Foucault with Habermas in their emancipatory thinking:

> "Whereas Habermas approaches regulation from a universalistic theory of discourse, Foucault seeks out a genealogical understanding of actual power relations in specific contexts… For Foucault… freedom is a practice, and its ideal is not a utopian absence of power" (Flyvbjerg, 2001: 102).

Our hope in making the CCM available to participants and practitioners in collaborations is that it enables freedom as a practice and so helps collaborations achieve the richness of their ideal, the process of harnessing multiple perspectives and sets of expertise in order to work together on a common issue.

CONCLUSION

Collaboration between diverse interest holders and experts has become a widely adopted approach to inform public policy and for problem solving in situations of complexity. However, the experience of designing, facilitating and participating in collaborative processes has shown that to achieve constructive outcomes requires attention to conditions and the design and implementation of process (Butcher et al., 2019). In particular, on the basis of our own investigations (Nicholas et al., in preparation), we suggest that the importance of recognising diverse starting points (experience, structures and assumptions) can help collaborations to address resistance to working together on a shared task. Furthermore, we found that processes need to manage differentials of power, access to problem framing and other "structural asymmetries' of discourse situations" (Ulrich, 2003, p. 330). This paper offers an application of three systemic frameworks drawn from literature, that, in combination, are tools for supporting collaborations. Our application of Flood's (1999) four windows of systemic appreciation is used to categorise generic challenges to collaborative activity, and to propose practical approaches to overcome the challenges. Our amalgam of work by Cash et al. (2002) with work by Ulrich (2003) to construct the Critical

Collaboration Model produced a tool for collaborative reflective practice (Schön, 1983, 1987) for use by those participating in, designing or facilitating collaborations. It is explicitly designed to help collaborations deal with structural asymmetries' of discourse situations such as those mentioned above. The two tools described here are offered as 'practical wisdom' (Flyvbjerg, 2001), credible tools to try, rather than as general theory.

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