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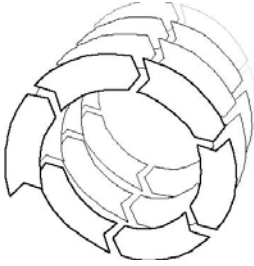
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Editorial

Debora Hammond,
Shankar Sankaran and Susan Goff

Dear Readers,

A warm welcome to this special issue on 'Systems Sciences and Action Research', a joint effort between the Action Learning and Action Research Journal (ALARj) and the Action Research Special Integration Group (AR SIG) of the International Society for the Systems Sciences (ISSS), which is intended to explore the relationship and encourage integration between action research and systems thinking. As the organizer of the AR SIG in 2013, Professor Shankar Sankaran, in collaboration with Professor Debora Hammond, proposed the theme for this issue and worked with Managing Editor Dr. Susan Goff to issue a call for papers and to serve as co-editors in the project. We are grateful to the reviewers, from ALARA, ISSS, ANZSYS (The Australia New Zealand Systems Society), and INCOSE (International Council for Systems Engineering), who generously contributed their time to review papers.

Robert Flood, who edits *Systemic Practice and Action Research*, elaborates on the link between systems thinking and action research by stating that 'action research carried out with a systemic perspective in mind promises to construct meaning that resonates strongly with our experiences within a profoundly systemic world'. (Flood 2010: 282). Foster-Fisherman & Foster (2010: 248) make a strong argument for systemic AR by stating that 'Systemic AR has a great promise as a method for promoting large-scale systems change. Systems thinking is one framework that can be useful for action researchers who hope to pursue transformative change and reveal, among other things, the axiomatic knowledge within a targeted context' (p. 248-249).

The practice is more recently recognised in the publication “The SAGE Encyclopedia of Action Research” (Coghlan and Brydon-Miller, 2014) who identify Systemic Action Research as having distinctive practices including: building pictures of the system, multiple starting points for inquiry, multiple and parallel inquiry strands, and fluid inquiry groups which follow the issues. The works of Danny Burns, Yoland Wadsworth, Merinda Epstein, and Susan Weil are discussed amongst others.

Historically, there has been a close association between action research and systems theory and practice, particularly in the United Kingdom. Growing out of his involvement with a group of action researchers at the University of Lancaster in the 1960s, Peter Checkland developed Soft Systems Methodology, which has been very influential in the evolution of applied systems theory. Action research has been a foundational practice in the socio-technical systems approach, developed by Eric Trist and Fred Emery of the Tavistock Institute. Trist was initially inspired by Kurt Lewin, who is credited with the development of the concept of action research, and the open system concept introduced by Ludwig von Bertalanffy, father of general systems theory. Midgley (2001) brought the focus on critical systems thinking at work in boundary creation within participatory inquiry environments underpinning much of the methodology of current Systemic Action Research praxis: “Boundary critique gives rise to the possibility of embracing theoretical pluralism. This is because different theories imply different boundaries of analysis, meaning that choice between boundaries also involves choice between theories.” (p. 103).

Although the connections are not quite as explicit in the United States, there was a close association between Trist & Emery and Russ Ackoff, who was one of the leading figures in the evolution of applied systems theory in the U.S. He introduced an interactive approach to planning that embodies key features of action research, including the involvement of all stakeholders in the planning process and a continuous process of planning, action and reflection. Similar principles can be seen in 1) the practice of

interactive management introduced by John Warfield in collaboration with Alexander Christakis, who went on to develop co-laboratories of democracy with Kenneth Bausch, and 2) the process of idealized design developed by Bela H. Banathy.

Many of these threads are explicitly interwoven in the article by Yiannis Laouris et al ("Examining Economic Integration and Free Trade within Cyprus using Structured Dialogic Design"), which builds on Warfield's interactive management and Christakis's and Bausch's co-laboratories of democracy to describe the implementation of a structured dialogic design (SDD) process. Including economists and business experts representing both communities, the project sought to address the challenges of economic integration between Turkish and Greek Cyprus. The process involves articulating a clear vision of desired outcomes, identifying obstacles to the realization of the vision, and exploring the relationships between the obstacles to discover the root cause. As the authors note, "[a]n effective and realistic action plan needs to first deal with the identified root causes of the root cause map in order to reach the desired situation, that is, the idealized vision."

In contrast to Laouris et al, who draw primarily on developments in the applied systems field that reflect the basic principles of action research, Ross Colliver et al ("Systemic pedagogy: A Design for Action Researcher collective self-development"), describe the facilitation of a conference intensive for action researchers with the intention of integrating a more systemic approach to learning participatory knowledge generation skills. The following passage reflects the explicit focus on collaborative inquiry in addressing the dynamics of power and seeking meaningful change:

Action Researchers ask questions about significant concerns in everyday organisational and public contexts. Through facilitating collaborative learning, they assist people to form the knowledge that informs actions with the intent to reduce the impact of those significant concerns. The process of inquiry itself develops the practices that not only constitute change; they also build awareness of the power and associated ethics, to do so. Ethics are essential in the reconfigurations of power, authority and agency that come with action.

In connection with the focus on issues relating to power and agency, the authors highlight the importance of honouring different worldviews, particularly the knowledges and languages of communities that have traditionally been marginalized, empowering them to "co-construct a future rather than simply submit to a mono-cultural and dominant form of power to control a future that only reflects the past."

This process of nurturing mutual understanding in multi-cultural communities is central in the articles by both Bronwyn Fredericks, et al ("Developing Pictorial Conceptual Metaphors as a means of understanding and changing the Australian Health System for Indigenous People"), and Michael Wright and Margaret O'Connell ("Held in Cultural Hands: Privileging Aboriginal worldviews leads to systemic change in the provision of healthcare services to Aboriginal families"), both of which emphasize the need for decolonization in addressing the health care needs of Indigenous communities in Australia.

Fredericks, et al, note: "We realised that improved Indigenous health outcomes require an improved understanding of the health system, developed from the perspective of Indigenous people." Integrating Soft Systems Methodology [SSM] into the process of clarifying that understanding, the authors describe their "systemic action research" approach as similar to traditional action research, with a focus on the whole system level and on the inter-relationships occurring within the system:

Systemic action research is built around three assumptions: (1) sustainable change in a system is dependent on realigning the whole system not only on solving problems; (2) people who are stakeholders in the system should participate and be involved in systemic change, and those stakeholders should come from right across the system (often with diverse views) to achieve sustainable change; and (3) a flexible and emergent learning framework needs to be built to 'hold' this diversity.

Echoing Colliver et al, the authors point out that the action research tradition "calls for traditional hierarchical power structures to be replaced by more equitable relationships,

particularly in decision-making processes. This ensures that researchers can identify and embrace the multiple knowledges of all participants." They then suggest: "Pictorial Conceptual Metaphors [similar to rich pictures used in SSM] are a powerful way of telling the story of colonisation and its inherited, cumulative and continuing impacts on Indigenous people's health and wellbeing."

With a similar emphasis on the process of decolonization, Wright and O'Connell use storying as "central to Nyoongar peoples' ways of being and doing, for it enables engagement and inclusivity," and suggest further that "[t]he story of colonization is one such phenomenon that can be redressed through a (re)telling of past events from a Nyoongar point of view so as to even out the playing fields of history." Echoing the orientation of the two previous articles, they write: "practitioners should approach research as a form of intervention that dismantles oppressive systems and empowers participants to seek and demand change."

Pia Andersson ("Scaffolding of complexity awareness and its impact on actions and learning") describes a similar process of cross-cultural learning and collaborative problem solving within a slightly more homogeneous although equally complex context - improving security for ambulance drivers through improved communication with emergency response and police services in Sweden. She describes action research as a "systematic process of inquiry" that "can offer a powerful approach for facilitating collaborative learning and transforming structural problems in organisational contexts." Using a process similar to SSM, she describes a process of constructing meaning across distinct specialized fields of knowledge to create a shared language and shared meaning and to cultivate an appreciation for whole systems thinking.

We close this issue with a personal reflection on the meaning of action research in Emmanuel Nii Ayikwei Tetteh's "Communal-Photosynthesis Metaphor: Autobiographical Action-Research Journeys and Heuristic-Action-Learning Frameworks of Living

Educational Theories." Citing Bertalanffy, Tetteh emphasizes the importance of meaning making:

Because humankind lives and acts in a symbolic system, the systemic worldviews of metaphor usefulness can give meaning to the action-learning experiences, which is essential to the theory formation of professional practice. This symbolic system signifies the fabric of human nature and life experience in metaphorical terms to give meanings to our interactions.

Exploring the question of which metaphors can help practitioners make sense of their experiences using action learning and action research, he develops an intriguing model based on the process of photosynthesis as "the most cyclically collaborative, inclusive, interdependent, interactive, and participatory activities that constitute direct mutual benefits to humanity and the plant communities." With light (photo) as a metaphor for the "creative-reflective thought process of sense-making," he adds synthesis, which "depicts collaborative action for knowledge production."

Ray Ison, who is the President of ISSS in 2014-15 has also written about the connection between such systems thinking and AR and makes a distinction between using systems tools and techniques and methods in action research and the practice of 'systemic action research' (Ison: 2008). He suggests that action researchers should engage with the history of systems thinking and exhibit purposeful behaviour 'a behaviour that is willed - there is some sense in taking action' (p. 154), and he adds that 'being aware of purpose N: being able to ask about and articulate purpose can be a powerful process in AR'. (p. 155)

Purposefully then, and with this issue it is our great pleasure to introduce you to some of the current thinking in this blended and co-evolutionary field of intention.

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Application of the Structured Dialogic Design Process to Examining Economic Integration and Free Trade in Cyprus

Yiannis Laouris, Tatjana Taraszow,
Mustafa Damdelen, Ilke Dağlı,
Derya Beyatlı, Andros Karayiannis,
Kevin Dye, & Alexander N.
Christakis

Abstract

Following the failure of the Annan Plan to reunite the island, Cypriot peace pioneers identified the challenge of economic integration as root cause of the perceived widening of the gap between the divided communities. Three successive Co-Laboratories brought together twenty-one (Turkish- and Greek-speaking Cypriot) business and economist stakeholder representatives to create a citizens' platform and devise an action plan. The Co-Laboratories provided space for exploring future options and goals, besides diagnosing current problems in economic integration and the free movement of goods and services in Cyprus. They aimed at envisioning the ideal, desired situation, defining the current problematic economic situation, and exploring influences between alternative actions that could improve the current situation. They were implemented using the Structured Dialogic Design Process within the context of rich web-based communication. Participants invested 325 person-hours. The UNDP sponsored the Co-Laboratories in the context of the Civil Society Dialogue Project.

Keywords

Structured Democratic Dialogue, peace, economic integration, bi-communal, Co-Laboratory, Action Research, Interpretive Structural Modelling

Civil Society Dialogue Project

The political climate in Cyprus was not the most desirable after the failure of the Annan Plan to reunite Cyprus. The Plan (United Nations, 2004) was the result of negotiations between political leaders of the Greek and Turkish communities in Cyprus under the auspices of the United Nations (UN). Kofi Annan, UN Secretary-General at that time, presented and put this plan to simultaneous vote as separate referenda on the two sides on April 24, 2004 (Wright, 2004). Whilst the proposal received a 65% favourable vote from the Turkish Cypriot (TC) community, the Greek Cypriot (GC) community rejected it by over 75% (BBC News, 2004). The fact that TCs said “yes” whereas the GCs said “no,” damaged the atmosphere of rapprochement (Morgan, 2008). After the referenda, TCs felt frustrated and withdrawn, whereas GCs felt worried and puzzled. The climate was one of disappointment, discouragement, and disempowerment. There were attempts to bring the communities back together and discuss what went wrong (Sözen and Özersay, 2007; Varnava and Faustmann, 2009). However, no public debate was held to this end. Moreover, the activities of civil society, such as bi-communal meetings, had diminished. Peace pioneers from both communities launched in 2006 the “Peace Process Revival” aiming to re-launch a new citizens’ dialogue (Laouris et al 2009a). Their work identified “financial interests of politicians and ordinary people on both sides” as one of the most influential factors and gave birth to the Civil Society Dialogue Project¹ (CSDP), which was funded (December 2006 - August 2008) by the United Nations Development Program (UNDP). The project employed more than

¹ <http://www.civilsocietydialogue.net> ;
http://www.futureworlds.eu/wiki/Civil_Society_Dialogue_Project_in_Cyprus

10 Co-Laboratories using the Structured Dialogic Design Process (SDDP) methodology. The Co-Laboratories reported here focused on the economic perspective. The participants outlined the current status quo, and generated a vision and an action plan aiming for economic integration.

Economic situation

The economic situation in the GC and TC communities is described by GDP (Gross Domestic Product) and GNI (Gross National Income, formerly GNP -Gross National Product) for the period between 2000-2012 in relation to the business cycle as coincident² or lagging³ indicators. Figure 1 addresses the GC community and Figure 2 the TC. The summary of both GDP and GNI shows that the situation in the Greek-speaking community has been relatively stable. The highest GDP growth rate of the south economy was 5.1% in 2007. From 2008 onwards, growth is negligible or negative. In contrast, the GNP growth rate of the Turkish-speaking community shows radical changes during the past decade. The millennium started with a negative growth rate, which suddenly turned into a positive growth rate with more than a 10% increase, from 5.4% in 2001 to 6.9% a year later reaching a peak of 15.4% in 2004. Despite the lack of international recognition for the north, the GNP growth rate of the north economy not only increased steadily between 2002 and 2006, but also was much higher in comparison to the GDP growth rate in the south economy (e.g., Watson 2006)⁴. An unpublished study by the World Bank shows that in 2004, the GDP per capita in the north economy was 76% of the GDP per capita in the south economy in PPP (Purchasing Power Parity)-adjusted terms. This is despite the fact that only 26% of the island's total

² Economic factors that change at approximately the *same time* while a country's economy as a whole changes. Coincident indicators thus mirror the current situation of an economy.

³ Economic factors that change *after* the economy as a whole has changed. Lagging indicators therefore reflect the economy's past performance.

⁴ Since the annual growth rate of the TC economy is given in reference to GNP instead of GDP, the data from both communities should be compared carefully.

population belonged to the TC community, whereas 74% belonged to the GC community (Watson 2006).

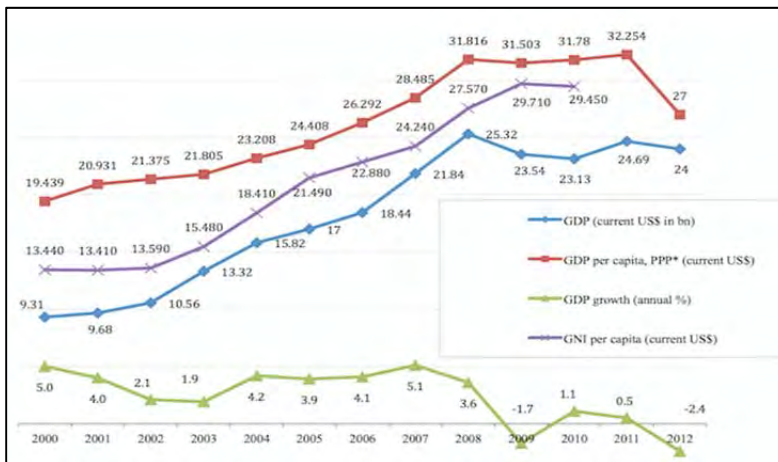


Figure 1. Coincident indicators of GC community. GNI per capita (current US\$) for 2011 and 2012 not available (2012 – estimation) Sources: Central Intelligence Agency (2013), Watson (2006), World Bank (2013)

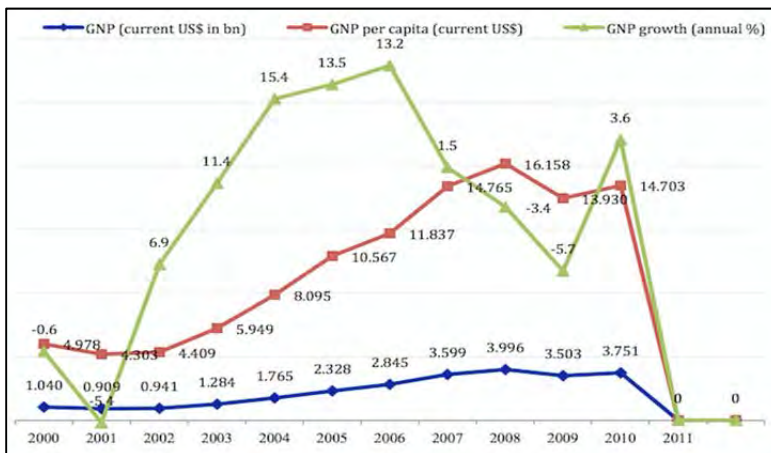


Figure 2. Coincident indicators NP of TC community. 2011 not available. Source: TRNC State Planning Organization (2013)

Lagging indicators confirm these long-term trends. The CPI (Consumer Price Index) that reflects the increasing cost of living or inflation, and unemployment rate are summarized Figure 3 for the GC community and Figure 4 for the TC. Inflation rate of the GC-community seems to follow a wave pattern characterized by a CPI peak every four to five years: CPI was above 4% in 2000, 2003, and 2008; declined to 2.0%–2.8% in between dipping to 0.5% in 2009. The GC-community ranked 75 in 2011 in the rate of inflation and 90 in 2012 (CIA 2013), indicating that the inflation rate in other countries increased more dramatically. In contrast, the inflation rate of the TC-community was much higher during the past 13 years. Between 2000 and 2012, two high-peak phases are observable: 65.5% in 2001 and a second peak with CPI above 12% from 2006 to 2008. CPI finally declined to 4.2% in 2010. The unemployment rate in the GC-community was fairly stable, between 3.3% and 5.4% during the period 2000 to 2009 then rising to reach 12.1% by 2012. The GC-community's unemployment rate ranked 91 in 2011 and 93 in 2012, as compared to the rest of the world (CIA 2013). According to the State Planning Organization of the TRNC (2013), the unemployment rate between 2000 and 2003 was moderately low with a maximum of 1.6%. Unlike the GC-community where the number of unemployed people slowly increased over time, in the TC-community, the unemployment rate dramatically rose from 1.4% to 10.0% from 2003 to 2004. Since then, the unemployment rate remains high, close to or above 10%.

As an indicator of the health of both economies, each community's public debt as a percentage of the GDP are shown in Figure 3 for the GC-community and Figure 4 for the TC-community. The GC-community's public debt was high in 2004, 2005, and 2011 (above 70% of GDP) and was expected to be even higher than 80% of GDP by 2012. It is, therefore, expected that the GC-community will have jumped from the worldwide rank 32 in 2011 to rank 27 in 2012 (CIA 2013). In the TC economy, public debt⁵ was highest in 2002

⁵ For the Turkish-speaking community, data on public debt in relation to the GDP were not publicly available; therefore, public debt of the TC economy is shown here as a percentage of the GNP. Hence, the data on both economies' public debts are not directly comparable.

(above 20% of GNP) and high in the years 2000, 2001, 2003, and 2009 (above 13% of GNP). In 2007, the TC-community's public debt was at the lowest rate with less than 5% of GNP, according to the TRNC's State Planning Organization (2013).

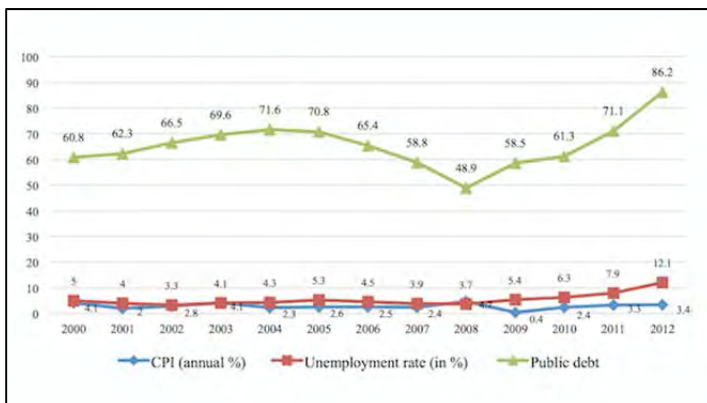


Figure 3. Lagging indicators CPI; unemployment rate; public debt of GC community (2012 – estimation). Sources: CIA (2013), International Monetary Fund (IMF) (2013), Republic of Cyprus, Statistical Service (2013), World Bank (2013)

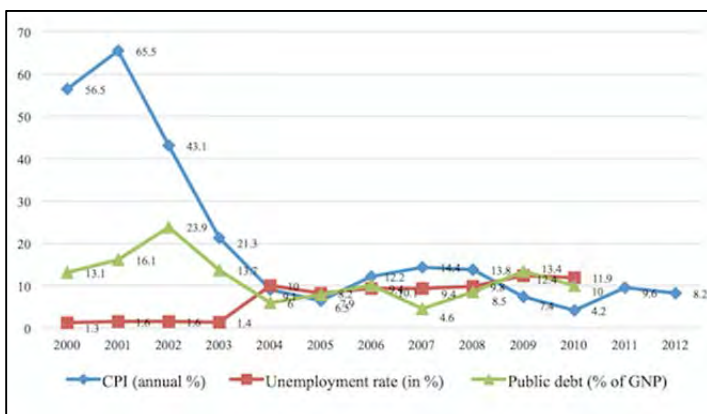


Figure 4. Lagging indicators CPI; unemployment rate; public debt of TC community. Unemployment rate (in %) Public debt (% of GNP) for 2011 and 2012 not availabl. Sources: TRNC State Planning Organization (2013)

Trade across the Green Line

From a sociological and humanistic perspective, the Green Line, which dates back to the 1974 ceasefire line, divides the island into the Republic of Cyprus, a Greek Cypriot community in the south and the Turkish Republic of Northern Cyprus⁶ (TRNC) a TC-community in the north. The Green Line, therefore, added another “state” border on the island. Cyprus was to join the EU as a divided island in 2004. This special circumstance created an anomaly for the EU, since the whole territory of the island is considered part of the EU, yet the *acquis communautaire*, that is, the EU’s laws and regulations, do not apply north of the Green Line, that is, in the TC-community. In the respective Council Regulation it reads, “Pending a settlement, the application of the *acquis* upon accession has therefore been suspended pursuant to Article 1(1) of Protocol No 10, in the areas of the Republic of Cyprus in which the Government of the Republic of Cyprus does not exercise effective control” (Council Regulation 2004a, p. 129). Hence, on 29 April 2004, two days before the Republic of Cyprus joined the EU, the Green Line Regulation was adopted in order for the EU to be able to also regulate the intra-island border – the Green Line – which became EU’s *de facto* external border, although it does “not constitute an external border of the EU” (Council Regulation 2004a p. 130).

The Green Line regulation comprises special rules regarding the crossing of goods, services, and persons across the intra-island border so as to protect the EU’s security with regard to illegal immigration and economic interests (Council Regulation 2004a). With respect to the trading of goods across the Green Line, the EU not only defined two permitted crossing points but also the type of goods allowed in north-south trade. Only goods wholly produced in the northern part of the island, such as raw materials or goods that underwent their last substantial process in the north, may be traded; the trade of animals and animal products is forbidden (Council Regulation 2004a). Over time, the Green Line’s legislation has been amended several times to particularly add new crossing points, for

⁶ Recognized only by Turkey.

example in June 2004 and in April 2005 (Council Regulation 2004b; Council Regulation 2005) and to add new products allowed for trading. Citrus fruits were added as trading goods in 2005 and potatoes were added in 2006 (Hatay et al., 2008). Moreover, in 2007, for the first time, the amendment to the Green Line Regulation allowed trade of certain animal products, namely fish, and honey (Hatay et al., 2008), on the condition that EU Food Law rules were met. Despite these early amendments, actual trade of the respective goods across the Green Line could only start several years later. For example, farmers who want to sell potatoes to the south have to use EU-certified potato seeds, thereby adding an extra burden to any potato farmer interested in intra-island trading. Regarding honey, it was not until 2013 that Turkish Cypriot beekeepers were allowed to sell their honey to the southern part of the island, because laboratory tests needed to be carried out to confirm that the sampled honey complied with EU standards on antibiotics and pesticides (European Commission 2013a). The comparison of intra-island trade, summarized in Figure 5, shows that trade has steadily increased since the adoption of the Green Line regulation in 2004.

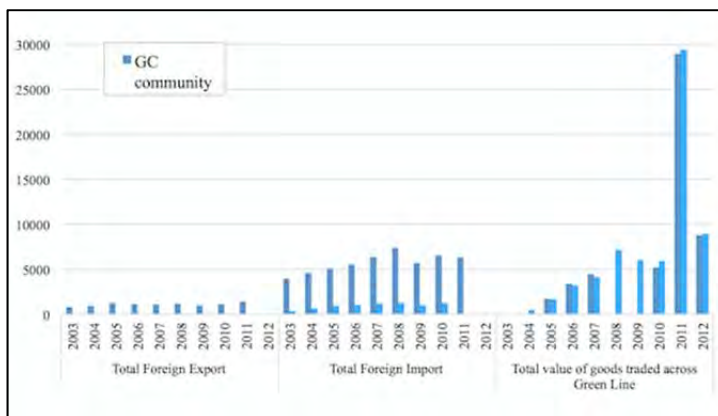


Figure 5. Foreign trade (export/import) and intra-island
"tradeconversion from US\$ (24/6/2013)*not available

¹ 1/5/2005-30/4/2006

² 1/5/2006-30/4/2007

³ 1/5/2007-30/4/2008

⁴1/5–31/12/2010

Sources: European Commission (2006-2013), Republic of Cyprus (2012), Turkish Cypriot Chamber of Commerce (2013), TRNC State Planning Organization (2013)

Method

SDD Methodology

The Structured Dialogic Design Process (SDDP) was chosen to implement the dialogues. SDDP supports democratic and structured dialogue among a group of stakeholders, enabling integration of contributions from individuals with diverse views, backgrounds, and perspectives through a process that is structured, inclusive, and collaborative (Christakis and Bausch 2006). It is scientifically grounded on laws of cybernetics/systems science (Christakis and Bausch 2006; Laouris et al 2008; Flanagan and Christakis 2009) and is specifically designed to assist groups to deal with complex issues in reasonably limited time (Banathy 1996; Warfield and Cardenas 1994).

The authors used hybrid SDDP, i.e., a combination of virtual and face-to-face interactions, as well as synchronous and asynchronous communication (Laouris and Christakis 2007). This approach was to: (a) reduce time required to deliver reasonable and useful results, and (b) lower cost to participants and sponsors of the dialogue. An earlier version of SDDP, Interactive Management (IM), was extensively applied successfully in Cyprus between the fall of 1994 and the summer of 1995 by Benjamin Broome (1997, 1998) who facilitated workshops of the Conflict Resolution Trainers Group – a group of 32 GCs and TCs working for peace that mobilized more than 1,000 Cypriots to strive for reunification (Broome 2005; Laouris 2004).

The hybrid SDD methodology has been used in the context of the Cyprus problem (Laouris et al 2009a) by Cypriot peace pioneers in 2006 to identify factors that contribute to the increasing gap between the two communities; they identified 121 factors. Using Interpretive Structural Modeling (Warfield, 1982, 1994) they discovered as root causes: Factor #47 – The personal and financial

interests of politicians and ordinary people on both sides;
Factor #72 – Media as puppets of political parties. The CSDP provided the formal series of bi-communal Co-Laboratories to engage business people and economists in a dialogue on the Cyprus economy.

Phases and Triggering Question - TQ

According to Flanagan and Christakis (2009), a typical SDD that tackles a multifaceted problem consists of four phases: (1) vision Co-Laboratory with stakeholders actively involved in vision building; developing a shared vision map of the ideal situation; (2) *problématique* Co-Laboratory to cooperatively identify obstacles that prevent the realization of their vision; (3) action Co-Laboratory that focuses on options, solutions, and projects, which could overcome the obstacles identified in the previous phase; and (4) development of a roadmap and practical strategy as well as mobilization of additional resources in order to move forward in tackling the complex societal problem.

Twenty-one business people and economists with diverse perspectives and experiences participated in three successive bi-communal SDD Co-Laboratories on 3rd, 10th, and 27th July 2007, which represent the first three phases:

- The first took place in the GC south part of Nicosia and aimed envisioning an ideal economic future. Seventeen participants focused on the TQ: “With the aim of economic integration, what are the benefits (opportunities) for Cyprus of the free movement of goods and services within Cyprus and the EU?”
- During the second Co-Laboratory, which took place in the TC north part of Nicosia, 14 economists contributed their knowledge and experiences to answering: “With the aim of economic integration, what are the obstacles including perceived threats in achieving the free movement of goods and services within Cyprus and the EU?”
- The last Co-Laboratory took place in the buffer zone and addressed possible actions to be taken to overcome the

obstacles of the current situation, in order to reach the desired situation with respect to economic integration. Eight stakeholder representatives focused on: “With the aim of economic integration, what actions should be taken to overcome the obstacles and to reap the benefits in achieving the free movement of goods and services?”

Dialogue Design Team, Authors and Participants

The authors formed the Dialogue Design Team (DDT) with local (1st, 2nd, 3rd, 5th, and 6th) as well as international (4th, 7th, and 8th) members. The last two authors (7th and 8th) headed the international wing of the DDT. One author (1st) was also a participant. Six authors (2nd, 3rd, 4th, 5th, 6th, and 8th) served as facilitators during sessions. The DDT remained constant and active throughout the process and supervised all activities. The participants were 21 Cypriots, of which 10 were GCs and 11 were TCs. They were chosen based on two criteria:

- Be a stakeholder i.e., economist or business expert;
- Be flexible and open-minded towards rapprochement between communities and appreciate win-win solutions to the economic aspect of the problem.

The majority of the participants did not have previous experience with the SDD methodology; only three (two TCs and one GC) were familiar with and had facilitated SDD sessions themselves. Four were female and 17 were male.

Indices of Spreadthink, Complexity, and Erroneous Priorities

The following scientific measures were applied in order to allow for objective comparisons of the results of the three successive Co-Laboratories, as well as with:

- Data collected in the previous Co-Laboratory that explored obstacles of the widening gap between the two communities and revealed financial issues as one root cause (Laouris et al 2009), and

- Similar Co-Laboratories organized in 1995.

Spreadthink (ST) identifies the level of stakeholders' disagreement on the most important factors to a problem and is defined as $ST = (V - 5)/(N - 5) \times 100$ (Warfield 1995). The average level of disagreement is 40% (Warfield 1995).

The **Situational Complexity Index** (SCI) demonstrates the degree of complexity of a problem situation and is defined as $SCI = DK(N - 7)/R(R - 1)$ (Christakis and Bausch 2006), with

$$D = (V - 5)/(N - 5)$$

V=Ideas receiving ≥ 1 votes

N=Ideas generated

K=Connections in the map

R=Ideas in the map

The **Erroneous Priorities Effect** (EPE) refers to the fact that individual preferences may be "erroneous" if individuals vote for the most important ideas relevant to the problem situation prior to a relational inquiry among the ideas during the structuring phase of SDD. During SDD some of the ideas may collectively be judged to not be the most influential (and Conaway 1999). The EPE is demonstrated by comparing the cumulative influence of the most influential ideas with the influence of ideas that received most votes.

Results

The results stem from three Co-Laboratories (vision, obstacles, actions) with synchronous face-to-face and asynchronous virtual interactions (Laouris et al 2007), which took place between 17 May and 15 October 2007. The sequence of events, their purposes, length of time invested in each event, as well as the type of communication (synchronous/face-to-face or asynchronous/virtual) used is documented in Appendix 1. The whole process was conducted during 15.5 hours, spread over 2 ½ months, with 11 hours of three face-to-face events. The total

person-hours invested exceeded 325 hours. The following subsections report separately each Co-Laboratory.

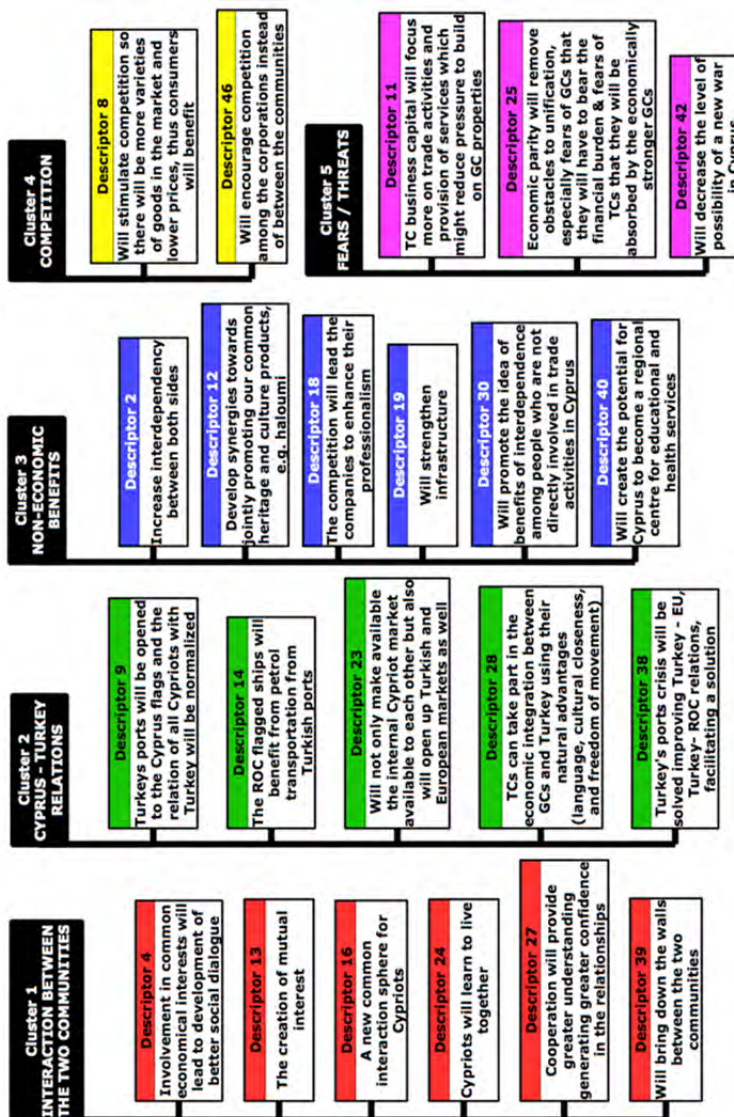
Vision Co-Laboratory

The first Co-Laboratory was dedicated to jointly visualizing and describing a future, ideal, desired situation with respect to economic integration and free movement of goods and services within Cyprus and the EU. The participants identified 47 descriptors in response to the TQ: “With the aim of economic integration, what are the benefits (opportunities) for Cyprus of the free movement of goods and services within Cyprus and the EU?” They spent two hours clarifying their proposals. These clarifications, however, are not provided in this paper; only the “headings” of the participants’ descriptors have been listed.

After the first Co-Laboratory session, members of the DDT clustered the 47 descriptors into 10 categories based on common attributes among the descriptors. The clusters covered not only economic issues, but also more general topics (Figure 6). Following this phase, the clusters were sent to all participants via email, and participants were requested to study and choose their favorite five. Thus, 29 of the 47 descriptors, proposed as potential benefits and opportunities for Cyprus of the free movement of goods and services, received one or more votes by all participants during the voting phase (Table 1). The ST was 57%, that is, the level of disagreement among the participants is higher than the expected average of 40% (Warfield 1995). Despite the rather high level of disagreement concerning descriptors of economic integration in general, there appears to be significant agreement regarding the three most voted descriptors, #4, #27, and #25. Of the 17 participants, 41% voted for #4, 35% voted for #27, and 29% voted for #25. However, the EPE demonstrates that following a collective consideration of the influences that one descriptor exerts on another, the participants change their minds regarding the importance of each descriptor (Dye and Conaway 1999).

Time constraints did not allow the participants to complete the process of examining descriptors’ influences on each other. Therefore, no influence tree was produced. This Co-Laboratory

mainly served to establish a common framework of thinking, by helping the participants transcend their thinking into the future, and therefore prepare them for the next two phases.



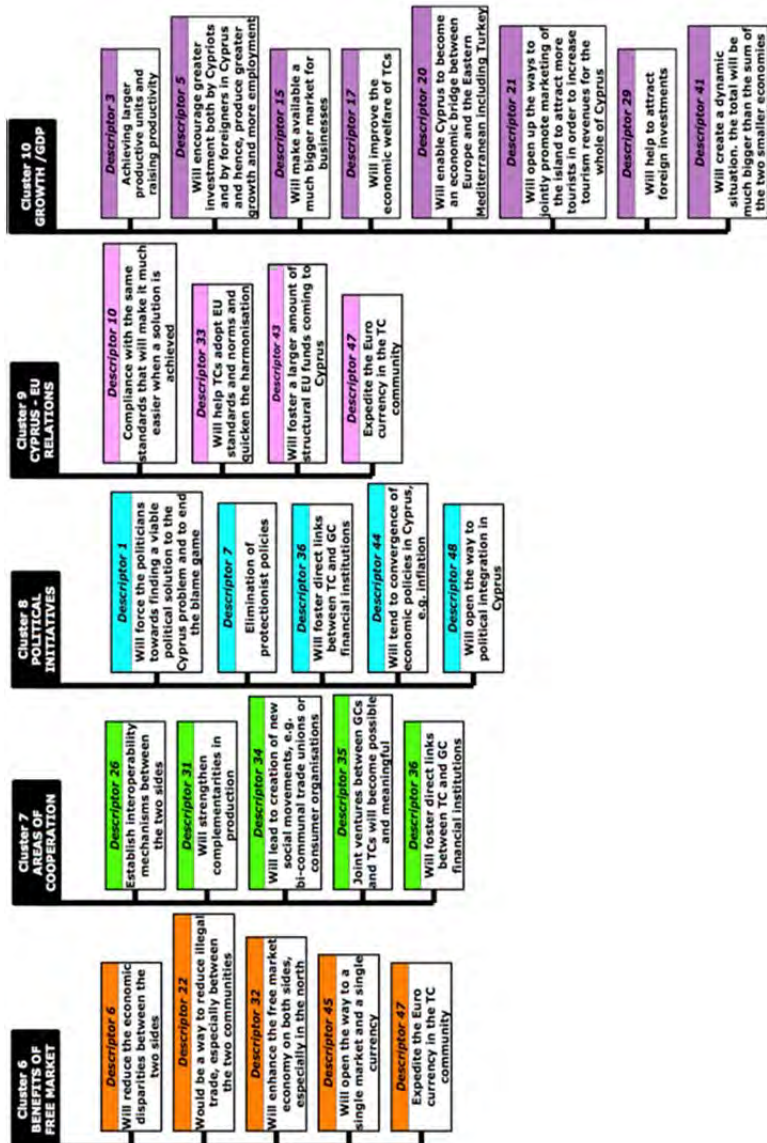


Figure 6. Categorization of 47 descriptors of the Vision Co-Laboratory into 10 clusters.

#	Votes	Benefits/Opportunities
4	7	Involvement in common economic interests will lead to development of better social dialogue
27	6	Cooperation will provide greater understanding, generating greater confidence in relationships
25	5	Economic parity will remove obstacles to unification, especially fears of GCs that they will have to bear the financial burden & fears of TCs that they will be absorbed by the economically stronger GCs
20	4	Will enable Cyprus to become an economic bridge between Europe and the Eastern Mediterranean including Turkey
6	3	Will reduce the economic disparities between the two sides
28	3	TCs can take part in the economic integration between GCs and Turkey using their natural advantages (language, cultural closeness & freedom of movement)
2	2	Increase interdependency between both sides
8	2	Will stimulate competition so there will be more varieties of goods in the market and lower prices, thus consumers will benefit
9	2	Turkey's ports will be opened to Cyprus flags and the relations of all Cypriots with Turkey will be normalized
10	2	Compliance with the same standards that will make it much easier when a solution is achieved
16	2	A new common interaction sphere for Cypriots
17	2	Will improve the economic welfare of TCs
23	2	Will not only make the internal Cypriot market available to Turkey, but will also open up Turkish and other European markets
24	2	Cypriots will learn to live together
32	2	Will enhance the free market economy on both sides, especially in the north
34	2	Will lead to creation of new social movements, e.g. bi-communal trade unions or consumer organizations
3	1	Achieving larger productive units and raising productivity
5	1	Will encourage greater investment both by Cypriots and by foreigners in Cyprus and hence, produce greater growth and more employment
11	1	TC business capital will focus more on trade activities and provision of services which might reduce pressure to build on GC properties
12	1	Develop synergies towards jointly promoting our common heritage and culture products, e.g. haloumi
18	1	The competition will lead the companies to enhance their professionalism
22	1	Would be a way to reduce illegal trade, especially between the two communities
26	1	Establish interoperability mechanisms between the two sides
29	1	Will help to attract foreign investments
31	1	Will strengthen complementarities in production
35	1	Joint ventures between GCs and TCs will become possible and meaningful
38	1	Will bring down the walls between the two communities
41	1	Will decrease the level of possibility of a new war in Cyprus
43	1	Will tend to convergence economic policies in Cyprus, e.g. inflation

Table 1. List of 29 descriptors of the Vision Co-Laboratory that received ≥ 1 votes. A few syntactical errors of the original statements have been corrected to improve readability.

Obstacles Co-Laboratory

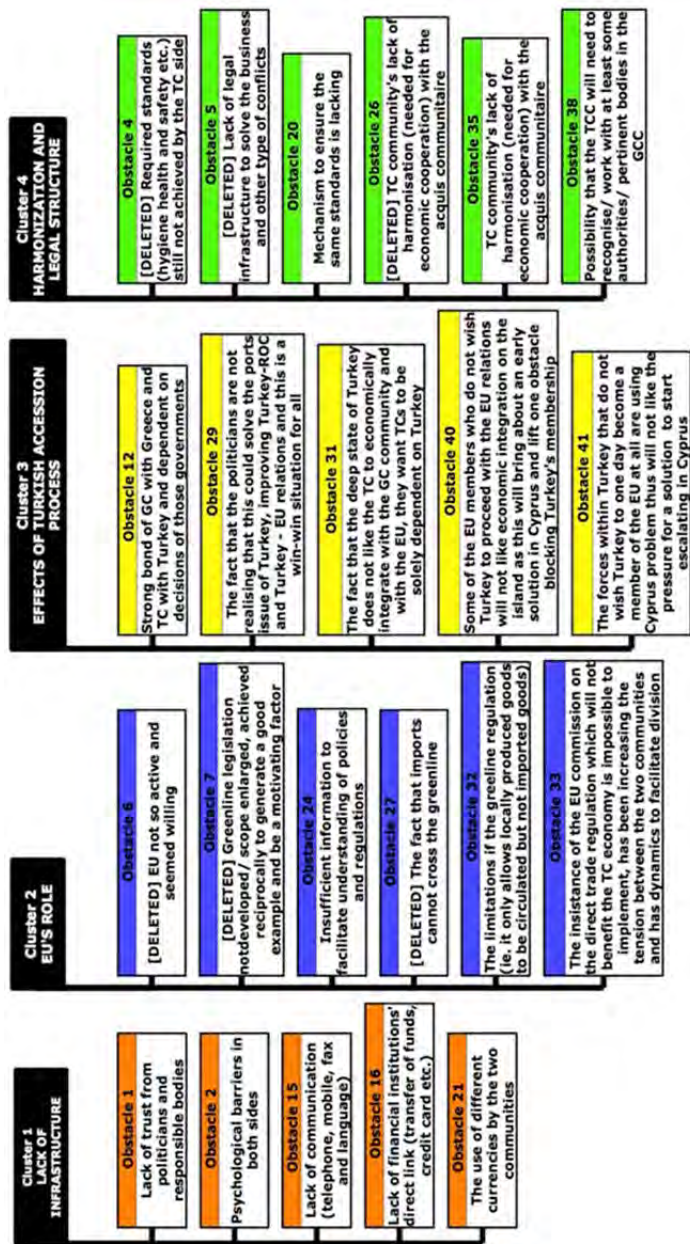
The second Co-Laboratory aimed at identifying the obstacles and perceived threats in the current situation, which would hamper the achievement of the envisioned economic integration and free movement of goods and services within Cyprus and the EU.

Via both virtual and face-to-face encounters, the stakeholder representatives identified 60 of these obstacles and perceived threats while responding to the following TQ: "With the aim of economic integration, what are the obstacles including perceived threats in achieving the free movement of goods and services within Cyprus and the EU?" In this case, 31 of the 60 factors received one or more votes (Table 2). The participants spent two hours clarifying their factors during the face-to-face meeting.

After the physical meeting, members of the DDT clustered the 60 factors into 11 categories, based on common attributes among the factors identified by the stakeholder representatives. The clusters covered a wide range of topics, including economic, political, and even psychological issues (Figure 7). The participants voted for their five most important factors. The voting results were used to select obstacles/perceived threats for the subsequent structuring phase, in order to identify interrelations among the generated factors. In the optimal case, all factors receiving votes must be structured. With 31 of 60 factors receiving votes, ST was 47%. Nevertheless, in this case too, there seems to be a significant level of agreement regarding the three obstacles that received the most votes, that is, #35, #45, and #31. Obstacles #35 and #45 got 36% votes each. However, it is unclear whether the same five participants or ten different participants voted for these two obstacles. The third obstacle, #31, got 29% of the votes. In sum, approximately a third of the economists and business experts who participated in the Obstacles Co-Laboratory agreed upon the most important obstacles and perceived threats of the current situation of economic integration within Cyprus. Referring to EPE, it is again worthwhile to mention possible changes of participants' perceptions related to the importance of obstacles after collaborative exploration.

#	Votes	Obstacles/Perceived Threats
35	5	TC community's lack of harmonization (needed for economic cooperation) with the <i>acquis communautaire</i>
45	5	Lack of economic desperation thus lack of motivation on the GC side to handle the burden of the TC economy on the way to greater benefits of a solution in the future
31	4	The fact that the deep state of Turkey does not like the TC to economically integrate with the GC community and with the EU, they want TCs to be solely dependent on Turkey
1	3	Lack of trust from politicians and responsible bodies
2	3	Psychological barriers on both sides
30	3	Unless the issue of points of entry in north Cyprus is solved without triggering recognition issue, free movement of goods cannot be achieved
32	3	The limitations of the Green Line regulation (i.e. it only allows locally produced goods to be circulated but not imported goods)
42	3	Most of the political elite in both communities, who do not know how to survive without the Cyprus problem, will try to block the way for economic integration so that a long-term solution cannot be found
48	3	Turkey will not accept surrendering the control of ports to the EU, since this would hamper the movement of the Turkish army
12	2	Strong bond of GC with Greece and TC with Turkey and dependence on decisions of those governments
15	2	Lack of communication (telephone, mobile, fax and language)
16	2	Lack of financial institutions' direct link (transfer of funds, credit card etc.)
19	2	Absence of a political settlement
24	2	Insufficient information to facilitate understanding of policies and regulations
33	2	The direct trade regulation, which the EU Commission insists on, will not benefit the TC economy and is impossible to implement. This regulation has been increasing the tension between the two communities and has the potential to facilitate division.
40	2	Some of the EU members who do not wish Turkey to proceed with the EU relations will not like economic integration on the island as this will bring about an early solution in Cyprus and lift one obstacle blocking Turkey's membership
43	2	Fear of being economically absorbed by the richer GC economy on the TC side
56	2	The discouraging approach of the GOC toward the trade from the north
5	1	Lack of legal infrastructure to solve business and other types of conflicts
14	1	Lack of trust between the two sides
21	1	The use of different currencies by the two communities
25	1	Lack of promotion by political leadership of both GC and TC
28	1	The problem of political recognition and international trade
29	1	The fact that politicians are not realizing that this could solve the ports issue of Turkey, improving Turkey-ROC and Turkey - EU relations and this is a win-win situation for all
39	1	People in Cyprus, who reap economic benefits from the status quo, will create obstacles
41	1	Forces within Turkey that do not wish Turkey to one day become a member of the EU are using the Cyprus problem; will not like pressure for solution to start escalating in Cyprus
44	1	Lack of many pioneers to lead the integration amongst the communities due to the fear of being excluded in their own communities
50	1	The TC leadership may refuse to allow EU supervision of ports because they remain loyal to the thesis that these ports should be 'under the control of TRNC custom authorities'
51	1	The problem of GC properties in the north, and how these will be economically utilized within the context of a free trade area, remains unresolved
54	1	Reluctance of GCs to accept TCs as their business partners due to lack of any motivation
55	1	The lack of trust between the two communities

Table 2. List of 31 Obstacles that received ≥1 votes. A few syntactical errors of the original statements have been corrected to improve readability.



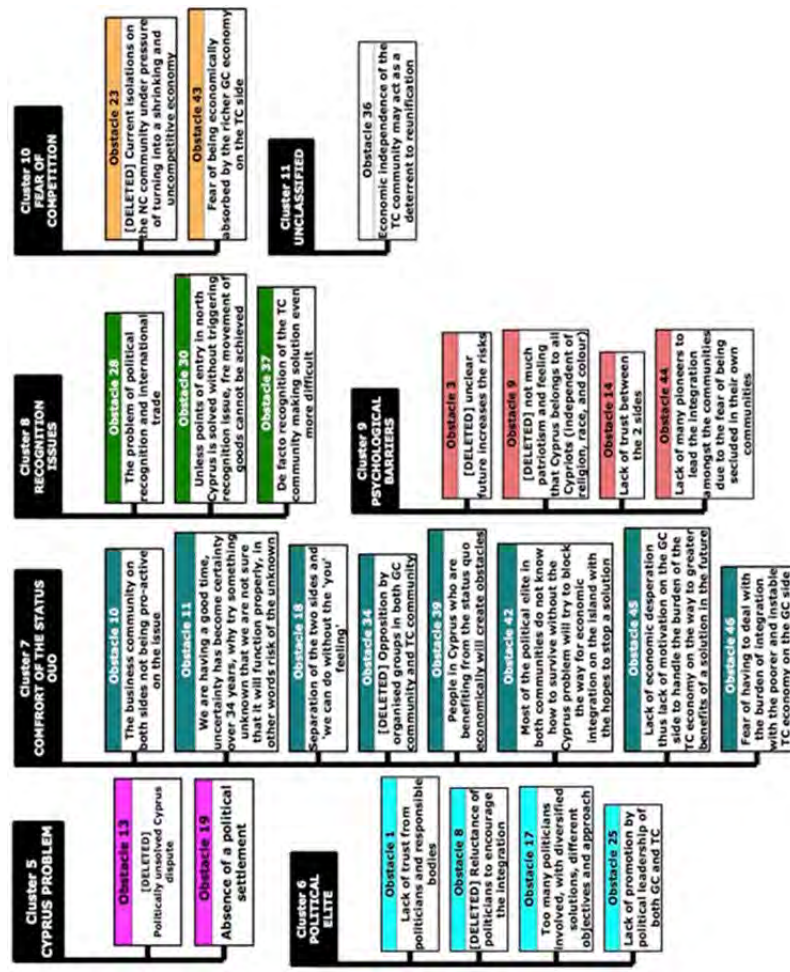


Figure 7. Categorization of 60 Obstacles into 11 clusters

The term “DELETED” in the boxes denotes that its author decided that it was not relevant, because its content was covered in another stakeholder’s idea. Occasionally, two authors combined their ideas into one, and the other is marked as *deleted*.

During the synchronous face-to-face structuring phase, the experts structured almost all obstacles that received ≥ 2 votes; specifically,

16 factors within six layers, into the root cause map (Figure 8). The SCI was 8.89.

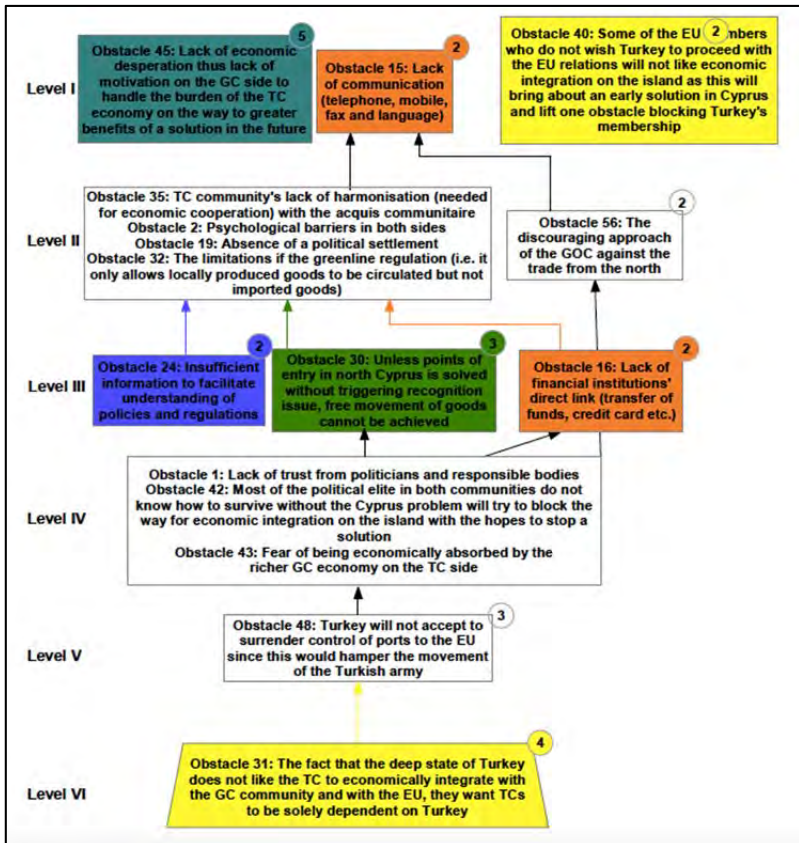


Figure 8. Root cause map of the Obstacles Co-Laboratory

The map contains 16 factors structured in six layers. Obstacle #31 appears to be the most influential, i.e., the root obstacle, as it is located at the root of the tree.

Obstacles that are in cycle in the same box mutually influence each other.

The number of votes each obstacle received is provided in order to illustrate the EPE, which predicts that ideas receiving more votes

do not always end up at the root of the tree (Dye 1999; Dye and Conaway 1999).

Action Co-Laboratory

During the final Co-Laboratory, the participants proposed actions to achieve economic integration. These actions would overcome the previously identified obstacles and perceived threats, so as to reach the desired situation. A smaller group of representative stakeholders responded to the following TQ and proposed 27 actions (Table 3): “With the aim of economic integration, what actions should be taken to overcome the obstacles and to reap the benefits in achieving the free movement of goods and services?”

#	Votes	Benefits/Opportunities
4	7	Involvement in common economic interests will lead to development of better social dialogue
27	6	Cooperation will provide greater understanding, generating greater confidence in relationships
25	5	Economic parity will remove obstacles to unification, especially fears of GCs that they will have to bear the financial burden & fears of TCs that they will be absorbed by the economically stronger GCs
20	4	Will enable Cyprus to become an economic bridge between Europe and the Eastern Mediterranean including Turkey
6	3	Will reduce the economic disparities between the two sides
28	3	TCs can take part in the economic integration between GCs and Turkey using their natural advantages (language, cultural closeness & freedom of movement)
2	2	Increase interdependency between both sides
8	2	Will stimulate competition so there will be more varieties of goods in the market and lower prices, thus consumers will benefit
9	2	Turkey's ports will be opened to Cyprus flags and the relations of all Cypriots with Turkey will be normalized
10	2	Compliance with the same standards that will make it much easier when a solution is achieved
16	2	A new common interaction sphere for Cypriots
17	2	Will improve the economic welfare of TCs
23	2	Will not only make the internal Cypriot market available to Turkey, but will also open up Turkish and other European markets
24	2	Cypriots will learn to live together
32	2	Will enhance the free market economy on both sides, especially in the north
34	2	Will lead to creation of new social movements, e.g. bi-communal trade unions or consumer organizations
3	1	Achieving larger productive units and raising productivity
5	1	Will encourage greater investment both by Cypriots and by foreigners in Cyprus and hence, produce greater growth and more employment
11	1	TC business capital will focus more on trade activities and provision of services which might reduce pressure to build on GC properties
12	1	Develop synergies towards jointly promoting our common heritage and culture products, e.g. haloumi
18	1	The competition will lead the companies to enhance their professionalism
22	1	Would be a way to reduce illegal trade, especially between the two communities
26	1	Establish interoperability mechanisms between the two sides
29	1	Will help to attract foreign investments
31	1	Will strengthen complementarities in production
35	1	Joint ventures between GCs and TCs will become possible and meaningful
38	1	Will bring down the walls between the two communities
41	1	Will decrease the level of possibility of a new war in Cyprus
43	1	Will tend to convergence economic policies in Cyprus, e.g. inflation

Table 3. Documentation of 27 actions. A few syntactical errors of the original statements have been corrected to improve readability

After the Co-Laboratory, members of the DDT clustered the 27 actions into 4 categories that cover action areas toward Turkey, the EU/UN, local leaders, and businesspeople (Figure 9).

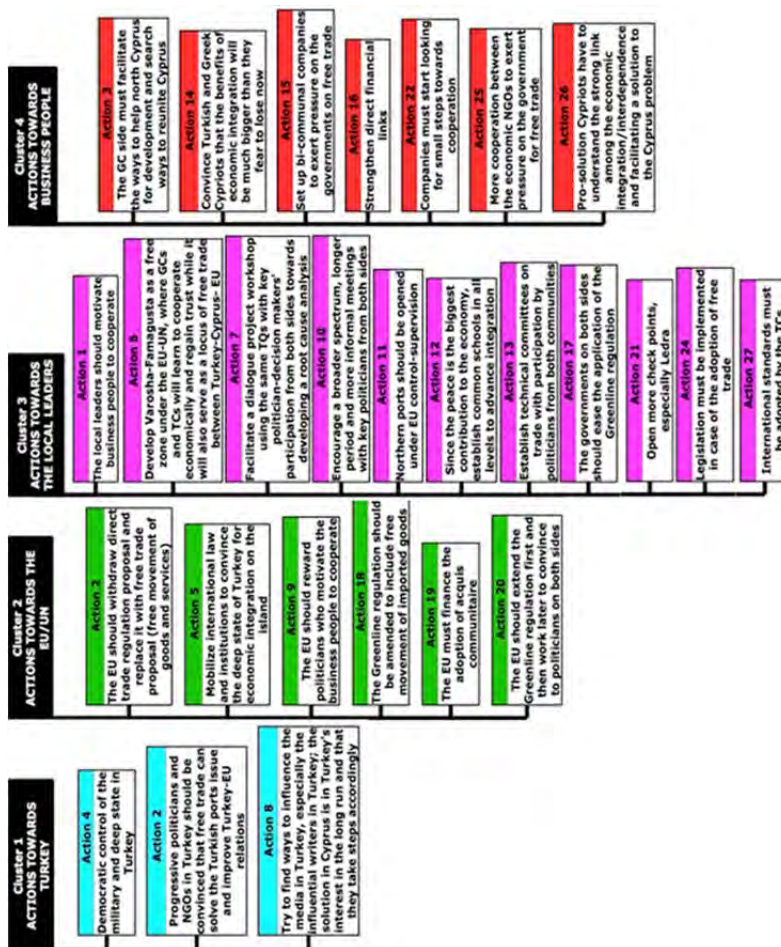


Figure 9. Categorization of 27 actions into 4 clusters

During a follow-up meeting, eight committed stakeholder representatives outlined projects based on the proposed actions: One project idea focused on action #4, “Democratic control of the military and deep state in Turkey.” The aim is to persuade the EU to actively and directly pursue the control of the military by a democratic process in the EU accession negotiations. This could be achieved by placing the military under the ministry of defence,

conducting in-depth research, and collecting information on the democratic control of the military, and lobbying within the EU with the respective research results. Another project tackled action #8, “Try to find ways to influence the media in Turkey, especially the influential writers in Turkey; the solution in Cyprus is in Turkey’s interest in the long run, and that they take steps accordingly.”

Discussion

Vision Co-Laboratory

The participants were engaged in this first dialogue with the aim to bring them to a point where they were ready to trust each other and speak openly. A possible weakness might be that this Co-Laboratory was not fully implemented, because the participants did not create a map of influences encompassing their various “visions” of an ideal future situation. Besides overall time constraints, the mapping phase was skipped mainly because the individuals were selected to participate based on the criterion that they share the vision of a united economy in Cyprus.

Reflecting on the Breadth and Depth of Descriptors

The participants came up with 47 descriptors that portray the ideal economic situation in Cyprus. The number is relatively low, compared to analogous Co-Laboratories for similar dialogues that took place in 1995, 2006, and 2007 (see Laouris et al 2009 for a detailed comparison). However, the Co-Laboratory discussed here is the only vision Co-Laboratory, whereas the previous were either obstacles or action Co-Laboratories. Therefore, the results either seem to confirm that the participants of this Co-Laboratory did already share a common vision beforehand, as assumed by the authors. Alternatively, the results indicate that stakeholders of a specific problem in general identify more obstacles and/or solutions than visions.

The descriptors were clustered into 10 categories. These categories covered topics not only related to the economy, such as competition, benefits of free market, areas of cooperation, and

growth/GDP, but also topics related to the Cyprus issue in general, such as interaction between the two communities, Cyprus-Turkey relations, Cyprus-EU relations, political initiatives, non-economic benefits, and fears/threats. The number of categories generated is similar to the number generated in previous similar Cyprus-related Co-Laboratories, which had 10, 9, 20, and 13 categories respectively (for detailed comparisons, refer to Laouris et al 2009).

Reflecting on the Participants' Level of Agreement

With an ST of 57%, the level of disagreement among participants is rather high, especially when one considers that the participants should have had similar political views owing to their selection based on the criterion of being pro-solution. Hence, the participants' views on the economic vision of Cyprus are widely divergent. As compared to previous SDD bi-communal Co-Laboratories, the results suggest that the level of disagreement among Cypriots regarding an understanding of the future aspects of the Cyprus issue has not been reduced. On the contrary, it remains high or tends to increase, which demonstrates that the gap between the two communities is not closing, but is expanding. For example, bi-communal groups engaged in structured democratic dialogues about options to peace building in 1995 came up with an ST equal to 29.8% for GCs and 28% for TCs. The two recent bi-communal SDD Co-Laboratories, "Peace Process Revival" in 2006 and "Options to Dialogue" in 2007, had an ST 47% and 50%, respectively (Laouris et al 2009a; Laouris et al 2009b). The results of the Co-Laboratory reported here are thus in line with previous findings in the context of the "Civil Society Dialogue" project (Laouris et al 2009a, p. 56).

Overall, the authors believe that the first phase of the project served its purpose of aligning visions and goals in the minds of the participants and of preparing them to discuss the *problématique*.

Obstacles Co-Laboratory

The second Co-Laboratory focused on the obstacles currently impeding the translation of the participants' vision into reality. In

line with the SDD application, the participants identified all obstructions, categorized these according to their common attributes, individually chose the five subjectively most important obstacles, and collectively investigated the influences that the obstructions exert on each other. In other words, the Obstacles Co-Laboratory implemented all phases of the SDD methodology.

Reflecting on the Breadth and Depth of Obstacles

During the first phase, the participants came up with 60 factors as barriers to the previously identified vision. As compared to analogous Co-Laboratories on the Cyprus issue, the number of factors is similar. For example, in two comparable Co-Laboratories that took place separately for the two communities of Cyprus in 1994 with a similar TQ and a similar composition of participants, the number of obstacles generated was 67 for GCs and 87 for TCs (Laouris et al 2009a). During a third Co-Laboratory in 2006 on “factors contributing to the perceived widening gap between the two divided communities in Cyprus” (Laouris et al 2009a, p. 45), peace pioneers and activists from both communities identified 120 obstacles in all. It seems rational that more obstacles were identified when focusing on the Cyprus issue as a whole, rather than focusing on a specific sub-topic such as the economic situation. The average number of obstacles adequately describing a social complex problem is 64 (Warfield 1988, 2009). Thus, the number of obstacles generated in this Co-Laboratory is considered as average.

The obstacles were clustered into 11 categories. The categories covered a wide range of topics from economic (e.g., lack of infrastructure, fear of competition, harmonization, and legal structure), political (e.g., EU’s role, effects of the Turkish accession process, the Cyprus problem, political elite, and recognition issues), and psychological issues (e.g., comfort of the status quo, psychological barriers), all of which are obstacles to economic integration. The number of clusters is also comparable to the number of clusters generated in the two similar Co-Laboratories in 1994, where GCs categorized their factors into 10 clusters whereas

TCs categorized their factors into 9 clusters (for detailed comparisons, refer to Laouris et al 2009a/b).

Co-Laboratory	Year	N no. of factors generated	No. of clusters	V no. of factors with >1 votes	R no. of factors structured	No. of Levels in map	SCI	ST (%)
Barriers to peace-building efforts (GCs)	1994	67	10	n/a	22	7	4.1	27.4
Barriers to peace-building efforts (TCs)	1994	87	9	n/a	36	6	9.3	37.8
Peace Process Revival	2006	120	20	47	20	7	17.5	47
Obstacles to Economic Integration	2007	60	11	31	16	6	8.89	47

Table 4. Comparison of scientific descriptors of different Obstacles Co-Laboratories related to the Cyprus issue

Reflecting on the Participants' Level of Agreement

With a Spreadthink (ST) of 47%, the level of participants' disagreement was slightly higher than the expected average of 40% (Warfield 1995). In Warfield's words, the participants' views of the *problématique* of Cyprus' economic integration are "spread all over the map" (Warfield 1995, p. 5). It is interesting that in analogous SDD settings in 1994, the ST was much lower with 27.4% and 37.8% for GCs and TCs, respectively (Table 4: Laouris et al 2009). For the "Peace Process Revival" Co-Laboratory in 2006, the ST was also 47% (Table 4: Laouris et al 2009). Thus, 20 years earlier, agreement among participants was much higher for both communities. The fact that the ST of the more current Co-Laboratories (both this and the one in 2006) is higher than of similar Co-Laboratories in 1994 should alarm us. Nowadays, the participants have a greater degree of disagreement than in the past. This is especially worrying if one also takes into account that the participants of the Co-Laboratory described here were a relatively homogeneous group of business experts and economists.

Reflecting on Complexity and Erroneous Priority Effect

With a Situational Complexity Index (SCI) of 8.89, the complexity degree of the problem as perceived by the participants is comparable to previous Co-Laboratories; the SCI in 1994 was 4.1 for GCs and 9.3 for TCs (Table 4). Therefore, SCI seems not to have changed since 1994; that is, stakeholders' perception of the complexity of the Cyprus issue and its related aspects has neither decreased nor increased over time.

During the voting phase, two obstacles received the most votes with five votes each: obstacles #35 and #45 (Table 4). That means that the participants individually perceived these two obstacles as the most relevant to the problem, before they collectively inquired on the relations between the obstacles. During the structuring phase, these two obstacles, however, ended up in the top two layers (Level I and Level II) of the root cause map (Figure 7). That means the participants collectively judged these two obstacles to not be the most important or influential. This is a typical demonstration of EPE (Dye and Conaway 1999). If the participants were to collectively agree on a root cause map based on the number of votes the obstacles received before the structuring phase, they would have chosen obstacles #35 and #45 as the root-cause drivers, which would have then ended up in the bottom layer of the map. Yet, the participants collectively decided that the obstacles #31 and #48 with four and three votes, respectively, were the most influential.

The Root Cause Map

As a result of the structuring phase, the root cause map illustrates not only various influential levels, but also the influences that the obstacles exert on each other. The obstacles are thus related to each other according to their direction of influence. Those obstacles that appear lower in the root cause map, and are hence positioned at the root of the tree, that is, Level VI, are the most influential in terms of the power to bring about change than those at higher levels, and are the ones to tackle preferentially.

Root Causes and Influences

The dominating root cause in the deepest Level VI that influences most of the other obstacles structured is:

Obstacle #31 "The fact that the deep state of Turkey does not like the TC to economically integrate with the GC community and with the EU; they want TCs to be solely dependent on Turkey"

Level V is also dominated by only one obstacle:

Obstacle #48: "Turkey will not accept surrendering the control of ports to the EU, since this would hamper the movement of the Turkish army"

Level IV is rich with obstacles:

Obstacle #1: "Lack of trust from politicians and responsible bodies"

Obstacle #42: "Most of the political elite in both communities, who do not know how to survive without the Cyprus problem, will try to block the way for economic integration on the island so that a long-term solution cannot be found"

Obstacle #43: "Fear of being economically absorbed by the richer GC economy on the TC side"

At Level III, one obstacle is not "connected" to any other obstacles in the map, that is, this particular obstacle is not being influenced by, nor is it influencing other obstacles. If the participants were given more time to structure the map, it is most likely that interrelations and influences of this unconnected obstacle to others were discovered.

Obstacle #24: "Insufficient information to facilitate understanding of policies and regulations"

Reflecting on the Obstacles at the Top Level

Obstacles at the top of the root cause tree are usually obviously important, but less influential. In total, three obstacles made it to the top level, of which two remained unconnected.

Obstacle #15: "Lack of communication (telephone, mobile, fax and language)"

Obstacle #40: "Some of the EU members who do not wish Turkey to proceed with the EU relations will not like economic

integration on the island as this will bring about an early solution in Cyprus and lift one obstacle blocking Turkey's membership"

Obstacle #45: "Lack of economic desperation, thus lack of motivation, on the GC side to handle the burden of the TC economy on the way to greater benefits of a solution in the future"

During the voting phase, obstacle #45 ranked first, along with another obstacle, in terms of number of votes received; five votes (Table 2). Although this obstacle received the most votes, it turned out not to be the most influential when collectively judged during the structuring phase. This fact demonstrates the EPE.

Actions Co-Laboratory

The participants collected 27 action options that might help overcome the *problématique*. The number is lower than the number of identified vision descriptors and obstacles reported above. It is also much lower compared to the analogous Co-Laboratory, "Options to Dialogue" of 2007, where 83 actions were generated (Laouris et al 2009). Similar to the results of the Co-Laboratory series of 2006 and 2007, it seems that stakeholders are able to identify more obstacles than solutions. This interpretation does not apply to the Co-Laboratory series in 1994–1995, where both GCs and TCs separately generated more action options than obstacles (Table 5).

Co-Laboratory	Year	N no. of factors generated	No. of clusters	V no. of factors with >1 votes	R no. of factors structured	No. of Levels in map	SCI	ST (%)
Options to peace-building (GCs)	1995	72	10	25	25	9	7.11	30
Options to peace-building (TCs)	1995	101	9	36	36	11	10.6	28
Options to Dialogue	2007	83	13	44	27	7	10.88	50
Options to Economic Integration	2007	27	4	---	---	---	---	---

Table 5. Comparison of scientific descriptors of different Action Co-Laboratories related to the Cyprus issue

The solutions were clustered into 4 categories. These covered a wide spectrum of topics from very specific to rather general: business experts, local leaders, Turkey, the EU, and the UN. In comparison to the other categories, the category targeting local leaders contains by far the highest number of generated actions. The number of categories generated is also lower as compared to the number of created categories in the other Co-Laboratories on economic integration, as well as compared to the “Options to Dialogue” Co-Laboratory (Table 5; Laouris et al 2009). The lower number is not surprising, because a lower number of generated ideas will most likely be clustered into fewer categories.

An effective and realistic action plan needs to first deal with the identified root causes of the root cause map in order to reach the desired situation, that is, the idealized vision. With the assistance of SDD, economists and business experts have mutually agreed that the main cause preventing the two communities reaching the idealized vision is obstacle #31: “The fact that the deep state of Turkey does not wish the TC to economically integrate with the GC community and with the EU; they want TCs to be solely dependent on Turkey” (Figure 8). Here, within the methodology’s limits and with careful assessment, one can choose to tradeoff between the most yielding and the most influential factor to be tackled. It is argued that obstacle #31 is rather difficult to tackle with the available tools. This is not at all surprising, because this root obstacle is an external factor. Nevertheless, during a follow-up meeting to the action Co-Laboratory, stakeholder representatives drafted several projects that focus on the external factor, Turkey, as described in paragraph 3.3.

Overall, the authors believe that this last phase of the project served as a starting point for actual change toward economic integration in Cyprus by putting the proposed projects into practice.

The Road Ahead

Fresh hopes for unity on the island were evolving following the election of Demetris Christofias as new President of the Republic

of Cyprus (February 24, 2008); the re-opening of Ledra Street/Lokmacı crossing in the heart of old Nicosia on April 3, 2008; as well as the beginning of peace talks between the Mr. Christofias and TC leader Mehmet Ali Talat (BBC News 2008; Christou 2008a, 2008b; Hughes 2008; International Herald Tribune 2008; Morgan 2008). Unfortunately, by the time this paper was prepared, the five-year Christofias presidency had passed without any tangible progress. On the contrary, the division has been consolidated further and nationalism on both sides has increased. The recent election of Mr. Nicos Anastasiades (28/2/2013), leader of DISY party who actively supported a solution, in connection with the recent election of Mr. Mustafa Akıncı (19/4/2015) might offer new opportunities.

Since 2007, when the project was implemented, both civil society and international bodies have made progress in addressing some root causes: (1) Establishment of the Cyprus Community Media Centre (2009), the Cyprus Island-wide NGO Development Platform (2009) and Youth Power (2009) as joint ventures between NGOs from both sides of the Green Line created ample opportunities for cooperation; (2) Two new funding schemes for bi-communal projects, one by Stelios Hadjioannou (Stelios Award for Business Co-operation in Cyprus 2011), and the other by the EEA Grants and Norway Grants (2004), offer prospects for practical partnerships; (3) The Jumpstart the Peace (2011) program (analogous to the one documented in this paper) and the fact that Cypriot peace builders implement peace projects in the Middle East (Civil Society Acts Beyond Borders 2009) create the space for engagement of civil society and for the refinement of methodologies developed over the past two decades.

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Appendix 1 - Calendar of milestones

Date	Event	Details about event	Time (min)	Type
3 July 2007	Generation & clarification of descriptors	17 economists and business experts contributed 47 descriptors.	180	f-2-f
4 July 2007	Clustering	Members of the KMT who are considered knowledgeable of the situation met to cluster the descriptors into categories and name these categories. They clustered the 47 descriptors into 10 categories.	90	f-2-f
9 July 2007	Voting request	The table with all 47 descriptors as well as the cluster with its 10 categories was sent to all participants. They were requested to study and choose their favorite five descriptors. Their voting was to arrive by 9 July 2007.	10	Virtual
9 July 2007	Recording of voting results	One member of the facilitation team entered the votes in the Cogniscope™ software and prepared a table with the voting results that was sent to all participants.	10	N/A
10 July 2007	Generation of obstacles	22 economists and business experts received the triggering question for the second co-laboratory 'current situation'. They were requested to send their responses to the triggering question by July 10 2007 noontime.	10	Virtual
10 July 2007	Recording of obstacles	One member of the facilitation team entered the obstacles generated and sent these via email to the participants.	60	N/A
10 July 2007	Clarification and adding of obstacles	14 economists and business experts contributed 60 obstacles that were clarified by the authors. The participants individually voted their five most important obstacles. The voting results were entered in Cogniscope™.	120	f-2-f
14 July 2007	Clustering	Members of the KMT who are knowledgeable of the Cypriot economic situation met to cluster the obstacles into categories and name these categories. They clustered the 60 obstacles into 11 categories.	90	f-2-f
17 July 2007	Structuring	8 economists and business experts went through the structuring phase to identify the inter-relations among the obstacles generated; they created the root cause map.	90	f-2-f
17 July 2007	Generation and clarification of actions	The same 8 economists and business experts generated and clarified possible actions that can be taken to overcome the obstacles in order to reach the desired situation.	90	Face-to-face
10 July 2007	Clustering	Members of the KMT who are considered knowledgeable of the situation met to cluster the actions into categories and name these categories. They clustered the 27 actions into 4 categories.	60	Face-to-face
15 Oct 2007	Designing projects	6 economists and business experts met to start designing projects related to economic integration.	120	Face-to-face

Events related to the vision co-laboratory
 Events related to the obstacles co-laboratory
 Events related to the actions co-laboratory

Table 6 Calendar of important milestones and events

Table 6 illustrates the sequence of events, the time invested in each, and the type of communication (synchronous/face-to-face or asynchronous/virtual). The entire process took 15.5 hours spread over 2.5 months. The total person-hours invested exceeded 325 hours. The last column indicates the type of communication, i.e., a mix of virtual and physical encounters with face-to-face meetings have been used.

Systemic Pedagogy: A Design for Action Researcher Collective Self Development

Ross Colliver, Susan Goff,
Riripeti Reedy and Vicki Vaartjes

Abstract

How do Action Researchers develop their practice? A new approach to conferencing – the Conference Intensive (CI)- was designed by a collaboration of Action Researchers to enable participants to inquire into their own and each others' participatory practices. The approach involves observing and learning with a peer Design Team of Action Researchers negotiating practice preferences within a real-world scenario made up from the participants' current research sites. Developed by CultureShift Pty Ltd, and delivered in partnership with the Action Learning Action Research Association, the Conference Intensive creates conditions for Action Researcher self-development that are secure and ambiguous, enabling practitioners to grow in their awareness and capacity to provoke change through their own self determined, professional development in the systems in which they work. This paper maps the conceptual terrain of the Intensive, and describes six "practices of a praxis" of Systemic Pedagogy, which the authors see as intrinsic to Action Research praxis and learning environments that underpin its development in any setting.

Key words

Systemic Pedagogy, Action Research, Conferencing, Self Determination, Methodology, Praxis

Introduction

Action Researchers ask questions about significant concerns in everyday organisational and public contexts. Through facilitating collaborative learning, they assist people to form the knowledge that informs actions with the intent to reduce the impact of those significant concerns. The process of inquiry itself develops the practices that not only constitute change; they also build awareness of the power and associated ethics, to do so. Ethics are essential in the reconfigurations of power, authority and agency that come with action. Action Researchers can emerge from any culture, discipline, occupational group or sector, but the settings in which they work rarely offer opportunities to develop Action Research practices. For most, the movement between action and reflection-on-action is a central reference point that defines our practice: reflection delivers insights and possibilities for more effective action which when pursued, generate new understandings, further questions and more nuanced action addressing the significant concerns. However, the movement between action and reflection does not yield its full potential until the Action Researcher develops the practices that make possible their “praxis” - the conscious use of their choice of theory in their actions. This understanding of Action Research praxis is consistent with key theorists in the field (for example, Freire, 1970; Reason and Torbert, 2001; Tierney et al 2008).

The Conference Intensive (2014) (CI) is a design for learning that provokes and nurtures these practices. It was developed for people and organisations that want to make change happen in their workplaces and across their partners’, beneficiaries’ and sponsors’ networks as essential elements of systemic transformation. Our concept of “Systemic Pedagogy” includes embodied, relational experiences of being in inquiry as inalienable from the living social and environmental systems that hold the inquiry. Our design for learning is purposefully multi-cultural, so that participants can take the culturally critically conscious embodiment of their experience as a living resource into the everyday situations in which they work and live.

In this paper, we describe the development of the CI, and review aspects of the literature that point toward a design for a praxis of “Systemic Pedagogy”. We use this term to describe the approach to learning that enables practitioners to become critically conscious of their theories in use (Argyris and Schon, 1974; Argyris, 1980). We are encouraging practitioners to develop their own forms of creating their praxis as a key element of Action Research expertise. We enter the body of that pedagogy through a First-person account, then describe six of the many practices of praxis developed in the CI program.

Development of the Conference Intensive

At the 2010 Action Learning Action Research World Congress in Melbourne, a team of Action Researchers presented an “Action Research Hypothetical”⁷. The idea emerged from a cross-cultural Action Researcher team facilitating a two-year Participatory Action Research project engaging with Aboriginal approaches to health promotion and early childhood education in Australia (CultureShift, 2011, The E-HPIC Project⁸). In the Hypothetical, participants observed differing theories of practice debated and enacted by a team of Action Researchers as they devised a research strategy for a hypothetical problematic situation. In 2014, this idea was taken further in the “Conference Intensive”, delivered in two separate, two-day events, in partnership with the Action Learning Action Research Association

The intention of the CI was to provide a setting where Action Researchers could think critically about methodology. We started from the assumption that pathways for change are shaped by the way situations are framed by local assumptions about relevant knowledge and knowledge making practices. This starting point is

⁷ The authors acknowledge Danny Burns, Roslyn von Senden, Katharin Bartley and Bob Dick who joined Ross Colliver, Susan Goff and Riripeti Reedy for this event.

⁸ Riripeti Reedy and Susan Goff were the Action Researchers in the project’s AR project team who developed the original hypothetical concept.

consistent with theorising regarding “situated knowledge” such as Standpoint Theory (Ryan, 2005), Situated Learning (Lave and Wenger, 1991), and Situated Knowledge (Griffin, 2009). Our proposition is that transformation in the nuts and bolts of Action Research design (and thus its impacts) is fuelled by making methodology evident, accessible and accountable to emerging forms of power within the living context in which Action Research practitioners are working.

Day 1 of the CI allowed participants to reflect on their practice as Action Researchers, articulate their theories, and collectively identify emerging understandings. In Day 2, participants observed a Design Team of three experienced AR practitioners draw on methodologies articulated in Day 1 to co-design Action Research interventions. The interventions were then implemented in an enacted scenario that was developed by the conference facilitators prior to the event from the participants’ own situations. The conference participants became participants in the enactment of those designs. At the conclusion of each of the three, hour-long cycles, the whole conference critically reflected on the design and the experiences of participation. The principle reflective question was: what did you notice?

The CI was held on the shores of Weereewa (Lake George) just north of Canberra, in a small residential conference facility. The location was Ngambri-Guumaal Nation Country, the site of one the world’s oldest ephemeral lakes and prior to colonisation, home to large populations of fish and birdlife. The presence of Country and history throughout the conference development and delivery was brought to participants’ consciousness through the leadership of Ngambri Elder Mingo Mortimer, who situated the event in the socio-ecological realities of that Country. Eighteen people attended the first event and fifteen the second. With regard to the authors of this paper, the Intensive was designed and facilitated by Susan Goff and Ross Colliver. Vicki Vaartjes attended as a participant in the first Intensive; and Riripeti Reedy participated in the Design Team in the second.

Approaches to design for our praxis of Systemic Pedagogy

Formal and informal professional learning in any institution is grounded in socio-ecological realities. Relationships in learning and coming to know cannot be limited to one ontological way of knowing: culture, history and ecology play powerfully into our practices whether we are conscious of this or not. Here we examine existing literature that discusses elements of a praxis of Systemic Pedagogy, to establish our theoretical understanding of the terms "Systemic Pedagogy", "praxis", and "design" within a critically systemic framework.

Systemic Pedagogy

Referring to Marxism as a founding philosophical basis for the concept, Ingraham (1996) proposes "Systemic Pedagogy" as a means for addressing sociological issues such as race as played out on American university campuses in the 1980's and 90's. His argument is that the classroom is not detached from the everyday lives of the students and teaching staff:

...the concept "systemic" implies a notion that all ideas or knowledges emanate from hierarchical social arrangements or systems. Systemic Pedagogy is the practice of disseminating or producing knowledges which engage with or make visible the interrelations among these systems which in turn comprise the social and material forces organizing ways of thinking and acting in the interests of the ruling social order. (Ingraham, 1996, p. 7)

Ingraham describes how starting learning in different locations and bringing multi-site issues and methodologies into the learning environment enables an encounter with different worldviews and experiences of power. Learning and its outcomes are directly embedded in the living systems of the so-called "real world".

More recently, Olvera uses the term "Systemic Pedagogy" to describe her approach to teaching in Mexican schools and universities:

Systemic Pedagogy is based on observing the wider context of the dynamics and implications that arise as a result of the interactions

between all the components of the educational system. (Olvera, on line)

Olvera's reflections are situated in educational institutions (schools and universities) in the context of Hellinger's approaches to family therapy (<http://www.hellinger.com>), in which a family inquires into its experience of being "in family" together, redressing the impacts of history that condition the relationships between the social, psychological and political elements of their life. For Hellinger, a healthy family holds within it essential principles or "orders of love" which if disturbed by history and not redressed, the disturbance will be repeated in future generations. Hellinger's "Constellations" approach has more recently been extended into facilitating systemic change in organisational and social systems. This approach seeks alignments in relationships to redress blockages and enable fluency through the multiple dimensions of intergenerational family and social life. Olvera's Systemic Pedagogy, framed in the context of Mexican socio-politics, takes into account intergenerational, transgenerational and intragenerational perspectives of how resilient these orders of love may be, to enable a healthy flow of relationships in the learning experience.

Such concepts of relationality are consistent with some Australian Indigenous ontologies, described in Bell (2010) as "relational epistemology". In response to the questions: "How do we know what we know? How do Nganyin know what they know?" Bell comments:

Here is a relational epistemology in which being and non-being are co-present sources and expressions of knowledge. In Ngarinyin ontology everything exists in relationship with everything else in a system or pattern of living they call wunan. Wunan is in and of the image of Wunggud, a system of 'radical relativity constituted by relationship, present in reality as relatedness'. (Bell, 2010, p.3)

Bell notes that from inside this ontology there is no distinction between dreaming, vision and observation. These ways of seeing are governed by the Law, which informs a person how to see the

country as “standing up” – alive and dynamic, how to sense it through the physical senses, note the patterns and cycles, and create the connections between things. Such ways of knowing generate sensitivities and intelligences that with discipline can be embodied in praxis emerging from non-Western ontologies. With its focus on relationships between elements that create a dynamic flow of learning in the world, linking being and non-being, dreaming, visioning and observation as one flow of experiencing the world, relational epistemology can be understood as a form of Systemic Pedagogy.

Collaborating in multi-cultural relationships, particularly where their cultural differences are understood as Indigenous and non-indigenous, can provoke self-awareness at an ontological scale of learning. Kincheloe and Steinberg (2008) argue that Indigenous knowledges that are present to Western ways of knowing bring ontological reflexivity to both/all ways of knowing, requiring a critical orientation to one’s own ways of knowing as well as those of others. Indigenous knowledges have transformational power, through:

... exploration of human consciousness, the nature of its production, and the process of its engagement with cultural difference. (Kincheloe and Steinberg, 2008, p.136)

Rather than producing a kind of impossible relativism, encountering different forms of knowledge production creates a rich, complex of understanding of self in relationship with many ways of seeing and being in the world. This understanding requires limitations to power in general, and power in the production and use of knowledge in particular, where the act of self-determination (determination of self) in relationship with others becomes a primary form of action.

"Critical multilogicality" (Kincheloe and Steinberg, 2008, p.138) calls on multiple forms of reasoning and synthesising, enabling repressed or marginalized knowledges to contribute to systems transformation through “new dimensions of meaning, new forms of logic” (ibid, p.140). Diversity of reasoning and synthesising is also valued in Mezirow’s theories of transformative learning

(Mezirow, 1991, 1997, 2000), which incorporate the philosophies of Kuhn (essentially, ontology), Freire (essentially, conscientisation) and Habermas (essentially, meaning making). Kitchenham (2008) usefully tracks the development of Mezirow's learning theories over thirty years to arrive at a concise representation of Mezirow's (2000) four forms of transformative learning:

Elaborating existing frames of reference

Learning new frames of reference

Transforming habits of mind

Transforming points of view. (Kitchenham, 2008, p. 120)

We see transformative learning as essential to enabling self-determination in systemic transformation. When new frames of reference, such as a very different cultural perspective, are encountered, habits of mind are disturbed, and the learner is able to appreciate a different standpoint, indeed multiple standpoints, which significantly increase creativity and opportunities for self-determination. This experience is also recognised as "mindfulness" in more contemporary leadership literature (for example: <http://www.mindfulnet.org>).

Approach to CI Design: facilitation through program presence

How then to design for learning and leadership that is alive to these inter-related, relational systems in which knowledge is created, and offers the safety and ambiguity that call out self-determination? Walker (2012) considers a practice of design that serves post-modern, post-consumptive society, where meaning is as important as "physical causes, practical benefits and rationalisations" (p.85). He sees a "design shift" in which values such as "purpose, virtue and compassion" (p.92) are incorporated into design and the artefacts it produces. For Walker, such a form of design operates in the space of "thresholds" that link the physical with the spiritual, the intangible with the tangible, the inherited with the present, the present with an inter-generational future. Creative processes allow for seeing and sensing inner and

outer worlds, and creating relationships amongst and between these worlds. Walker states that this approach requires “Slow Design”, working gently over time, with communion and gifting (Scruton, 2012, referring to Hegel) as core characteristics.

For Strauss and Fuad-Luke (2008), Slow Design seeks to expose taken-for-granted forms of production and their uses, and offers instead threshold moments for other, as yet undetermined meanings and uses to emerge from the design; they unfold over time and across multiple locations. Strauss and Fuad-Luke propose that Slow Design guides these emergent moments with six principles:

- Reveal (...that which is hidden, taken for granted and overlooked)
- Expand (...the intention of the design so that it serves purposes beyond that which is envisioned in its creation)
- Reflect (...include properties in the design that induce contemplation)
- Engage (...share the design long into the future for ongoing use, and diversity of uses)
- Participate (...invite people to engage in design in conviviality and social accountability in community)
- Evolve (...artefacts such as the CI are behavioural change agents in themselves and change with changing use).

The CI program design is intended to largely speak for itself. Current terminology for this approach to facilitation through program design is a “holding space” - rather than a pre-determined curriculum. The choice of program architecture and the aspect of space (what is not pre-determined) is the artistry of the design practice. These choices of program articulation and silence become the way Strauss and Fuad-Luke’s principle of “evolve” expresses itself. As a holding space, participants have the freedom to discover and work with their own forms of leadership, which can be distorted in social systems where power

relationships can damage people and their relationships. Slow Design's principles pay attention to providing the means by which participants encounter a program – in this case a learning environment founded in Systemic Pedagogy – so that they become aware of and use its elements, values and possibilities within their own time, and their own terms.

Praxis and the phenomenology of action

The concept of praxis draws on Greek philosophy, early socialism and later notions of critical thinking and emancipatory action. In all instances it involves reflecting on action and redesigning forms of action that are then enacted. Hannah Arendt (1958) developed a concept of praxis in her discussion on the nature of “action” in her book “The Human Condition”. Referring to classical Greek and Roman origins of Western life, she discerns that action is distinctively public and political, as compared with private and singular, and that action is never predictable or reversible, since the act of action relocates us in a newly evident web of relationships and all that they hold.

Cottingham (2005) sees praxis as “embarking on a pathway of practical self transformation, rather than simply engaging in intellectual debate or philosophical analysis” (p.5). Reflection is “critical”, making distinctions to enable the influences, powers and thinking that drives a person’s form of action to be revealed, and regeared to inform how action takes place. Cottingham’s discussion situates this activity as a spiritual quest, arguing that forms of philosophy, morality, spirituality and religious ways of knowing have significant value in the reflection and the intentions behind the redesign.

A design for pedagogy that seeks to know how to act needs to be conscious of its assumptions about the nature of “action”. Pacherie (2008) analyses the phenomenology of “action” creating a framework made up of “cascading” inter-relationships between distal, proximal and motor intentions.

Reviewing the literature Pacherie notes that “action” is both movement with intention and the guidance of such movement by

the immediate environment, which informs how the action is undertaken. Central to the concept of control or guidance is the presence of models of action: both the internal, mind-situated model and the model of the external world in which the action takes place. Where feedback only informs of a good fit, there is little learning – where feedback informs of something else, learning is deep and the sense of self is sharpened.

Antonancopoulou (2010) shifts the concept of “action” to that of phronesis or practical wisdom. He reflects on Aristotle’s original three modes of knowledge - scientific, technical and practical - noting that it is the practical that is most often neglected in knowledge-focussed activities and institutions. Practical knowledge is about making judgements about knowledge that will make a difference to a situation – but to make such judgements one needs to be critical not only about one’s assumptions embedded in the intended action but also about how one reflects on these matters. In short, we need to be critical about how we are critical.

Self-determination is a practical action requiring practical wisdom, which in a collective or collaborative context is core to a form of leadership understood as “distributed leadership”. Torbert (2001) describes his “practice of Action Inquiry” in terms of First-, Second- and Third-person inquiry. He understands all action to be an inquiry and all inquiry to be an action. First-Person inquiry brings our notice to what we attend to, interacting with differences of identity that trouble our ways of being. Second-Person inquiry is about how we speak and listen with each other as a way of developing trust in speaking of our truths together. With the sense of self in relationship that unfolds through this practice, Third-Person Inquiry enables a group of people (organisation, community) to rely less on unilateral forms of power and develop instead mutual forms of power – which he calls “distributive leadership”. This is a form of power that can co-construct a future rather than simply submit to a mono-cultural and dominant form of power to control a future that only reflects the past (Ibid, 2001, p.257). Torbert’s framing of action as inquiry at these three-inter-

dependent scales is as we see it, another aspect of praxis of Systemic Pedagogy.

The concepts discussed in this review of the literature informed a conference program which became a holding space for participants to self-determine their action in learning about their practices, in conditions of safety and ambiguity. We now step inside the experience of the CI events with a First-Person perspective of the event, then present six realisations of Action Research praxis that the authors developed through their participation in Systemic Pedagogy.

Inside the Conference Intensive: First Person narrative

I am the river, the river is me

Riripeti Reedy

As a Maori in the Conference Intensive, I am ever conscious of the expansiveness of Weereewa. On the opening night, Australian Allodial Elder Mingo Mortimer has given his genealogy to stand and welcome us, as a descendent of his 'Land that is Woman's Land'. Its later name, Lake George, is far too young for such a place. I think and realise I am but a blip in time at Weereewa. I recognise my nothingness in this scheme of things, and the mounting surge of responsibility in being at one with and a part of the universe, being fearful and fearsome, feeling the disturbance and challenge of the river as it continues its flow through each of us.

The praxis of movement in the relational space that is the self is an embodied, mindful and dynamic disposition, sliding and slanting between and within the multiple perceptual positions that are ultimately nested in you as the only and total singularity over which you have control. It is the reflexivity of this state of being that is asserted and affirmed in the statement 'ko au te awa, ko te awa ko au': I am the river, the river is me.

That is the starting point that I have found most Maori, Aboriginal, Indigenous persons bring to Action Research (Bell, 2010).

Perceiving the system in its entirety, a system that one has so little control over, but with an emerging awareness of the potential to change that is the self; this is, an ao Maori: Maori world view, an Indigenous world view. The reality that a collective 'we' might change the system is at once liberating and daunting, in that any change will be started with the 'self'.

Participants are a little startled to be asked to join us in the First-Person, through a critical incident or piece of work that situates them in their system. Some seem even a little upset that all of this warm touchy feely stuff isn't what they signed up for, and what on earth does it have to do with systemic change! Others are a little quieter: for them, articulating themselves in this way is a first place of recognition of their agency within their system.

It is a disquieting time. Most European, Pakeha participants arrive with an articulated and considered "I am" world view, but seeking another way of seeing and being. Their I am world view is steeped in privilege and power. It is imbued with a history of domination and oppression. Their appreciation and apprehension of self is both stunningly confronting to the self – 'really am I like that? Are we like that?' – And confronting to others present – 'can they really not see themselves?'

As a practitioner swimming with the I-ams and holisms in the choppy waters of self-doubt, grief, guilt, and sorrow, dissonance and struggle are instruments of my praxis, of our praxis, in the Intensive. They create a stabilising energy, showing up as the self is explored and revealed. On rare occasions, an I-am or an holism will lead us into unsettled waters of buoyancy, joy and play. On those rare occasions, it will be the rhythm and the music that will present as instruments of our praxis, as sources of change.

The relational movements of the I-am's from First-Person clarity to Second-Person co-shared, co-constructed, uncertain, 'tattered edges' and then to emergent experiences of self in system break up the singular self and system. These are the 'openings' where praxis

emerges. Participants learn experientially that they are the system, and the sum total of the system resource for change. The space is held for the experiential, the critical and the performance to be disaggregated and re-integrated into purposeful embodied actions of change... again ...and again.

I realise as I write this, my praxis is also bound to my knowing that I am my mountain, Ko Hikurangi, I am my sacred river of many, Ko Waiapu koka huhua, and that Ngati Porou is my iwi: bone/tribal group. It is also the whenua: land that I am part of. These are unshakeable certainties. I am and they are, the relational presence of all my tipuna: ancestors that have gone before me. They too, are the relational presence of who I and my descendants will be tomorrow.

On being Pakeha⁹

Where my foot falls

Is ~~my~~ the mountain

The winds blowing through me – there and then –

~~My~~ The Ancestors

What comes of wind and mountain

Are ~~the~~ my children

My belonging, my belonging

Within the river who moves us on

Susan Goff

Six practices of praxis

The CI was designed to create opportunities for Action Researchers to become more conscious of their own practices, and to develop rigour in how they critique their practice, taking responsibility where system and self reverberate. This is what we

⁹ “Pakeha” is the term Maori use to describe non-indigenous New Zealanders.

understand as praxis. We now describe six practices that emerged in the CI that constitute elements of Action Researcher praxis:

- Acting with attention to I, we and us
- Attending to the emergent around perturbation
- Living with tattered edges
- Language as action
- Taking responsibility for pedagogy
- Joy.

1. Acting with attention to I, We and Us

On Day 2, having listened as the Design Team prepares its approach, participants take up their roles in a community seeking to plan for sustainability. They experience the Team as imposing an approach but leaving them out of setting the agenda. Reflection on the scenario identifies participants' compliance, anger and helplessness, and the assumptions and power relationships that go with this. Feelings well up; thoughts expressed lead to a cascading of reactions; silence pervades the room as the group processes events. The next round of action sees participants more able to act on their feeling, negotiating with more agency.

Systems manifest at personal, collective and systemic levels. The Action Researcher must act with attention to I, we and us, positions that Torbert (2001) describes as First-Person, Second-Person and Third-Person. Embedded in the system, how I am thinking, feeling and acting is information about the system. The challenge is twofold: to move this from experience through to articulation, and to allow awareness in First-Person positions to resonate with Second- and Third-Person positions.

The CI presented spaces and opportunities for reflective, reflexive and embodied engagement with each of these positions. First-Person development began with pre-conference submission of critical incidents and practice scenarios, which were taken up in the first session with the questions: "What is the practice situation I

want to explore?" "What is my theory of change in systems?" and finally "So what are our shared theories of change?" Explaining one's practice to other Action Researchers was an opportunity to find one's voice; drawing together theories required understanding differences in theories and contexts, and articulation of underlying propositions. Diagramming these theories forced participants to articulate the connections between elements of their theories.

Having established a critical stance to practice, Day 2 provided multiple opportunities to move between First-, Second- and Third-Person as the Design Team, facilitators and participants entered three succeeding rounds of designing Action Research for a specific scenario, its implementation, and then critique. There was a kind of fluidity as this process unfolded over time and the dynamics of the social system came into being. Design, implementation and critique were all forms of action manifesting a complex system in emergence, offering a dynamic learning space for participants.

2. Attending to the emergent around perturbation

The emergence of protest in the scenario community (above) immediately unsettles established power relationships, perturbing in different ways. Some want to use the protest to hit back, surfacing a history of the community being 'done to' by outside agencies. Some want to soothe troubled waters, for fear that simmering differences will split the community. The Design Team realise with a shock that they have positioned themselves, and been positioned, as outsiders, despite their good intentions. Within a community of practitioners, these disturbances can be approached as phenomena of the system.

The CI cultivated a practice of attending to the emergent around perturbation. Designed to disturb, not to provide the assurance of comprehensive theories or instruction from others' experience, the CI invited people to find the gaps between their own theories and their actions, and let their assumptions, first impressions and first actions be disturbed by others.

Action Researchers work inside systems, gently provoking people to become more aware of the system (Kitchenham, 2008; Bell, 2010) and to bring into awareness aspects of the system that have been taken for granted, avoided or hidden in the everyday (Torbert, 2001). For many practitioners, Action Research begins as one of many toolkits available to them as a manager, teacher, researcher or development practitioner. They less often enter Action Research as a practice, with its own community of practice (Wenger, 1998).

As a space for practitioner development, the CI offered two novel experiences. First, it focused attention on what was perturbed by the Conference experience. It set an agenda for examining practice in action, assumed that people's assumptions and habits would be disturbed, then made room to mindfully consider that. Second, it provided a community of practice within which to make sense of perturbation. In a place of collegiality where differences were valued, the CI enabled participants to make sense of personal disturbance as a system perturbation, holding attention on perturbation whilst in the system (Torbert, 2001; Kincheloe and Steinberg, 2008; Schneider, 2012).

3. Living with tattered edges

The Scenario Design Team has failed in its first two cycles of action to engage the community as a self-directed manager of its own inquiry. The Team's preparation for cycle 3 is more subdued – they don't really know what will work. They enter the community with their pockets empty, but with an open inquiry as to what the community thinks about its situation. They wait and listen, and slowly, possibilities form.

Action Researchers must sustain their own and others' sensing, thinking and action in places of difficulty in systems, without succumbing to the expectation, within themselves and others, that problems will be solved quickly. The pressure to be and be seen as a competent person conspire to hide the difficulty of change in systems: Action Researchers need a safe place where they can sense difficulty and act, but with tattered edges – that is, with partial understanding and with provisional action, while feeling dissatisfied and vulnerable.

The CI reproduced the tattered edges of work in real systems by insisting on moving from reflection to action and back again, and again with pressing time limitations as they are in the situations in which we practice. The first day's discussion of current critical moments in practice folded into articulation of personal theories of action, and then into a dialogue session sensing the field of practice forming between participants. The first scenario gave way to a second, then with understandings still in a swirl, to a third. There was no neat resolution of issues raised, and no convergence to precise inquiry questions or answers. There was instead blurry questions and edges, porosity between self, other and collective, and a conversation between reflection and action that lost track of where insights started or might end: sensing imminence was strong.

Being in flow under such intensity requires high degrees of self-knowing to emerge so that our ways of being with each other and that constitute the emerging system are more thoughtfully gifted (Strauss & Fuad-Luke, 2008).

4. Language as action

The Scenario Design Team uses language to prise apart what is happening and to assemble new meanings. A participant asks another a question that reveals unexamined assumptions and their origins, and together they construct another way to understand the system in which they both find themselves. The action of the Conference is carried into workplaces through the question – “What is the message that I send in my work through how I am?” In such moments, language is action.

For an Action Researcher, being in inquiry means being in language. It is the means by which we construct and act on our understandings of the world, and is itself one of the most powerful forms of action available to the Action Researcher (Torbert, 2001). It brings forth meaning and distinctions that create opportunities for disentanglement of complex issues, and it provokes new action in systems. “What are you noticing?”

5. Taking responsibility for pedagogy

The distinction between 'research' and 'action' risks 'action' being seen as something that happens 'out there', done to and with others. Rather than being an embodied methodology facilitating the 'standing up' of systems of change (Bell, 2010), Action Research becomes another instrumental application to achieve preconceived ends.

The CI sought to reintegrate the notions of action and research by bringing the focus of action 'in here', to recognize the First-, Second- and Third-Person presence of the practitioner in their systems of work. It is how we 'show up' that makes the difference: our presence in the situation affects the dynamics of the inquiry we are seeking to facilitate. As one CI participant reflected: "I need to know myself so that I can make sure that the project doesn't become *about* myself".

Participants were invited to take responsibility for themselves as Action Researchers at every point of the program. Enacting the issues of their live research sites, participants confronted the epistemological assumptions in their praxis by seeing those of others and having the opportunity to reflect that insight back to their own (Kitchenham, 2008). They also confronted the task of building a pedagogy of systemic inquiry, taking responsibility for their preferred styles of learning and willingly encountering some that were less preferred. Working to the principles of Slow Design (Strauss, C. & Fuad-Luke, 2008), the CI facilitators invited participants to broaden their focus from their own thinking and action to the shared field of thinking and action as it developed through the event.

In this way the CI shifted the locus from resilience as an individual practitioner to resilience in co-investigation with others. Rather than relaxing into a warm bath of collegiality, participants engaged in an edgy construction, moment by moment, of learning with their peers, taking responsibility for what was being jointly created both in content and as process. Participants, Designers and Facilitators alike took on responsibility for constructing a pedagogy, deconstructing privilege and power by bringing

together theory and action, and opening up to many ways of knowing in their own distinctive ways within a collective experience. This is a form of distributive leadership (Torbert, 2001).

6. Joy

*In the offering I give of myself
And in the giving of others we unite
Our minds and hearts connect
And in the circle
We bring into being the We.
An energy swells
As we narrate what we bring
Listening, connecting
We are drawn outward
To those who are not there
We turn our attention to the other
In doing so we extend the circle
And bring into being the Us.*

Vicki Vaartjes

A programmatic approach to Action Research— reflection, planning, observation and action, then back to reflection—belies the turbulence of systems. Action Researchers facilitate disruption of the known, and propose an encounter with what is in shadow, in personal awareness and in the discourses that organise the normal. What can sustain the Action Researcher through the demanding practices of this praxis?

Turbulence invites Action Researchers to experience themselves as moving bodies in the flow of the system of which they are a part. Taking responsibility does not mean fixing the shape of things. Moving between I, we and us, and attending to what is emergent, is as often a joy as it is a struggle. Insights fit together easily,

knowledge is made in a moment, and the flow in action surprises with its ease.

Conclusion

As we see it, Systemic Pedagogy is a way of participating in the design of learning for oneself, with each other, at systemic and ontologically reflexive scales of being in knowing. It is characterised by its commitment to seeing, creating and working within dynamic relationships as the means by which learning takes place, and the purpose for which learning is intended. Relationships here are unlimited in their preoccupation – they can include time and place (histories and ecologies), concepts and people, action and reflection, and cultures and languages.

In the CI, each participant was invited to self-author their practice and their ways of understanding their practice, and work more mindfully with this understanding in their being in action. The practices of this praxis - acting with attention to I, we and us, attending to the emergent around perturbation, living with tattered edges, language as action, taking responsibility for pedagogy, and becoming a moving body in the flow of the world – are one way to understand the beauty and significance of the world that stirred through Weereewa’s ancient bed.

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Developing Pictorial Conceptual Metaphors as a means of understanding and changing the Australian Health System for Indigenous People

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Abstract

This paper describes the development of Pictorial Conceptual Metaphors, a pictorial outcome of systemic action research that captures and explains complex systems from the perspectives of the participants involved. The Pictorial Conceptual Metaphors presented in this paper developed from the authors' work on a literature review for the Indigenous Health and Wellbeing Node of the National Indigenous Research and Knowledges Network (NIRAKN). In this paper, the authors provide an overview of the theories that influenced their development of Pictorial Conceptual Metaphors (PCMs), including systems theory, soft systems thinking, visual metaphor theory, and the eco-sciences approach of PCMs. They work from a systemic action research perspective,

and argue that PCMs provide a powerful way of 'seeing the system', understanding a system within its historical context, and developing a channel for systemic change. They propose that PCMs can be used, to encourage conversations and enhance understandings about the change needed in Australia's health system, in a way that is culturally respectful and appropriate for Indigenous Australians.

Keywords

Action Research, Collaborative Relationships, Indigenous, NIRAKN, Pictorial Conceptual Model, Systemic Action Research, Systems Theory, Pictorial Conceptual Metaphor

Introduction

Pictorial Conceptual Metaphors (PCMs) are a pictorial method for capturing meanings and understanding the ways that people experience their relationships with complex systems. This paper describes of three PCMs' development to interrogate and build an understanding of the relationship that Aboriginal and Torres Strait Islander Australians have with the health system and to consider ways that the health system can become more responsive to their needs.

Our first PCM, titled *Two Rivers, One Land*, emerged from our literature review about gendered Aboriginal and Torres Strait Islander health.¹⁰ It captures our understanding of the literature and Aboriginal and Torres Strait Islander places within the Australian health system. We then developed two further PCMs to explore ways for bringing about systemic change.

PCMs are informed by systems theory, soft systems thinking, systemic action research, visual metaphor theory, and theories from eco-sciences that describe PCMs. In this paper, we draw on these theories to explain the concepts that underpin PCMs. We argue that PCMs provide a new way of 'seeing the system' in systemic action

¹⁰ For the remainder of this paper, we respectfully use the term 'Indigenous' to refer to both Aboriginal and Torres Strait Islander people.

research projects. They are a logical extension of Indigenous ways of working, and may provide a collaborative focus for participants to develop their ideas about systemic change.

Background to our project

Our research to develop PCMs emerged from a literature review conducted by the Indigenous Health and Wellbeing Node of the National Indigenous Research and Knowledges Network (NIRAKN).

NIRAKN is a collaboration of 44 Indigenous researchers from 21 Australian universities and 5 partner organisations. NIRAKN's work is guided by an Advisory Board of 10 Indigenous research leaders and Elders. NIRAKN operates through a hub and spokes model. The central hub has overall responsibility for administration, coordination and capacity building. The four spokes (or nodes) develop and conduct the research programs of: (1) Indigenous Health and Wellbeing, (2) Indigenous Sociology and Knowledges, (3) Indigenous Law and (4) Yuraki – History, Politics and Culture (NIRAKN n.d.).

The Indigenous Health and Wellbeing Node focuses on an holistic, gendered approach to health as seen through a social and emotional wellbeing lens (NIRAKN n.d.). The first project of NIRAKN's Indigenous Health and Wellbeing Node was an extensive literature review, exploring key issues in Indigenous health and research approaches that could lead to positive outcomes for Indigenous peoples in Australia (Fredericks et al. 2014a). We focused on the strong links between gender, social and emotional wellbeing, reproductive health, and chronic diseases such as heart disease and diabetes. We were keen to examine health and wellbeing within the broad context that is relevant to both Indigenous peoples and service providers – including issues such as colonisation and racism, the social determinants of health, inter-generational disadvantage and access to the health system.

As Indigenous researchers, we consciously adopted Indigenous practices in our research. Practices such as yarning (Bessarab & Ng'andu 2010; Palmer & Collard 2001), maintaining respectful

conventions and relationality (Martin 2008), and the cultural practice of sharing food (Fredericks et al. 2014b) underpinned our work and the development of our literature review. These practices provided us with a culturally safe conversational process for sharing stories and ideas (Bessarab & Ng'andu 2010; Franks & Curr 1996). Cultural safety gave us the environment that we needed to develop a project that aims to both understand a complex system and motivate its change (Fredericks et al. 2014b). Our research fitted within the broad model of participatory action research (Fredericks et al. 2014a).

As we examined the research about Indigenous health and wellbeing, we were increasingly conscious that we needed to explore and understand the health system itself. In particular, we needed to develop an Indigenous perspective of the health system and try to bring together the complexity of issues that influence the ways that Indigenous people interact with and experience the system. We began to look for a way to summarise our perspectives of the literature: something that might offer a platform for understanding and future action. It was from this basis that we developed PCMs.

Systemic racism within the Australian health system

It is well established that Indigenous people in Australia experience much poorer health than non-Indigenous people (AIHW 2011; Dudgeon et al. 2014; Paradies, Harris & Anderson 2008; SCRGSP 2014). The high level of ill-health and mortality within Australia's Indigenous population has been associated with historical disadvantage, colonisation, oppression and contemporary racism (Dudgeon et al. 2014; Fredericks 2008; Paradies, Harris & Anderson 2008). It is evident that Indigenous people's health and wellbeing needs are not met in mainstream primary health care services (Alford 2014).

Racism is entrenched within Australia's institutions, policies, culture and colonial history. It is also entrenched with the psyches of non-Indigenous Australians (Fredericks 2008; Sherwood 2013). In contemporary Australia, racism manifests through the processes

embedded within institutions and systems that continue to exclude and discriminate against Indigenous peoples through a lack of cultural consideration (Dudgeon et al. 2014). It is also visible through its ongoing effects on Indigenous people's health (Fredericks 2008; Marmot 2011; Queensland Government 2012). The poor health outcomes experienced by Australia's Indigenous population cannot be separated from the health system and the racism embedded within it.

Much has been written about the inequity, discrimination and racism that exist within the 'system' in Australia (Broome 2010; Dudgeon et al. 2014; Fredericks 2008). In response to these issues, Sherwood (2013) recommended that all health professionals working with Indigenous people should receive additional training. This training would explain Australia's colonial, political, social and economic histories, and explore the impact of these histories on the social determinants of health that continue to undermine the health and wellbeing of Indigenous Australians. 'Most Australians including Indigenous Australians have not benefited from a balanced and well informed historical account of the past 200 and something years' and this 'lack of knowing' has affected 'the way health providers have delivered health to Indigenous children, mothers, fathers, and their communities' (Sherwood 2013, p. 28). Strategies for improved Indigenous health outcomes, particularly within the health sector 'need to include knowledge and awareness of the history, experience, culture and rights of Indigenous [peoples]' (Burns et al. 2013, p. 1). Simply disapproving of racism and altering the language within the system is not enough to change the situation (Fredericks 2008).

The call for cultural training and awareness is not new. In a submission to the National Aboriginal Health Strategy Working Party in 1989, the South Australian Health Commission recognised that problems in the health system were caused by the 'failure to recognise and adequately address the very fundamental differences in the belief system on which concepts of health and illness are based in Aboriginal and Western cultures' (Australian Government Department of Health 1989, p. 60). The Working Party

acknowledged that health workers need culturally appropriate, relevant coursework and clinical experience, with the aim of increasing their understanding of Aboriginal health issues (Australian Government Department of Health 1989). This led to the introduction of cultural awareness training programs (Downing, Kowal & Paradies 2011). However, research indicates that cultural awareness training in Australia has been relatively ineffective (Downing, Kowal & Paradies 2011; Thomson 2005), perhaps because the programs focus on individuals health workers, with little or no consideration of the system itself (Thomson 2005).

As we worked on the NIRAKN literature review, we became aware that the health system and other government systems have a negative impact on Indigenous health and wellbeing. The impact is cumulative, with past experiences continuing to shape the present (Dudgeon et al. 2014; Fredericks 2008; National Mental Health Commission 2012; Queensland Government 2012). We realised that improved Indigenous health outcomes require an improved understanding of the health system, developed from the perspective of Indigenous people. We also realised that we needed to place our understanding of the contemporary health system within its proper historical context, and consider the relationship between Indigenous and non-Indigenous peoples since colonisation (Attwood 2005; Dudgeon et al. 2014; Sandy & Clapham 2012). We looked within systems theory for a way to acknowledge and map the relevant relationships and express the past, present and future in relation to colonisation and its inherited effects.

Developing systems thinking

We drew on the work of Backlund (2000) to understand the health system within broader systems theory – as a series of parts which interconnect to form the whole. In organisations, the system is made up of individuals. Each individual becomes part of the whole system, affecting and being affected by the system, both directly and indirectly. Individuals’ interactions with each other, with the system, and with the outside world will influence what happens both within and outside the system (Backlund 2000). We began to recognise the Australian health system as one large

system made up of multiple smaller systems (such as hospitals, primary care providers, and so on).¹¹

Two assumptions underpin most approaches to thinking about systems: firstly, all things in the universe are directly or indirectly connected to everything else; and secondly, we cannot have a ubiquitous view of this interconnectedness because our understandings are limited (Midgley 2011). Systems can be viewed as constructs of the mind, as ways of thinking about real things rather than being real things themselves (Packham & Sriskandarajah 2005). There are two main perspectives within systems thinking: one perspective assumes that knowledge is objective and that there are real systems in the world that can be recognised and improved; the second perspective assumes that knowledge is subjective and considers that only the social construction of the world is systemic (Flood 2010). Both perspectives are grounded in the belief that the world is systemic – the world is a place where phenomena are considered an emergent property of an interrelated whole. Therefore, *emergence* and *interrelatedness* become the fundamental notions behind systems thinking (Flood 2010).

At an organisational level, systems thinking views organisations as complex networks of interconnected parts, which can be most practically studied as an emergent whole (Flood 2010). No part of the system is isolated from the rest (Backlund 2000). This means that dysfunction at any level of an organisation can cause dysfunction throughout the entire system: for example, one individual's dissatisfaction may be conveyed as dysfunctional behaviour within a team and may influence the team's capacity to

¹¹ The Australian healthcare system is complex: the Australian Government provides funding for healthcare through insurance payments and payments made directly to the States and Territories; the States and Territories are then responsible for the direct provision of services (AIHW 2013). The direct provision of care comprises public and private health providers, settings and supports. Within this framework, health providers include medical practitioners, nurses, allied health and other health professionals, hospitals, clinics, and government and non-government agencies (AIHW 2013). For this paper, the term 'health system' encompasses this description.

function effectively; poor function may then reinforce the individual's dissatisfaction (Coghlan 2002).

Systems thinking acknowledges that making changes or shifting something in one part of a system will make changes and shifts in other parts of the system, and open up possibilities or outcomes that had not previously been envisioned (Burns 2014).

Complex systems, such as Australia's healthcare system, are typically studied by building models of how they function and then analysing the models to understand how changes in the structure of the system's network will result in changes to the system's dynamics and outcomes. Systems theorists use idealised, complex systems (a large, linear, randomly coupled network) to consider strategies for re-engineering real systems, such as the health system. Mathematical models (using random matrix theory) show that a complex network that is too richly connected (it has too many nodes) or is too strongly connected (the connectivity between nodes is tight and inflexible) is likely to exhibit instabilities that propagate throughout the network. This effect becomes more pronounced as the network or system becomes larger (May 1972). This effect seems counter-intuitive: it seems logical to expect that extra connections and stronger connections would increase stability. But Indigenous people have always understood this outcome, as evidenced by the exquisitely tuned management of the complex ecosystems of lands, waterways and sea that was and continues to be practised (Gammage 2011). Land management examples include knowing when and where to introduce a propagating instability such as a fire, and when to respect boundaries and leave well alone or intervene minimally.

Modelling of complex network systems suggests that the health system in its current form is *likely* to exhibit propagating and growing instabilities: it is *large*. Instabilities can manifest in many different ways, and will influence both the effectiveness of the system and its outcomes. Examples might include a toxic work culture, cost blowouts or rampant rorting.

Modelling of complex network systems also suggests that naïve strategies (such as introducing more layers of management,

holding more meetings, sending more email communication or designing new forms) are likely to introduce instabilities into the health care system rather than improve it. These strategies either enrich the network by increasing the number of nodes (adding management) or increase the strength of connections (new communication and paperwork). This anomaly has important implications for the health system, and suggests that many attempts to improve the system were always destined to fail. From an Indigenous perspective, the health system can be seen as an improperly managed, complex network. As our research team expanded its understanding of systems theory and linked the theory to our literature review of gendered Indigenous health, we began to question whether smaller, local, independent or semi-autonomous health systems may deliver better outcomes. We also started to vision what might be possible.

McIntyre-Mills, Goff & Hillier (2011) argue that there has never been a greater need for change across health care policy areas. Deep, systemic change is needed, and it cannot be achieved by management initiative or new communication. Bringing in new people and asking them to make change without changing the system could effectively reproduce and legitimate new forms of marginalisation (McIntyre-Mills, Goff & Hillier 2011).

Systems theorists acknowledge that changing a complex system is possible (Burns 2014). Change is iterative and complex, with each part of the system and each individual participant influencing and being influenced by the change (Burns 2014; Chalmers 2006; Coghlan 2002). To effect change, we must build our knowledge of the system and know where we are situated within it.

Soft systems thinking

Soft systems thinking is a line of systems theory that is particularly suited to developing an Indigenous perspective of Australia's health system as it lends itself to possibilities for inclusion and recognising diversity. We used this approach to develop a deeper sense of Indigenous people's positions within the system and the interactions between the system and individuals.

Soft systems thinking sees reality as the creative construction of an individual's interpretation of their life experiences (Jackson 1991). It can be particularly useful for understanding a situation in a way that acknowledges both cultural aspects and individual interpretations (Flood 2010). Soft systems thinking 'helps people to sense a deep holistic or spiritual quality to human existence'; in other words, it helps us to gain a deeper sense 'of how we fit in with the scheme of things' (Flood 2010, p. 280).

Stage	Characteristic of Stage
1	Stage 1 is where an uncomfortable problem situation arises and people wish to explore the issue in order to make some improvement
2	Stage 2 is where the problem is expressed; attempts to structure the problem are avoided so as not to shut down original thinking and hence learning. Rich pictures are promoted as a means of expression. They are often cartoon representations that allow people to express their experiences and highlight points that stand out in their minds.
3	Stage 3 recommends systemic thinking about the real world by naming possible human activity systems that may give insight into the problem situation or that may lead to debate that leads to action to improve the situation. Root definitions of relevant systems are developed. Construction of root definitions can encompass customers (C), actors (A), transformation processes (T), world-view (W), owners (O) and environmental constraints (E).
4	Stage 4 elaborates on the root definitions by drawing up conceptual models. Initially, conceptual models are a set of verbs (action concepts) that describe the actions of the human activity system, which were seeded in a relevant system and grown in the root definition. Arranged systematically, the verbs draw out the feedback loops that describe the interactions of the human activity system.
5	Stage 5 is where conceptual models, which are the result of systemic thinking about the real world, are compared to the problem situation expressed in stage 2, and debated. The conceptual model is also used to reveal possible change proposals.
6	In Stage 6, change proposals are thought through. The desirability of the human system revealed in the systems model is discussed, and the issue of feasibility is explored in the context of the problem situation, of the attitudes and of the political interactions that dominate.

Stage	Characteristic of Stage
7	Stage 7 explores the possibility of accommodating the contrasting opinions and interests that surface in the process of carrying out soft systems methodology. Implementing agreed upon change proposals causes other problem situations to arise and so the process continues.

Figure 1. Stages of Soft Systems Methodologies Used to Resolve Complex Problems Within Systems (adapted from Flood 2010, pp. 277-278)

Systemic action research

Systemic action research uses ‘stories to illustrate how systems ideas help us to conceptualise and work with complex issues’ (Burns 2007, p. 22). It provides a way for researchers and decision makers to ‘see the system’ and understand the system dynamics that are occurring (Burns 2014, p. 7).

We adopted a systemic action research approach to examine Australia’s health system from a gendered Indigenous perspective. We believed this was important since some of the connections between Indigenous people and the health system are based on gender and some aspects of Indigenous health are gendered. For example women’s specific health needs (reproduction, menopause, breast care, child and maternal health and so on) and men’s specific health needs (prostate and reproduction) and Child and Maternal Health. We acknowledge that some health issues that are experienced by both men and women. Systemic action research incorporates many of the approaches of more traditional action research, but focuses at the whole system level and considers the inter-relationships occurring within the system. We felt that systemic action research provided a framework to help us further our understanding of the health system and how it can be improved for Indigenous peoples.

Systemic action research is built around three assumptions:

- Sustainable change in a system is dependent on realigning the whole system not only on solving problems;
- People who are stakeholders in the system should participate and be involved in systemic change, and those stakeholders

should come from right across the system (often with diverse views) to achieve sustainable change; and

- A flexible and emergent learning framework needs to be built to 'hold' this diversity (Burns 2014, p. 16).

At the heart of systemic action research 'is its ability to bring the dynamic of collaborative learning that action research creates, into large systems which systemic practice makes visible' (McIntyre-Mills, Goff & Hillier 2011, p. 248). 'Large systems' can be defined as whole policy areas, such as health, large non-government organisations such as the Red Cross, or even as an entire geo-political region. The dynamic processes offered by systemic action research may offer an effective way 'of working within and between organisations to maintain dynamic thinking and practice' (McIntyre-Mills, Goff & Hillier 2011, p. 251). Figure 2 illustrates the differences between Systemic Action Research and other forms of action research (Burns 2014, p. 4).

Inquiry Approach	Learning Process
Reflective Practice	Individuals reflect on their own practice (Focuses on the individual)
Action Learning Action Science & Action Inquiry	Group process supports individual reflection (Focuses on the individual)
Co-operative Enquiry	Group reflects on group project (Focuses on the group)
Participatory Action Research	Community based generation of knowledge for community action processes (Focuses on the community)
Systemic Action Research	System wide learning (Focuses on systemic inter-relationships)

Figure 2. Comparison of Key Characteristics and Learning Processes in Action Research Approaches (adapted from Burns 2014, p. 4)

Systemic action research can be used to both understand and change a complex system. It involves the researchers being located within the system. As part of the action research tradition, it calls for traditional hierarchical power structures to be replaced by more equitable relationships, particularly in decision-making processes. This ensures that researchers can identify and embrace the multiple knowledges of all participants (McEntee 2013).

Systemic action research focuses on system reconfiguration, rather than problem solving (Burns 2014). Importantly, the change focuses at the whole system level, rather than on just one area. Burns (2014) contends that ‘changes which do not shift the underlying system dynamic are likely to be short lived (unsustainable) because the system dynamic is created by a network of powerful forces and inter-relationships which carve channels for behaviour (economic, social and cultural) which are hard to break from because they become habitual; are codified as moral; the costs of not conforming are too high for the individual and so on’ (p. 6). Four key characteristics of systemic action research are summarised in Figure 3, below.

#	Key Word	Key Characteristics of Systemic Action Research
1	FOCUS	A focus on actions that change the system dynamic and concerns the type of changes needed to create sustainable change. For this to occur, people engaged in inquiry and action need to be able to ‘see the system’ in order to understand the system dynamics that are occurring.
2	DESIGN	Multiple stakeholders are engaged in multiple parallel inquiries to gain an understanding of complex system dynamics.
3	MEMBER SHIP	Participants, stakeholders and group members change as the inquiry evolves, effectively framing the inquiry in an emergent process not by the interests or concerns of a constituent group.
4	SIGNIFI-CANCE	There is an emphasis on resonance which is about the means used to access the significance and importance of what is learned.

Figure 3. Key Characteristics of Systemic Action Research (adapted from Burns 2014, pp. 7-8)

Combining soft systems thinking and systemic action research

To develop our understanding of the Australian health system, we combined the approach of soft systems thinking with the methods of systemic action research. We were particularly interested in the *rich pictures* that soft systems thinkers use to express problems and represent experiences (see Figure 3, Stage 2). *Rich pictures*, often depicted as cartoons, are promoted as a useful tool for communication and expression (Flood 2010). Pictures offer a way of understanding – of understanding ourselves, our organisations and systems, our communities and how we relate to others (McIntyre-Mills, Goff & Hillier 2011). Pictures also offer a ‘highway to the unconscious’ (Daum cited by Burns 2007, p. 125) and can help participants to view problems from a different perspective.

Pictures are frequently used in systemic action research processes to unravel communication issues. For example, Percy-Smith et al. (2003) reported on a health project where a group of young participants and health professionals were working together to alleviate the stress that the young people faced on a daily basis. The health professionals were unable to understand the young people’s perspectives until the participants created a collage. The collage included an image of an angry man holding a gun with the words ‘everyone has a breaking point’ scribbled across it. The image resonated with everyone present and facilitated a communication breakthrough (Percy-Smith et al. 2003). The image ‘triggered an emotional response that resonated across the multiple experiences of reaching breaking points within the room’ (Burns 2014, p. 12). The collage helped to shift the focus from ‘stress’ to ‘breaking points’ and created an opening for mutual understanding and future change (Burns 2014). Such points of *resonance* (see Figure 3, Stage 4) can reveal what is important and where the energy for change is located in the system (Burns 2014).

In our work on the literature review about gendered Indigenous health, it became obvious that we needed to understand the complex historical factors that shaped the relationship between

Indigenous and non-Indigenous peoples from the time of colonisation (Attwood 2005; Dudgeon et al. 2014; Sandy & Clapham 2012). We developed our own rich picture to synthesise the literature we had reviewed.

Our rich picture, titled *Two Rivers, One Land*, uses the visual metaphor of two rivers joining in one land to depict the relationship between Indigenous and non-Indigenous Australians (see Figure 4).

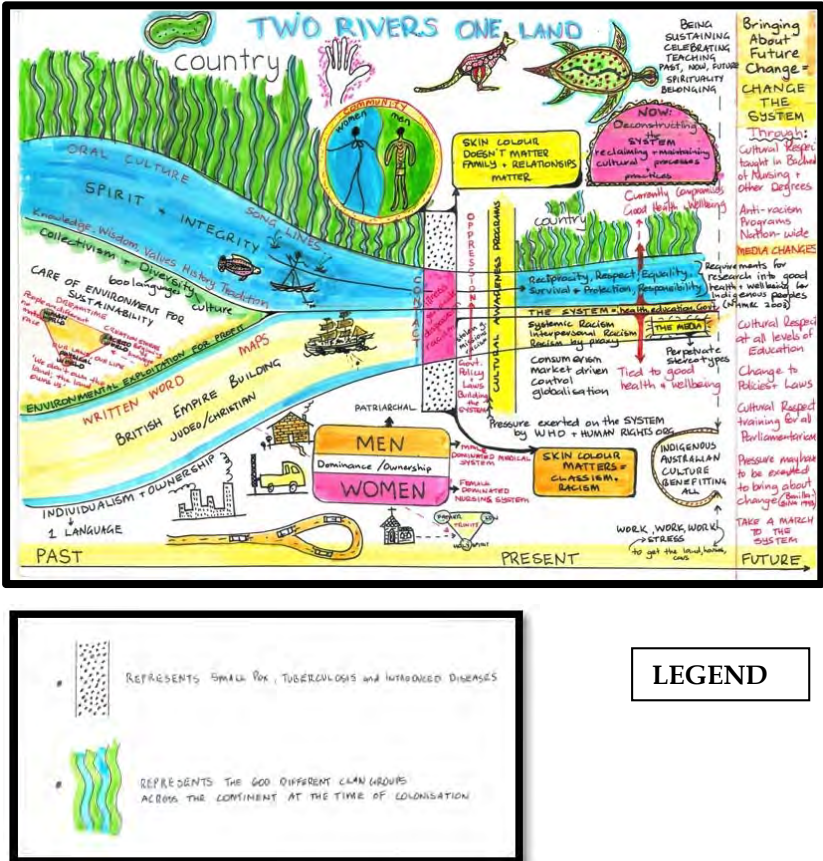


Figure 4: *Two Rivers, One Land* (Source: developed from the research)

Two Rivers, One Land captures our understanding of the literature and the health system. It is designed to tell a story about the past, present and future, to resonate with readers and, ultimately, to initiate change within the health system. It depicts the inherited effects of the health system on Indigenous people's health and wellbeing. To develop our rich picture, we approached the literature with one question: 'what is this all about?' We looked for a pictorial way to capture the history of two peoples, the First Australians and the Colonisers, living in one land.

At the time of colonisation, Indigenous Australians lived at one with their country: all of nature and other humans were understood and seen as spiritually connected (Dudgeon et al. 2014). Relationship to the land underpinned Indigenous people's social systems (Bessarab 2006; Broome 2010). Dreaming creation stories authenticated and fixed boundaries on the land; each person belonged to a certain territory within the family group where spiritual connections and obligations to country were known and practised (Dudgeon et al. 2014). Colonisation sought to destroy Indigenous culture and oppressive legislation removed Indigenous people's human rights (Dudgeon et al. 2014). A period of absolute state control (1905-1967) effected cultural genocide through the dispersion and separation of families who were relocated to missions and reserves where the silencing of language and cessation of cultural practices was enforced (Dudgeon et al. 2014). Our rich picture helps to position the current health system within the relevant historical context.

Recognising our rich picture as a Pictorial Conceptual Metaphor

As we worked with our rich picture, we realised its value as a metaphor, recognised its links with the theory of PCMs, and began to consider its potential as a catalyst for change. We explored conceptual metaphor theory to understand the implications of our work.

Metaphor

We see strong links between the rich pictures of soft systems thinking and the visual metaphors of conceptual metaphor theory (Lakoff & Johnson 1980). Metaphors are statements based on an analogy where two concepts are compared to each other so that knowledge can be viewed from a new perspective (St Clair 2000). Metaphor is part of our everyday thinking and helps us to make sense of the world; it has been recognised by rhetoricians and philosophers for centuries (Gibb 2011). Importantly for our work, metaphor can be used as a means of understanding cultural differences (St Clair 2000).

Conceptual metaphor theory emerged in the field of cognitive linguistics with the publication of *Metaphors We Live By* (Lakoff & Johnson 1980). It proposes that metaphor is both an element of language and a fundamental element of human thought (Gibb 2011; Lakoff & Johnson 1980). 'The essence of metaphor is understanding and experiencing one kind of thing in terms of another' (Lakoff & Johnson 1980, p. 5).

Pictorial or visual representations can become metaphorical ways of sharing cultural and social knowledge (St Clair 2000). Visual metaphor can be used to represent 'an abstract concept through a concrete visual image that bears some analogy to the concept' (Messaris 1997, p. 10). Visual metaphors can facilitate new understandings by providing a pathway where elements of the familiar subject are recognised and carried over to the new subject in a new domain (Eppler & Burkhard 2007). The socio-political context that creates the metaphor is an essential aspect of understanding the meaning of the metaphor (Refaie 2003).

Our picture used two rivers as a metaphor for the two peoples living in one land, with the metaphorical merging of the river depicting the emergence of Australia's governing systems (including the health system). While the governing system represents the imposition of a Western system, we acknowledge that this system is now very much part of most Indigenous

peoples' lives too. We aren't advocating for a rejection of the system.

Pictorial conceptual models

PCMs are similar to visual metaphors in the way they link the familiar with the new to increase understanding (DEHP 2012). They are widely used for synthesising and communicating ecosystem science. Scientific organisations in Australia and the United States pioneered the use of PCMs in the late 1990s (DEHP 2012).

PCMs can be significant and powerful ways of synthesising and communicating concepts to a wide range of audiences (DEHP 2012). They use symbols and images to illustrate complex interactions within a system or natural environment. They are designed to explain how systems work and how the parts interact. The models are designed to provide enough visual information to explain the context to readers.

PCMs are usually developed following a literature review and synthesis workshops (DEHP 2012). They can be developed through iterative peer review, particularly if the model is breaking new ground and/or the content is diverse (DEHP 2012). PCMs in ecosystem science are developed by first identifying their intended purpose, so that a clear set of outputs and outcomes can emerge (DEHP 2012).

Merging visual metaphors and pictorial conceptual models

Our rich picture, *Two Rivers, One Land* (Figure 4), combines the approaches of visual metaphor and pictorial conceptual models. We propose that the term *Pictorial Conceptual Metaphor* is a valuable way of describing this type of pictorial outcome from a systemic action research process.

Our PCM developed from our reading of the literature and our reflections on what the literature means to us. We adapted the pictorial conceptual modelling process common in ecosystem science to develop a pictorial metaphor that captured our thinking.

Figure 5 describes the way that we adapted the pictorial conceptual modelling process to develop a PCM.

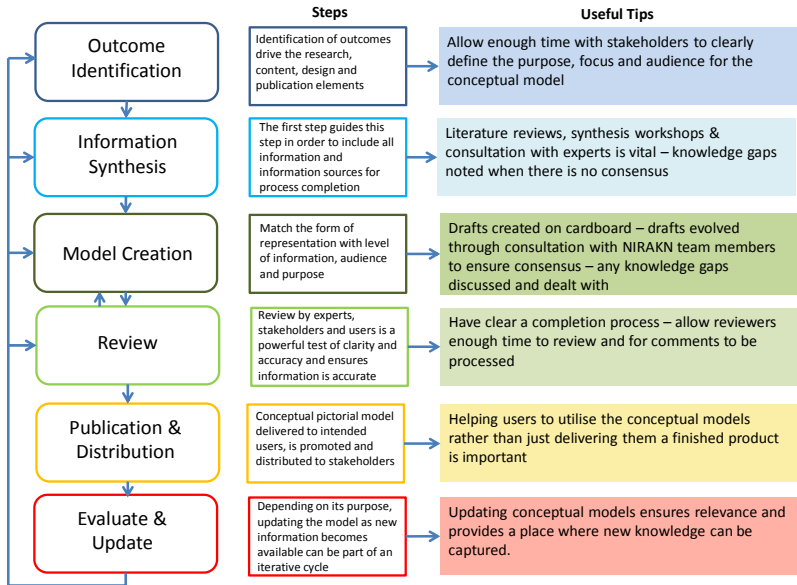


Figure 5. Adapting the Steps for Creating a Pictorial Conceptual Model to Produce a Pictorial Conceptual Metaphor (Adapted from DEHP 2012, p. 32)

Developing our understanding of the impact of colonisation on gendered Indigenous health and wellbeing

Our systemic action research process encouraged us to reflect on our initial PCM and develop additional visual metaphors to reflect our understanding of Indigenous health issues. Our second PCM

was designed to depict gendered Indigenous health and wellbeing (see Figure 6).

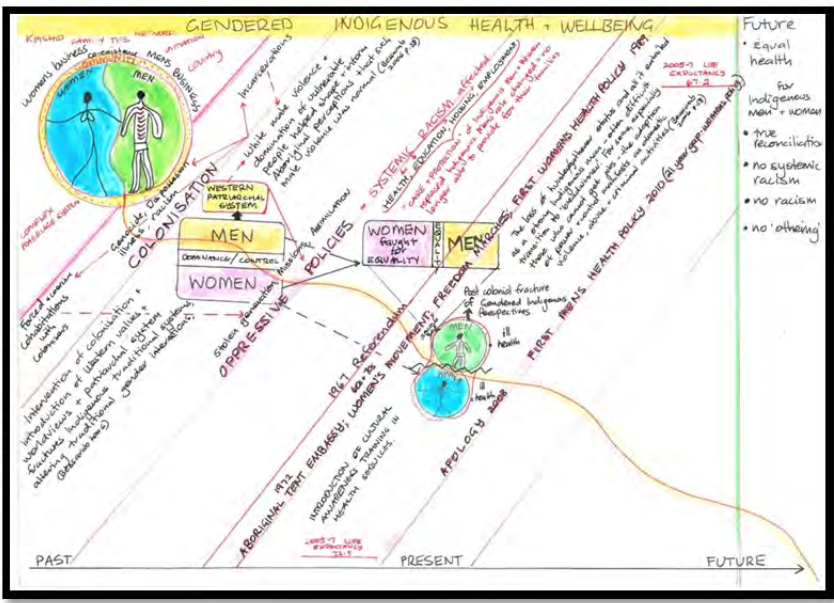


Figure 6: Gendered Indigenous Health and Wellbeing Before and After Colonisation (Source: developed from the research)

The PCM shown in Figure 7 created extensive discussion within our research group. The symbol used to represent the relationship of Indigenous men and women resonated with the group, but the patriarchal image on the 'Western culture' side of the picture caused much discussion. It highlighted the needed for a deeper explanation of Indigenous men's and women's relationship roles, to facilitate our understanding of the fundamental differences in the ways that the two cultures view the relationship between men and women. We noticed an iterative process, where the literature informed our PCM, which in turn encouraged further interrogation of the literature.

The process encouraged a new way of seeing gendered relationships: men were seen to have power over women in the Western patriarchal system and it was this power imbalance that the feminist movement challenged (Bessarab 2006). White feminists assumed that all women shared the same understandings; when the issue of subjugation of Indigenous women challenged this assumption, Indigenous women were given a voice (Bessarab 2006; Morton-Robinson 2000). For Aboriginal women, the conversation was about a partnership where both genders fight for racial equality in a dominant Western racial system, not about unequal relationships with Aboriginal men as defined by white feminists (Bessarab 2006; Moreton-Robinson 2000).

In Indigenous society, neither gender was considered more powerful than the other; both coexisted with the other within the context of their spiritual responsibilities and community life (Atkinson 2002; Bessarab 2006). White male violence and the dominance of Aboriginal people from the time of colonisation influenced Aboriginal perceptions that male violence was the norm (Bessarab 2006). Aboriginal men, no longer able to care for their families in the traditional way, were forced to learn new ways of being men, one of which was to internalise the violence and brutality inflicted upon them during colonisation (Bessarab 2006). Within this context, some Indigenous men were able to transition to new ways of maleness through work and the role of breadwinner, and others were not (Bessarab 2006). Those unable to obtain work, transform or conform took on powerful and controlling male identities to represent their maleness, resulting in social issues of domestic violence, abuse and criminal activities (Bessarab 2006; Dudgeon & Walker 2011). The ongoing impact of colonisation and Western patriarchy is evidenced by the collateral damage to Indigenous people's gendered roles and relationships and subsequent ongoing health disadvantage (Dudgeon & Walker 2011).

Our emerging understanding of gendered roles illustrates the value of pictorial approaches to systemic action research. By

interrogating the literature and representing it in visual form, we can see connections and gain new insights. These insights can, in turn, inform our understanding of the health system and become a catalyst for creating change.

The picture in Figure 7 illustrates the effect of the past on the present. While not yet fully developed as a PCM, the picture nevertheless shows the impact of colonisation, particularly on Aboriginal men. The intervention of colonisation and ensuing introduction of Western values, Western worldviews and the patriarchal system fractured Indigenous people's traditional systems, consequently altering traditional gender interactions (Bessarab 2006).

Imagining a future for Indigenous people's health and wellbeing

In our final PCM for this project, we tried to imagine a future for Indigenous people's health and wellbeing. We combined our search of the health literature with material from a recent futures thinking (Inayatullah 2007) research project which identified issues, trends and scenarios for Indigenous peoples and broader Australian society via the knowledge, experiences, opinions and visions of participants (Brands 2014).

Brands' (2014) work identified several possible scenarios, clustered into two different futures: the first possible future identifies an inclusive, vibrant Australia where Indigenous cultures are valued and embraced as central to the Australian identity, there is less focus on consumerism, there is greater focus on sustainability and community values, and holistic health care focuses on concepts of wellness and prevention to keep people strong and healthy; the second possible future identifies an Australia where economic and/or spiritual poverty drive the rejection of diversity and increase the gulf between rich and poor, public services and legislation such as land rights are dismantled, business rights and interests over-ride communities and individuals, and health care focuses on acute rather than preventive care. We were inspired by

Brands' (2014) first scenario to return to the river metaphor to depict the Australia of the future. Figure 7 shows our work in progress, the emerging PCM of *The Future: One Mighty River*.

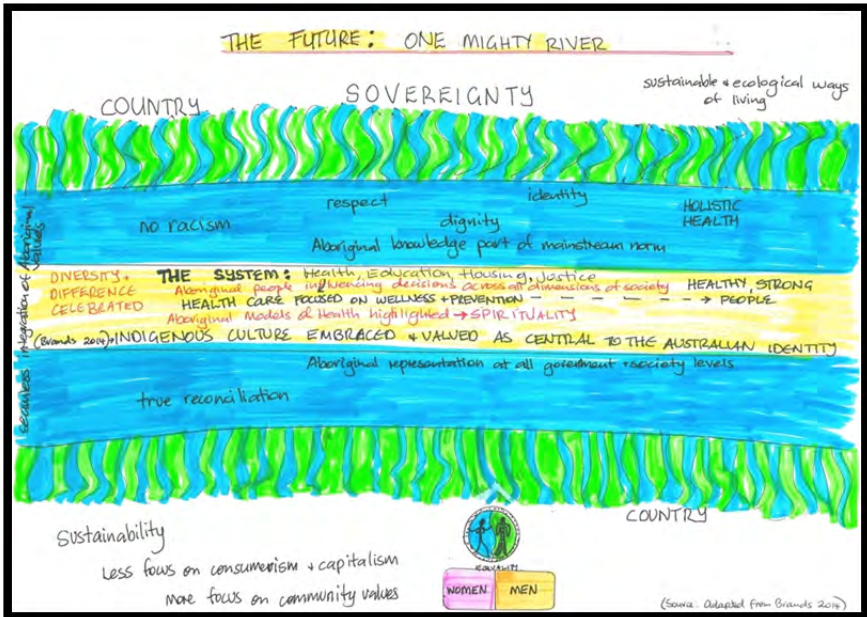


Figure 7: Pictorial Conceptual Metaphor – *The Future: One Mighty River* (Source: developed from the research)

Pictorial Conceptual Metaphors as a catalyst for systemic change

We believe that PCMs are a powerful way of illustrating systems. They capture the cumulative effects of past policies and practices and present a metaphor for an entire system in the way that it is understood by participants who are part of that system. PCMs allow for the synthesis and communication of complex concepts to

diverse audiences. They align closely with the pictorial conceptual models used within the eco-sciences (DEHP 2012) and add the power of metaphor to create new understandings and share social and cultural knowledge (St Clair 2000).

Developing and working with PCMs can help researchers to interrogate their work and develop new understandings. Developed PCMs can become a site for discussion and understanding – both within research teams and with the broader community. Pictorial representations can help to capture and explain complexity. The Pictorial Conceptual Models developed from our literature review of gendered Indigenous health will inform our approach to lobbying for change to the health system, with the aim developing a more equitable, less discriminatory system that better serves all peoples in Australia.

The work undertaken by our team enabled us to think, critique, and develop new thinking. It lead us to the understanding that PCMs are a powerful way of telling the story of colonisation and its inherited, cumulative and continuing impacts on Indigenous people's health and wellbeing. They allow the past, present and future to be viewed within one picture. They help to illustrate the factors that create the 'system', highlight the impact that the system has on Indigenous peoples, and help to initiate change. Importantly, they offer a participatory, respectful way of reflecting on systems and developing new thinking.

PCMs provide a method for 'seeing the system' from the perspective of the people involved in it. Before positive change can occur, we need to identify the dynamics and find the points of potential change. 'We suggest that this new way of communicating can potentially unlock understandings across systems, initiate systemic change and contribute to developing a health system that better serves the health needs of Indigenous Australians.

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Negotiating the right path: Working together to effect change in healthcare service provision to Aboriginal peoples

Michael Wright and
Margaret O'Connell

Abstract

This paper outlines the centrality of a Nyoongar worldview to an engagement framework designed with the Nyoongar community to enable the community to work meaningfully with service providers in the mental health and drug and alcohol sectors to bring about systems change. This paper follows on from a previous paper by the author (Wright 2011) in which the principles and methods of both Indigenous research and participatory action research are explored in relation to each other as a way of mitigating the delegitimising effects of colonisation. Privileging a Nyoongar worldview disrupts the dominant western paradigm so that service providers and the Nyoongar community can meaningfully work together to change the way services are provided to Nyoongar people experiencing mental health and drug and alcohol concerns, and indeed offer a way forward in working with other Aboriginal communities.

Key words

Worldviews, Nyoongar culture, Nyoongar worldview, mental health and wellbeing, shared understanding, difference, dialogue,

engagement, systems change, community based participatory research, Indigenous research

Introduction

This paper will describe the challenges being experienced by Nyoongar¹² peoples, in particular Nyoongar Elders, in their efforts to negotiate mainstream Australian society. Both authors are research colleagues on a mental health research project (*Looking Forward* Project) working with the Nyoongar community living in the southeast metropolitan suburbs of Perth, Western Australia (WA). One of the authors is a Nyoongar man, who is the chief investigator and the other is a *nyidiyang*¹³ woman raised in a small farming town in the southwest of WA. Our paper explores our understanding both of the differences and similarities experienced by Nyoongar Elders and service providers in their interactions as they work together to effect systems change in the mental health and drug and alcohol service sector, based on findings of the *Looking Forward* Project.

We begin with what we believe is both necessary and critical for people who are not Nyoongar (*nyidiyang*), and that is to ask; how can they truly work with Nyoongar peoples in ways that will advance the process of decolonization (Wright, 2011; Tuck and Yang, 2012)? What is not fully realised is an understanding and acceptance of these decolonising acts as being central to sustainable and meaningful change. The work of decolonization is not easy for it requires critical inner reflection that may give rise to feelings of inadequacy, and on occasions an intense sense of displacement. Therefore, as you would imagine, the work is challenging, perplexing and perhaps even scary, and if not well

¹² Nyoongar peoples are the First Nations people represented by 14 clan groups located across the southwest region of Western Australia.

¹³ Nyidiyang is the Nyoongar word to describe a Non-Aboriginal Anglo-Saxon person.

understood could result in withdrawal (Hopper, 2013). Our aim is to keep participants in a 'communicative space' enough to work through these challenges, and we see that being in relationship with each other enables this.

This paper is structured around four themes. The first explores the uniqueness of a Nyoongar worldview, and for this paper we will provide examples of what constitutes a Nyoongar worldview, through interviews with Elders and forums conducted with community members in 2014 and 2011-2012 respectively. The second theme describes the participatory action research process undertaken for this project, underpinned by Aboriginal ways of conducting research. The third theme is the story of the unique approaches by Nyoongar Elders and service providers in their process of working together, underpinned by relationships informed by a Nyoongar worldview, characterised by trustworthiness, reciprocity, adaptability and inclusiveness. The fourth and final theme explores the implications of 'breaking new ground' through this process of engagement.

To begin, we first 'place' our research so that we can acknowledge that relationships are not just with and between people, but also with the world around us. In our case our research takes place on Wadjuk *boodja*, that is, the Perth metropolitan area and we pay our respects to Elders past and present and in particular thank the Elders – as co-researchers – with whom we are working.

Although we may share the same time period and the same physical space, we construct and shape the world according to our lived experiences. Understanding the uniqueness of worldviews, we believe, is the main concern, for even though as Australians we share the same place, geographically, our experiences shape our views in a diverse range of ways, informing our values, beliefs, attitudes and behaviours. So too, as with other Australians, Nyoongar peoples have a unique worldview (Wright et al, 2013). It is the uniqueness of a Nyoongar worldview to which we now turn.

Throughout the development of the *Looking Forward Project*, in consultation with Nyoongar community members, and in

particular with Nyoongar Elders, we have come to understand the unique worldview embodied by Nyoongar peoples. It is lived through the interconnectedness of kin, community and country. For mental health and drug and alcohol service providers, developing a working understanding of a Nyoongar worldview is central to the change efforts they undertake alongside the Nyoongar community. Our findings demonstrate that when *nyidiyang* are open to and accepting of a Nyoongar worldview, the shift in intention is profound and in turn becomes an intention shared with the Community, an intention that is, to change the system that continues to disenfranchise and re-traumatise Nyoongar clients and their families (experiencing serious mental illness). Intent is also about both understanding the needs and aspirations of Nyoongar peoples, and being prepared to investigate and critically inquire into any doubts, concerns and aspirations on both a professional and personal level. The beginnings of a meaningful relationship are now being formed.

Worldviews: not same, not different, but unique...

In this article we are mostly concerned with the critical question of 'what does it mean to be Nyoongar?' In posing this question we do not seek to ignore a *nyidiyang* worldview, but instead we aim to create a space that enables a Nyoongar worldview to be realised unimpeded by the dominant paradigm that shapes our modern way of life. For service providers, being introduced to the unique qualities that comprise a Nyoongar worldview will provide a better understanding of the practices they develop to respond effectively to Nyoongar clients and their families (Wright et al 2013). Activities such as trips on country, listening to and telling stories, sitting with Elders sharing food, learning about family, and so on, all enable service staff to directly experience aspects of a Nyoongar worldview. The relational process of explaining a Nyoongar worldview, provides an understanding of what (re)shapes the *nyidiyang* perspective in the context of unique representations of culture.

We now introduce the concepts of *not same* and *not different* in relation to developing an understanding of worldviews other than our own, so that we can inquire more deeply into the ways in which our respective worldviews offer us a *unique* perspective on the world in which we live. Recognizing the concepts of *not same* and *not different* in respect to worldviews is a critical part of the decolonizing process when working with Indigenous peoples. It is our view that *not same* and *not different* serve to move the debate away from extreme polarity. The Nyoongar and *nyidiyang* worldviews share the same geographical and sensory space but their perception on the physical, spiritual and intellectual levels are, at first glance, often seen and perceived as being very different. But we say they are not different, yet not the same, but unique, for it has been our experience in working with the Nyoongar Elders and service providers that, through a process of shared storying, connections are fostered and we see a way forward and thus, the realization of *not different* and *not same*, therefore *unique*.

The title refers to the concept of 'negotiated space', and we believe, effective research works on the principles of transparency, honesty and authenticity. Working in this way will result in degrees of tension. Robust and honest human interaction will always invoke tension, and researchers should not be afraid to encourage tension, for it will validate and legitimate their work. The following quotes from the *Looking Forward* Project reflect the negotiated nature of the tension in our work together.

'I'll be honest; there have been times when it's been incredibly uncomfortable just because I've never sat around the table with Aboriginal Elders before. My sense is that - or my feeling is that if you put me in a room leading a meeting amongst service providers or with other staff, I know the unwritten ground rules and I know how things work and how things operate but if you put me in a group, and [that's been] around this very table, any meeting with Aboriginal Elders, I don't know what the unwritten ground rules are and I'm learning very slowly. They've been very welcoming and very approachable but just from myself, I just think having a complete lack of confidence in myself to know what is appropriate...' (Service Executive staff member, 2014).

We had a lot of problems with schools, you know, with the little ones when they start kindy and pre-primary. The teachers would use this big long sentence on them and the kids didn't - you know, our language at home is all cut in half, hey? You know, we don't use every word in the dictionary to make a point come through (Elder, 2014).

In our attempts to answer what constitutes a Nyoongar worldview we consulted with those who are the holders of cultural knowledge and wisdom: Nyoongar Elders. The Elders are very generous and provide many accounts of being Nyoongar and, in very typical Nyoongar fashion, not only describe but embody what it means to be Nyoongar through a process we call *storying*. There is not the space in this article to discuss storying in great detail; it is a topic for another paper in its own right. However, we can say that the practice of storying is both the means to encounter and engage with the spiritual dimension of life. It allows for a process referred to as *circularity* (Styres, 2011). Circularity, according to Styres,

...represents wholeness and connectedness that brings all of creation together in a circle of interdependent relationships grounded in land and under the Great Mystery. The Great Mystery is generally seen as a creative force that finds expression through land in all of its abstractedness, concrete connection to place, fluidity and interrelatedness (2011, p. 718).

This state of connectedness is something of a new experience for service staff, particularly as personal stories are not often advocated in the mental health workforce itself (although, ironically, clients reveal detailed and complex personal histories to practitioners who themselves remain an anomaly to their clients). Service staff struggle initially in making sense of the stories the Elders tell, taking them at face value. Over time, however, service staff begins to experience the circularity in their engagements with the Elders and find they can reciprocate in a similar way as they begin to tell their own stories. It seems then that stories teach us how to sit, listen and learn.

Storying is central to Nyoongar peoples' ways of being and doing for it enables engagement and inclusivity, and is critical in

understanding both the depth and closeness of relationships. In practical terms it also serves to connect people over space and time to remember, place and recall people and events (Styres 2011). The story of colonization is one such phenomenon that can be redressed through a (re)telling of past events from a Nyoongar point of view so as to even out the playing fields of history (Wright et al 2013a, 2013b).

We struggled with trying to formulate or translate a Nyoongar worldview by using concrete examples, which we discovered, were totally inappropriate. In our view it is virtually impossible to try and describe the Nyoongar worldview as a concept in concrete terms. As we sat in the garden of one of the Elders, amongst the garden art made by her grandchildren, and listened to the stories of family and traversing country, we realized that the Nyoongar worldview cannot be perceived, conceptualized or constrained within a narrow definition of a concept or a theory; it must be experienced and witnessed firsthand.

You learn a lot just by camping and sitting round a campfire...because that's the way people used to get things sorted out. Sitting round a campfire can also be used as a healing for you because it makes you feel good and it's amazing but when you look at a campfire you see things in the campfire and then ideas come from that campfire. You're not only getting a feed from that campfire but you're getting ideas [in your head] and when that smoke comes through it's cleaning - actually helping to clear your lungs and it's clearing your eye ducts, so when your tears - you get a lot of tears - it's doing you good...(Elder, 2014).

For service staff, learning happens on country and through listening to Nyoongar Elders tell stories of country and thus, more deeply and directly connecting to what it means to 'be Nyoongar' by sitting with or walking alongside them. Culture is a dynamic process, and Nyoongar law and culture is continually adapting to suit constantly changing situations (Host and Owen 2009). Nearly always, Nyoongar communication, whether through language, song, dance or art, embodies and conveys the spirit of, land, family and kinship. Within the experience of engaging with a Nyoongar worldview there is unlimited potential for anything to happen, in

particular, we have witnessed a stronger and more direct experience of the meaning of, and relationship to, country by service staff.

***Lessons Learned:** Understanding the concept of not same, not different, but unique has been a critical learning for the project team. Often greater emphasis is placed on difference, which then frames a dichotomy of us and them. The ongoing negative portrayal of Nyoongar people is a constant struggle with the community, which impacts on the access and responsiveness of service delivery. Therefore, as a research team, we are determined to model to service providers that our interactions with the Nyoongar people be open and inclusive. A key lesson learned during this period for the team is that Nyoongar people still carry deep scars from past interactions with both researchers and service providers. They, with good reason, have deep misgiving about the motivations of service providers. Therefore, we believe that all those who work with Nyoongar peoples have a responsibility to ensure that their interactions are both moral and ethical, as well as being open to a decolonising process.*

Clearing the obstacles on the path of research: A space in which to relate...

Our research process is based primarily on an Indigenous research paradigm. It has been inspired and guided by an 'Indigenous research framework', underpinned by the research and writings of other Indigenous scholars and researchers (Chino and DeBruyn, 2006; Smith, 2003; Rigney, 1997; Moreton-Robinson, 2000; Watson, 2004, Wright, 2011), and by researchers working with a 'participatory action research' focus (Cornwell & Jewkes, 1995, Stringer, 1996, Wallerstein, 1999, Pyett, 2002, Khanlou & Peter, 2005), 'emancipatory research' (Lather, 1991; Freire, 1983; Wallerstein & Sanchez-Merki, 1994, Fine & Weis, 2005), and community development (Gilchrist 2009, Ife, 2013)

A key objective of our research activities is to engage in practice that facilitates the process of decolonization in society (Alfred, 2009). It is our view that engaging in a decolonising research

process should not be either coercive or repressive, but offer hope and new opportunities, as Alfred states:

Beyond the effects on the individual, it is a real tragedy that First Nations people are generally wanting of the inspiration and support that healthy and cohesive communities provide. Cultural dislocation has led to despair, but the real deprivation is the erosion of an ethic of universal respect and responsibility that used to be the hallmark of indigenous societies (2009, 718).

Facilitating decolonization at a societal level is a key aspiration of the project, and we believe decolonization can begin by engaging organisations and communities and enabling more meaningful relationships with the people in them. The application of a participatory and collaborative research framework initiates the decolonising process through by privileging a Nyoongar worldview (Wright, 2011, Fredericks, 2011, Tuck, 2009, Dudgeon P, 2008, Duran et al, 2007). In so doing, the dominant worldview through which the western mechanisms, structures and value systems are produced and supported recede to the background, giving ground to Nyoongar mechanisms, structures and value systems so that they can stand in their own right. A critical aspect of our research and knowledge exchange has been to tell the Nyoongar story of colonisation. In doing so, *nyidiyang* are invited to (re)view past histories as complex, contested and storied for the benefit of the coloniser. When Elders tell of their own experiences of the impacts of colonisation, *nyidiyang* witness a lived history rather than a written history. Such direct engagement cannot be taken lightly, for it is in these exchanges that service staff undertake profound shifts in their thinking, based on these firsthand accounts in response to colonising forces. In their telling, the Elders are effectively re-legitimising Nyoongar culture, by acknowledging past acts, so that decolonising processes can take hold. It is only then that Nyoongar peoples and *nyidiyang* can truly come together to create a shared future. Service staff are irrevocably changed.

'Every time I go away from these [working together] meetings I feel I can no longer walk on the land in the same way again'
(Service Board Member, 2014).

We are continually mindful that trusting relationships are critical when engaging in decolonising research and practice. Real change will only occur for Nyoongar peoples and the mental health and drug and alcohol system at large if we work together to dismantle the colonialist structures and systems that continually exclude and marginalise Nyoongar peoples.

***Lessons Learned:** Research is still a thorny issue for Nyoongar peoples, as research conducted in the past has been disrespectful, misguided and caused harm. The negative perceptions held by Nyoongar peoples about the motivations and purpose of research has been a constant presence for our project. As you would expect the project team are reminded continually by the Elders of the purpose and intent of the research for they 'carry their people on their shoulders'. As researchers it is invaluable for us to have the Elders remind us to maintain our purpose and intent. We are therefore, determined that our research process be both transparent and inclusive.*

Understanding the nature of relationships: Being in relationship with...

Relationships bring us together so we can better understand our shared histories. It is through connecting to Nyoongar Elders and peoples that a deeper understanding and appreciation of shared histories can become the new reality, shaping new possibilities as well as shared understanding of health, wellbeing and identity. There is the need to open a new communicative space that allows for critical discussions to reshape mainstream systems so they are relevant to Nyoongar peoples in their everyday lives and, in the case of the *Looking Forward* Project, their health and wellbeing. Relationships are neither passive nor neutral and the relationship qualities of trustworthiness, inclusivity, adaptability, and reciprocity are what service staff need to demonstrate in their practices. These qualities further refine our 'working together' methodology and sharpen both the engagement process and the protocols through which, together, Nyoongar Elders and service providers engage (Wright et al 2013a, p. 51-52).

Relationships can have multiple meanings, so it is important to establish trust. Trust arises out of our emotional connections and is thus foundational to our relationships (Styres 2011, p.723). It is the foundation for our new learnings about and understandings of our differences and the guiding principle that enables us to value these differences as being unique. Elders understand the importance of experience and its transformative power. They know this through their own lived experience. The notion of *not same, not different, but unique* is borne out of reflections on self rather than on the 'other'. If we are to transform systems we need to consider first what we must change within our being so that we can translate those capacities we must hone that then will transform systems. In their conversations with service staff, the Elders often recall experiences of colonisation. In turn they often challenge service staff to try some cultural adaptation of their own, because the Elders continually remind us that they have had to learn the 'white man's ways' in order to survive, and that they are still here today.

First Nation researcher Eve Tuck speaks of the concept of collectivity, which she describes 'begins with the group, and stretches to include, celebrate and support the diversity of its members' (2009, p.62). Collectivity in a Nyoongar context means the recognition of family, community and connection to country as elements that provide sustenance, and a sense of identity. So too, reciprocity involves obligations that ensure the continued functioning of culture, family and community through practices that reinforce these values. For organizations to have relevance for the Nyoongar community it is critical that they have, (i) an understanding and respect of the concepts of reciprocity and collectivity in a Nyoongar context, and (ii) a genuine commitment to engage in the practice of reciprocity with the Nyoongar community, such as realigning their resources to more directly support families. The Nyoongar Elders involved in the *Looking Forward Project* have displayed patience, courage and determination and have willingly and generously shared their wisdom with service providers in working for and on behalf of the Nyoongar community.

Lessons Learned: *The respect and mutual trust between the Nyoongar Elders and senior management has been the foundation practice in developing relationships that exhibit the four key qualities of trust, inclusivity, adaptability and reciprocity. Findings from the Looking Forward Project have showed that Nyoongar peoples want services to work more closely and collaboratively with them through the sharing of ideas and resources. They want better access to services and for services to be more responsive to them. Nyoongar peoples voice their resilience but want services to support them by shifting resources to ensure their capacity is sustained. This is an active and significant step in the decolonising process.*

Breaking new ground, or giving back ground...

Relationships are the key for effective research practice, as they are for highly responsive and culturally secure service provision. There is emerging research on the positive power of social and interpersonal relationships (that is, between patients, families and health care staff) in health care settings. Some say, for example, that social and spiritual support through interpersonal relationships can positively affect the family and significant others of an individual receiving care, influence the medical decisions made, and enable people to see a way through their suffering (Kane 2004, p. 181). People who have a strong web of active relationships exhibit greater sense of personal control, self-esteem, meaning and self-concept and are better able to access resources to support their health and wellbeing (ibid, p. 182).

There will always be points of difference when engaging in research with groups who have historically been marginalised and disenfranchised. Participatory action research approaches work in ways that can be both decolonizing and empowering. This type of research can be liberating for both researchers and participants, and in the case of the *Looking Forward* Project, undoubtedly for service providers. One of the authors (Wright 2011) wrote about how practitioners should approach research as a

...form of intervention that dismantles oppressive systems and empowers participants to seek and demand change. Research as an intervention should be the aim for researchers – research about

action and change should both challenge and transform systems
(2011, p. 41).

We believe that the *Looking Forward* Project is progressing the ideal research that dismantles oppressive systems and empowers Nyoongar Elders to be the agents of change. The system is being challenged and changed, not by researchers but by the participants, that is, Nyoongar Elders and service providers, together. We are very confident that change will occur, for we are witnessing such change emerging. This is a new paradigm for working, shaped by the Nyoongar Elders who have wholeheartedly taken up the opportunity to drive the change, and it is truly exhilarating.

Finally, we often speak of the resilience of individuals and communities. We often speak in terms of it being a 'badge of honour'. Unfortunately, it refers to the strength of the individual or community, and then nothing more comes of it. As Kim Hopper states;

The one pays tribute to human resilience; the other, to targeted investments that can substantially enhance such resilience-to undertaking the necessary social work of accommodation to expand real opportunities (2007, p. 870).

Resilience is a wonderful attribute but to truly sustain and enhance resilience requires investment in both knowledge about what constitutes resilience as well as the frameworks and practices that develop and grow it.

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For further information about the *Looking Forward* Project please visit the Project webpage:

[http://aboriginal.telethonkids.org.au/centre-for-research-excellence-\(cre\)/looking-forward/](http://aboriginal.telethonkids.org.au/centre-for-research-excellence-(cre)/looking-forward/)

Biographies

Dr Michael Wright is a Yuat Nyoongar man, from Western Australia. His mother's and grandmother's boodja (country) is just north of Perth in a region known as the Victoria Plains, which includes the townships of Mogumber and New Norcia. He has worked across the spectrum of health as a practitioner, policy officer and researcher and has extensive experience in Aboriginal health and mental health. Michael is Chief Investigator on the *Looking Forward* Aboriginal Mental Health Project, which began in 2011. The Project follows on from his PhD work investigating caregiving experiences of Aboriginal families living with serious mental illness. He is a Research Fellow at the National Drug Research Institute, Curtin University.

Margaret O'Connell is of Celtic Australian descent, born in Perth and raised in the southwest of WA on Nyoongar country. She works as a Senior Research Officer on the *Looking Forward* Project and is based at the Telethon Kids Institute, University of Western Australia. Margaret is an educational designer (MEd) and action researcher who has worked in the community, TAFE and tertiary education sectors for the past decade. Margaret has experience in project management, strategic development, and training and professional development, particularly in online teaching and learning, and has a particular interest in the development of reflective practice, action inquiry, and community-based participatory research methodologies.

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Scaffolding of task complexity awareness and its impact on actions and learning

Pia Andersson

Abstract

This paper reports results from action research involving representatives of different organizations charged with the task of developing solutions to a challenging issue. The first purpose was to explore how the representatives' conceptions of the issue under consideration and of strategies to manage the issue changed through participation in a facilitated group process. The group process was designed to scaffold increased task complexity awareness, using a method called The Integral Process for Complex Issues. The second purpose was to examine if participation lead to generalized learning still present three years afterwards. The process resulted in a reformulation of the original problem description and novel action strategies. In the result section I outline how these new strategies were formulated at a higher level of task complexity, by drawing on theories and frameworks developed on the basis of empirical research on adult development. Follow-up interviews three years after the project was over showed that learning about task complexity had remained.

Key words

Action research, adult development, group facilitation, scaffolding, stakeholder awareness, task complexity

Introduction

As a “systematic process of inquiry” (Wilkinson & Ehrich, 2000, p. 5), action research can offer a powerful approach for facilitating collaborative learning and transforming structural problems in organisational contexts (Kemmis & McTaggart, 1988; Wilkinson & Delahaye, 1995). By facilitating critical reflection, action competencies can be improved – individually as well as collectively (Baskerville, 1999).

In this study I used a multi-phased process designed to increase the stakeholders’ ability to recognize, handle and potentially foresee task complexity, while and by working on a chosen issue of concern. This ability is referred to as *task complexity awareness* (see figure 1); a term with roots in adult development theory (Jordan, 2011).

A central concept for this type of capacity building is *cognitive scaffolding*. On a general level, scaffolding can be explained as a cognitive support structure that enables individuals to raise their ability and make it possible to complete tasks that otherwise may be too difficult to perform (Commons & Goodheart 2008). The term scaffolding was first used in the cognitive domain as a metaphor for interactional support of children’s learning processes (Wood, Bruner & Ross 1976). The term is now widespread in contexts of learning and skill development and refers to the support provided by methods and facilitation (Jordan 2014). An important premise is that, while all aspects of complex issues are connected and interacting, boundaries need to be identified and drawn during an inquiry process. How to do this in a meaningful way is crucial (Midgley 2003), and therefore an important function of scaffolding.

Participatory processes are critical for collaborative decision-making, so that multiple perspectives are brought forward, included and integrated (Hammond 1999). An adjacent and central function is therefore to scaffold increased *stakeholder awareness* (see Figure 1), by the exploration of different perspectives, interests and views of the participants.

My point of departure is that a facilitator – as well as the methods that are used – can play a significant role by scaffolding certain functions to make a participatory process more productive.

This article has two purposes. The first purpose is to report how the conceptions of a problematic issue and what ought to be done to resolve it were transformed, when a group of stakeholders from different organisations unpacked the complexity of interconnected conditions, causes and consequences through the structured process. The stakeholders' aim was to develop a strategy to manage security issues by improving the collaborations between the ambulance service, SOS Alarm¹⁴ and the police, in a Swedish region.

The second purpose is to find out whether the experience of participating in the process lead to generalized learning of how to manage complex issues and if this was still present three years after the actual process.

Background

The process used in this study –The Integral Process for Complex Issues (TIP) – is the result of an integration of adult development theory, structured public discourse and public issue analysis (Ross, 2006b). While I am not a systems theorist, I have found that TIP shares many objectives with other methods that have a firm base in systems thinking, such as Soft Systems Methodology (Checkland & Poulter, 2006). Adult development research provides analyses of differences in the complexity of how adults construct meaning; particularly in problem solving (Commons 2008; Jaques & Cason 1994; Kegan 1982; King & Kitchener 1994). Through the adult development perspective, several levels of systems thinking can be distinguished and explained as an increase in complexity (Ross 2008; 2010). These distinctions are significant for assessing societal challenges and the role of cognitive scaffolding.

¹⁴ SOS Alarm is the name for the Swedish emergency service centres.

TIP functions as a modular process, where each module by iteration focuses deeper into the layers of the complexity of the issue that has been selected (Ross 2007). The structure of TIP is consistent with the concept of hierarchical complexity, meaning that each task in the process demands a certain level of performance (Commons 2008) of increasing task complexity¹⁵. While primarily developed for deliberative purposes, TIP has later been used in other settings in Sweden (Andersson 2009; Jordan, Andersson & Ringnér 2013; Turunen 2013).

Tailoring the process for Swedish contexts and organisational settings has been an ongoing process over the last ten years. It was found that even a limited portion of the process design proved to support motivation, hope and clarity for the participants (Andersson 2009; in press).

So far, few case studies based on facilitated group processes have been researched within the context of adult development theories. Previous studies on TIP were based on interventions over a shorter timespan (Ross, 2007; Inglis, 2011). This is the first case study based on adult development theory that has studied long-term learning effects of a facilitated group process in an action research project.

Key analytical concepts and earlier research

Task complexity awareness

When an issue is complex, stakeholders need to develop insight into the relevant conditions in order to be able to design effective strategies for managing the issue. Jordan (2011) proposes that elaboration is a key element to look for when assessing task complexity awareness (see Figure 1). When there is a lack of elaboration, there is an indication that there are “areas of the map that are invisible to or only vaguely apprehended by the individual”, making these areas of the map “unavailable for

¹⁵ It is beyond the scope of this article to delineate this further, but the interested reader can find a model that shows how TIP scaffolds increased understanding of task complexity in Ross, 2008.

conscious cognitive processing” (Jordan 2011, p. 27-28). Salner (1986) argues that if actors are not able to understand relatively simple systemic concepts, they will not be able to grasp the complexity of organisational dynamics, without first changing their epistemic understanding (Ison 2008; Salner 1986). A difference in epistemic assumptions about task complexity relates to whether a person *notices* complexity when being faced with a task, or *expects* complexity when approaching a task. Jordan refers to this as different steps of consolidation in task complexity awareness.

Type	Unelaborated	Elaborated
Task complexity awareness	<ul style="list-style-type: none"> No or unelaborated reasoning about causes. Explanations limited to fixed properties of persons, collectives, organizations Absence of discussion of context-specific circumstances Possibly: voicing of undifferentiated opinions about persons, collectives and/or phenomena. 	<ul style="list-style-type: none"> Elaborated reasoning about complex causes and properties. Issues are explored in a differentiated way and variability is noticed. The conceptual repertoire includes words for systemic properties. Tasks are constructed at different levels of complexity, including goals regarding influencing systemic properties.
Stakeholder awareness	<ul style="list-style-type: none"> Absence of elaborated descriptions and reflections about other stakeholders When other stakeholders are mentioned, there is no or very unelaborated reasoning about their patterns of behaviour, concerns, motives, reactions and views. If explanations of actions of a stakeholder is offered, it is limited to attribution of fixed properties. 	<ul style="list-style-type: none"> Frequent mention of different stakeholders with elaborated comments about their concerns, thinking, interpretations, feelings, patterns of behaviour, etc. Descriptions of properties of relationships between different stakeholders. Formulates goals regarding establishing good working relationships with stakeholders, with mention of strategies adapted to realistic images of properties of stakeholders.

Figure 1. Differences in task complexity awareness and stakeholder awareness. Adapted from Jordan, 2011.

Stakeholder communication across domains of knowledge

A characteristic of decision-making in public sector organisations is that stakeholders often operate from distinct, specialized knowledge (Kernick 2005). A framework of three increasingly complex boundaries, as well as progressively complex processes (Carlile 2004), can be used for understanding task complexity when stakeholders need to communicate across knowledge domains. The framework points out significant challenges when stakeholders are dependent on each other's knowledge (Carlile 2004; Franco 2013). When dependencies increase between them, "the complexity and the amount of effort required to share and assess knowledge at a boundary" increases (Carlile 2004, p. 557). At the syntactic level, stakeholders need to *transfer* knowledge when they have different jargons, symbols and labels, to find a *shared language*. At the semantic level, stakeholders need to find ways to *translate* knowledge differences, due to specialisation and different levels since they need *shared meaning* in order to solve a common task. At the most complex, pragmatic, level conflicting values and interests must be negotiated. Here stakeholders need to *transform* the knowledge in their own domain, in order to collaborate successfully. Franco (2013) concludes that the overcoming of these three boundaries can assess the effect of the facilitation model.

Previous studies on TIP of particular relevance

Ross (2007) investigated how participants' level of complexity when reasoning about a complex issue changed after using TIP. Binomial test and related measures results were $p < .01$ with large effect size (Ross 2007). Results from the same study also showed notable positive increases in participants' hope and motivation.

Using a single module of TIP, designed for deliberating multiple perspectives, participants reported that the scaffolding allowed them to recognize several important perspectives. The process also acted as a motivator for using integral processes, for future decision-making (Inglis 2011).

Another study, of four groups, showed that task complexity awareness affects hope and motivation in a variety of ways (Andersson in press). The study showed that even in cases where hope decreased for the issue as a whole, certain elements could show an increase. This was explained by new ways of navigating the issue, through increased pathway perception, while simultaneously recognizing the magnitude of the task.

Methodology

The group process, in which TIP-modules were a key feature, and data collected through structured interviews with participants, constitute the main part of the analysis, supplemented with the project's documentations and audio recordings. Interviews were conducted before and after participation, and three years after the project was finished.

In the interviews before and after participation, the participants were asked to explain the issue from their point of view; why it was an issue, how long it had existed, what ought to be done and by whom, and why they thought this was an appropriate approach. In the post-process interview, they were in addition asked to reflect on differences in their understanding. The questions were designed to provide the participant with several ways to elaborate their understanding about the issue. In the interviews three years later, the participants were asked about insights and further learning from the process.

The interviews were analysed inductively (Eisenhardt & Graebner 2007), through a recursive process of recognizing and connecting patterns within the case data, relating to existing theory, and by progressively building new understanding. In the analyses of the interviews before and after the process, changes in elaboration of the understanding were in focus, in connection with reasoning about strategies. The participants' understanding of the stakeholders from the different organisations was also in focus.

The action research project came about as a result of a request from the management of the ambulance service. Informed consent

procedures were used according to Swedish standards for all interviews, as well as data recordings during the group process.

In the remaining part of this section, I will describe the action research context and the group process. The ambition is to explain the unfolding of the process and how new areas of focus emerged while unpacking the initial question, and also how scaffolding functions were used in these different phases.

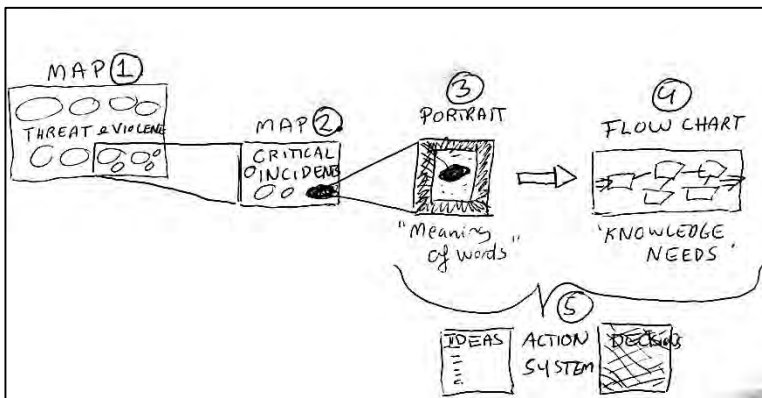


Figure 2. Sketch outlining the five phases

The focus in the first phase: concerns regarding threat and violence

The need for organisational change is often initiated by some perturbation in the external environment (Vurdelja 2011), and not by the initiative of the organisation itself. This was the case when the ambulance staff faced increased levels of threat and risk of violence. This led the ambulance service in a metropolitan region of Sweden to apply for participation in a three-year project on “threat and violence at the workplace”, announced by a Swedish insurance organisation. Even though violence was not of frequent occurrence, threats and harassment were increasing, and as a service-focussed organisation they were not prepared for handling such safety issues. My role was to act as a mentor and facilitator

for the project team at the ambulance service, as well as an action researcher.

An initial half-day workshop with sixteen strategic stakeholders was organised, in order to get a fuller base for the project. During this workshop, the broader topic of threats and violence in the ambulance service worked as a springboard for mapping over 50 interrelated concerns. This was done using a cause-and-effect mapping style, which reveals the topics that are central for the entire map (Ross 2006a). An iceberg model was then used to focus on the hierarchical relationships. Out of these interrelated topics, the stakeholders chose four focus themes. Each theme unfolded new cycles of action and learning, of which this article only covers one: communication between the ambulance, SOS Alarm and the police, during critical incidents.

The focus in the second phase: problems concerning communication between stakeholders during critical incidents

Threat and violence resulted in the need for police support during certain incidents, but when implementing assembly points and time co-ordinations with the police, novel issues arose. The project leader thought that a group of seven hand-picked participants, from the associated organisations, should be gathered to work on this issue, and five two-hour sessions were assigned for the task, using TIP as a way for scaffolding learning. As an introduction, the mapping from the initial workshop was streamlined for the task (see Figure 3). Being given a view of all the connections of causes and impacts on the map, the group was then asked to choose one central issue to focus on.

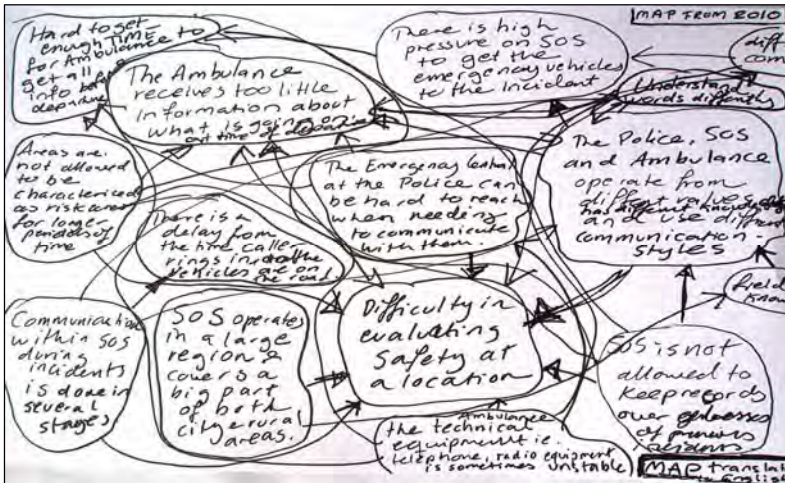


Figure 3. Mapping phase 2 (translated from the original map)

The most poignant concern that motivated the group was the risk of the patient dying while the ambulance waited for the police to arrive, coupled with the risk of the staff being hurt. One participant expressed the difficulties involved, when needing to acutely assess the dynamics of a situation, as “leading to ambulance staff taking too big risks or to an excessive calling for the police, creating the ‘cry wolf’ effect”.

Communication was recognized as a key following a tragic incident when a patient had died while the ambulance was waiting for the police to secure the location. SOS had signalled that the location for picking up the patient was a bit “wild”, which was interpreted as unsafe. As it turned out, there was no threat at the location, although the scene could be perceived as a somewhat “wild” party. Conversely, sometimes the ambulance was told that a situation was safe to enter, when it was not.

This motivated the group to choose communication differences, which were framed as “we do not speak the same language” and “words do not mean the same thing to us”.

The focus in the third phase: reasons for differences in communication

To facilitate learning about this issue, a module called “Problem Portrait” was used. This module involves inventorying what various actors do or fail to do, as well as the attitudes towards the problem that, in combination, contribute to its emergence and continuation. This can be a useful module to unwrap features of the problem that were previously out of sight.

It soon became clear that the group needed to deal with a problem that they only understood from their own perspective, and this came as a surprise to most of the participants. This was a phase of confusion – the so-called “minced meat”, because of the red arrows and lines indicating causal connections. During this process, some participants shared multiple, concrete examples, which led the discussion to associated issues, rather than finding a more concise focus. Some confusion prevailed, and the group could not uncover a general pattern elucidating that words meant different things to them.

The focus in the fourth phase: communication needs during critical incidents

The group therefore decided to approach the subject by investigating the communication and knowledge needs for each organisation. We developed a communication flow chart to illustrate the nature of their path-dependent interaction (see Figure 4). The flow chart enabled a structure for understanding the interactions: thus acting as a boundary object (Franco 2013) between the stakeholders from their respective position on the chart. It then became evident that the police priorities and their need for knowledge were missing from the picture, as the participating police did not work in an emergency central. In the next session, the manager of the police emergency central joined. In the process of clarifying their different levels of priorities and how they made their assessments, the group realized that the police had very little information to act on. This enabled important discoveries about the system’s functioning. For example, the

ambulance service thought that the operator who called the police from SOS Alarm¹⁶ had the same information as it had. Instead, the one with the least information was the one that called the police.



Figure 4. The communication flow chart (in Swedish)

The focus in the fifth phase: strategies to improve the communication flow

Recognizing that the system of interaction was organised inadequately, the group shifted orientation and began to develop strategies on how to give the police adequate information.

At this point, the group's need to learn about their communication issues was saturated. We developed potential action plans for dealing with this issue, as well as other communication needs that had been discovered in the process. After having developed potential action systems to tackle these issues, we processed them by using appropriate filters and criteria, such as scope and comprehensiveness.

The group continued to develop strategies over the following months without facilitation. The work resulted in a new guideline that was launched in the region, including a safety index for SOS

¹⁶ Normark (2002) gives a detailed account of how SOS Alarm is organised.

Alarm to use when there was a risk of threat or violence. The guideline consisted of a step-by-step routine for identifying, evaluating and handling threats. During this period a radio-system that enabled three-party communication was installed in the ambulance service, and was integrated in the routine. Over the next few years, the new routine was put into use in the region and was refined after evaluation.

Results

In this section, some of the differences in the interviews before and after the process will be presented. The results are organised in themes relating to stakeholder awareness and task complexity awareness. Some distinct patterns of remaining participant insights after three years will also be shown.

Changes in stakeholder awareness

Before the group process, all participants advocated the need to understand each organisation better, especially in regards to differences in communication styles. They were aware of barriers that needed to be overcome, but spoke about them in general terms, by advocating the need to “meet and talk”. The communication issues that occurred during critical incidents were explained as gaps of knowledge about the organisations, as well as a lack of adequate routines. While there was some variation between participants, some level of elaborated stakeholder awareness was evident before the process started.

As a result of the process, descriptions of the relationships between the different stakeholders became more elaborated. Participants emphasized the value of a shared understanding; especially by connecting their actions and looking beyond the way their own organisation was operating.

The most noticeable qualitative difference in the participants’ stakeholder awareness was the way they elaborated on the concerns and feelings of others. *“I am working from the inside of SOS, so it is easy for me to say to the ambulance staff: ‘just go there’. But during the group meetings I understood how they may feel in their*

position.” A policeman expressed “It has become clearer to me that when the ambulance staff call for help, they depend on the feeling of having a good contact with the police, and knowing that, when needed, the police can send a car”. A member of the ambulance staff conveyed that seeing the bigger picture helped to offset some frustration over other stakeholders’ lack of showing concern for negative consequences of assembly points. “They have not reflected on how frustrating it is to wait in an ambulance to get to someone who is badly hurt.”

Incorrect assumptions about how the other organisations were operating were revealed, and reflected upon as part of the larger issue.

We thought the ambulance did things in a certain way, and they thought the police did things in a certain way and, in reality we did not know how we all were working. When I saw that, I realized that this problem goes beyond threat and violence; this is really a big problem in all situations, that we know so little about each organisation. [SOS staff]

The quote shows that the participant had begun to understand the systemic properties of the issue – a sign of elaborated task complexity awareness.

Changes in reasoning about the issue and the solutions

In the pre-process interviews, issues that were brought up were most commonly mentioned separately, and suggested strategies were either vaguely described or consisted of selective, isolated measures. Solutions consisted of concrete activities such as meeting and talking; practicing critical events together and teaching ambulance staff to defend themselves. Other solutions involved operational strategies, such as creating a three-party communication channel, removing SOS as the middle hand during critical incidents (so the ambulance staff could talk directly to the police), or to create key codes to mark levels of risk. The contexts of the organisations were described in great detail in many of the pre-interviews, but afterwards, the participants spoke about the organisational processes with increased elaboration. This was noticeable in the increases of differentiated, and nuanced

descriptions of the interactions, as well as more comprehensive suggestions about how to address changes. For example, they advocated the need for collective changes in all three organisations, after having realized that the issues could not be solved separately within each organisation. Participants spoke with expanded understanding of interrelated factors that were needed to comprehend the problem, and when asked about solutions, they responded with several suggestions for tackling different aspects of the same issue.

We found some 'soft' facts, and that we together need to find a common use of keywords so that everybody understands each other. Then we observed some structural problems. Now we have tried to find a solution that deals with both. It may not be the only solution, but from what we have seen now, it is a pretty good solution to an existing problem. [Ambulance staff]

Through the understanding of causes and conditions of the communication issue, the group developed an action system, but the process had also made the difficulties more evident. This was reflected in their decisions to scope strategies to realistic images of what was achievable, given their understanding of the properties of the organisations involved.

Acknowledging task complexity

I have learnt to feel, taste and look at an issue because so many new things come up each time. Not just scratching on the surface, but really grabbing hold of the issue and twisting and turning it around to find the causes behind a situation. Because it is so easy to just state: 'this is the way it is', without considering what caused it to be that way. [Ambulance staff]

Prior to the project, the issues had not appeared as particularly complex. The discovery of the extent of the complexity was not welcome at first, since it resulted in confusion. Having experienced that it was possible to work through the complexity constructively and reach well-grounded strategies was, however, described as a positive experience, leading to a sense of achievement. Following the "minced meat" metaphor, a participant said that: "the minced meat had turned into a well-arranged taco dinner".

Many of the participants emphasized that trusting the facilitator's solidity and approach was a prerequisite for being able to accept feelings of uncertainty and confusion during the process. Some participants conveyed the insight that working with issues of complexity must be given time, space and patience, in order for them to take in all the different views, questions and aspects. Increased task-complexity awareness was experienced as positive, when associated with the possibility to achieve concrete results for improvement. Two participants reported that they realised that there were substantial communication issues in their organisations. While learning about the issue, they became aware of several unresolved dilemmas at their workplaces, involving larger and more generalized patterns of communication.

Resolving knowledge barriers

Transferring knowledge, it is generally assumed that words have the same meaning for the sender and as for the receiver (Bechky 2003). In the first step of the group process, trying to understand why and how words actually seemed to have different meanings were in the forefront of inquiry. Later in the process, the group recognised that one of the reasons for the lack of communication was that there was too little information to begin with, giving room for interpretation. The solutions involved developing keywords for communication during critical incidents that would prevent ambiguity and vague formulations, and gathering more information in the earliest stage. Being integrated in the three-party communication also helped the ambulance staff overcome gaps in the communication flow during incidents. These solutions addressed the first two knowledge boundaries – the syntactic and the semantic level – by finding a shared language and translating knowledge between the organisations (Franco 2013).

Potential value conflicts were not thoroughly addressed in the group process, which meant that pragmatic boundaries were neither explored nor traversed. If the police were to be short of staff, it could result in not prioritizing police assistance, in cases where the level of threat for the ambulance staff seemed uncertain.

This is an example of a boundary at the pragmatic level that could have benefitted from being investigated.

The conditions for handling value conflicts were improved by a deeper understanding of other stakeholders' predicament, but to traverse pragmatic boundaries, a more comprehensive process would have been necessary. For this, other modules of the TIP-design could have functioned as scaffolding.

Status of learning three years later

Three years after the process, new interviews were conducted with five of the seven participants. In these interviews three patterns emerged: the use of models when working on an issue, the value of structure for dealing with issues of complexity, and the trust in one's own ability to use task-complexity awareness when dealing with a new issue of concern.

All of the participants reported that using a structured method for dealing with an issue of some complexity was highly useful. Additionally, two of them said that they sometimes tried to use some of the models when working on new ideas. In three of the interviews, the "minced meat" metaphor was still used to describe the phase of confusion in the process. Several of the participants felt that the use of "*the right tools*" gave them the structure they needed for dealing with the experienced complexity.

Two of the participants in leading roles reported that they used what they had learnt in their daily work. This is how one of them described it: "*I see things more long-term now instead of as little 'emergencies', which strategies so often tend to be. Trying to think step by step about what's going on in different parts, and trying to see the whole picture.*" The other participant expressed that the group process had helped him find new concepts and words for things that he had wondered about. He said that he would now critically examine the methods that were suggested in work projects, instead of taking for granted that any management method would solve the issue if the instructions were followed. In these two cases, there are clear indications of a remaining increase in task

complexity awareness, leading to an expectation of task complexity when entering new situations.

Discussion

The process described in this article consisted of iterating cycles of inquiry, learning and making decisions. In a process designed as progressions of iterations, it is not possible to foresee outcomes in terms of content. It is, however, possible to assist a group in staying focussed in their unpacking of layers of causes, conditions and impacts, in order to develop systems thinking. Being there as a facilitating action researcher, in the midst of the “minced meat” phase, I sometimes felt as confused as the group members did. But learning, through this kind of group process, depends on the ability “to allow for an adaptive sense-making tension of not knowing” (Schwandt, Holliday, & Pandit 2009, p. 203), in tandem with the capacity to scaffold coherence. This was an example of how the structured process of focussed inquiry functioned as a strong form of “attentional support” (Jordan 2014, p 56), when working on a complex issue.

Working in this type of process, the facilitator is helped by reflecting on the principles behind each process tool, since any new decision the group takes requires a fresh inquiry into which functions need specific scaffolding.

Participating in the process, it was clear that the group did not just reorganise information they already had, when developing their flow chart. The previous phases had revealed what the group did not know, but thought they did. Only when they came to the limits of their knowledge, the need for a flow chart emerged. Following their inquiry, step by step, they first uncovered gaps in their own knowledge, then gaps in the functions of the communication system. In this way their task complexity awareness increased. This process resonates with the conception that some existing epistemic assumptions may need to change in order to develop reasoning of a higher level of complexity (Kitchener 1983; Salner 1986).

Conclusion

In this article, a process with an explicit design to support task complexity awareness was described. The study showed how the conceptions of an issue and of strategies for managing the issue might be transformed through a stepwise increase in task complexity awareness. The results pointed out some important qualitative differences in the participants' understanding of the issue and associated strategies, of their stakeholder awareness, as well as of a more general acceptance of task complexity. A second finding was that durable effects on the levels of task complexity awareness were present even three years after the group process. Like in the case of construction work, scaffolding surrounding a building is removed once the work is completed. The follow-up interviews indicated that insights about task complexity stayed, long after the scaffolding. The group members had remaining insights about the significance of using a structured process when needing to deal with issues of complexity. In two cases, participants had consolidated their task complexity awareness, and were using it to critically reflect on processes used in their working environment. Although a small sample, the cases indicate that, to some extent, the structured facilitation managed to orchestrate "a process of learning that can lead to changes in understandings and practices" (Ison, 2008, p. 14).

Limitations

A limitation of this study was that it is low in number of participants, which limits inferences from the findings.

Detailed descriptions about the specificities of the context, facilitator role, method-choices, and stakeholder interactions were accounted for. This approach was taken in resonance with the understanding that any causal effects of an intervention need to be assessed within the whole context of the intervention itself (Byrne 2013; Midgley et al, 2013). In Scandinavia, participatory processes in workplaces have a long and progressive history (Gustavsen 2015). There is a growing societal demand for using research-based knowledge to improve issues that concern health, effectiveness

and sustainability (Westlander 2006). These are cultural conditions that also need to be taken into account.

The case, the process used, and the theoretical frameworks described, together outline an approach for reflecting on scaffolding functions related to task complexity awareness and stakeholder awareness. Methods and processes sprung out of different fields have evolved to understand and handle complex issues in different ways (Midgley 1991; Mingers & Brocklesby 1997). Cognitive scaffolding – as implemented in TIP – can add understanding about stakeholder communication over boundaries of knowledge. It can also provide a conceptual framework for assessing task complexity, when designing action research approaches together with stakeholders. From an action research perspective, it is of continuous interest to analyse and evaluate the variety of methods, models and tools that are being used to assist groups in working on complex issues (Sankaran, Leigh & Kruse 2008).

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Biography

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Communal-Photosynthesis Metaphor: Autobiographical Action-Research Journeys and Heuristic-Action-Learning Frameworks of Living Educational Theories

Emmanuel Nii Ayikwei Tetteh

Abstract

This article provides a creative analysis of reflective thought processes grounded in the systemic thinking of an autobiographical account of action-research journeys from the context of action-learning experiences that led to the discovery of the communal-photosynthesis (CP) metaphor. Reflection on the action-learning and action-research (ALAR) experiences, as well as the means by which subsequent heuristic action-learning discoveries unravelled the usefulness of the CP metaphor to account for service-learning experiences, are explored. The CP metaphor usefulness is henceforth explored as a creative-reflective framework for the facilitation of collaborative inquiry in developing a living educational theory of the ALAR model. This article is thus a "creative-reflective methodology" of a participatory action research (PAR) framework for sense-making that can account for people's collective ALAR experiences. The usefulness of source domains of cyclical metaphors corresponding to the action-intention domains of PAR cycles is provided as a collaborative ALAR framework to foster knowledge production of living educational theories of practice.

Keywords

Action Learning, Action Research, collaborative inquiry, communal photosynthesis metaphor, creative-reflective methodology, living educational theory, Participatory Action Research

Introduction

In the action-learning and action-research (ALAR) framework, the development of a theory of professional practice from creative-reflective thought processes concerning learning action spans autobiographical journeys in the production of an individual's living educational theories. The living educational theories account for the self-study actions that provide an explanation of the action-learning experiences of the individuals or practitioners in the direction of their educational values, practices, and claims generated from their action inquiries (McNiff & Whitehead, 2011). Humankind lives and acts in a symbolic system, so the systemic worldviews of metaphor usefulness can give meaning to the action-learning experiences, which is essential to the theory formation of professional practice. This symbolic system signifies the fabric of human nature and life experience in metaphorical terms to give meanings to our interactions (Bertalanffy, 1967). Therefore, the understanding gained regarding an individual's experience that radiates from metaphor usefulness is explanatory for motivating further learning actions and interactions.

To aid in developing such understanding, the creative-reflective thought processes serve as a "creative-reflective methodology" in the identification, development, and usefulness of metaphors for sense-making concerning the human experiences. Metaphor potency provides a creative-reflective methodology for sense-making, therefore shaping the autobiographical account of the individual's ALAR experiences. Zuber-Skerritt (2009) defined ALAR as a "methodology for change, problem-solving, and positive development in situations involving people. ALAR moves from micro towards macro level as its users seek to identify and address difficulties and produce practical and conceptual knowledge by reflecting on their experience" (p. 2). Thus, within

the ALAR framework, the metaphor that serves as a creative-reflective methodology in the sense-making of an autobiographical account can also provide a suitable framework for unified understanding of the collective experiences of people and their professional practices. In other words, within the context of the ALAR experiences, stakeholders might offer diverse viewpoints, but when they are shared through the power of metaphor, they can create consensus or a sense of unanimity to the whole emerging knowledge production process. This also goes to show that the power of metaphor can generate a collective understanding of the collaborative ALAR experiences to advance professional development.

Despite the critical challenges it faced for many decades, ALAR has managed to gain significant currency within the research community, especially within the professional field of studies (Ilisko, 2013; Kinsler, 2010). The contribution that the ALAR field is providing to induce positive social change, foster social justice, improve professional practice, advance organizational service delivery systems, and empower the citizenry has led to critics recognizing its relevance and scientific merit in problem-solving actions (Levin, 2003; Van der Meulen, 2011). As the ALAR field has gained ground within the professional community, the literature regarding ALAR has expanded. After decades of passivity, scientific merit discrimination, and conventional regulation by the research community, more institutions of higher learning have joined the campaign for the advancement of ALAR studies. For example, Capella University in the United States of America, a leader in innovative learning and high-quality education based on competency assessment and development germane to career horizons and organizational vitality, requires all of its professional doctorate programs to focus mainly on action research (AR). As the interest and perhaps participation in ALAR grows, we should ask ourselves, "What are the everyday metaphors that can help us to make sense of our ALAR experiences to better facilitate collaborative inquiry for unified understanding of the collective experiences of our professional practice?" This article provides an autobiographical reflection on the communal-photosynthesis (CP)

metaphor development. The article introduces the CP metaphor as a framework for a creative-reflective methodology to aid in the collaborative inquiry process. The CP metaphor is intended to offer a unified understanding when engaged in collaborative inquiry so that participatory action research (PAR) activities can be better synthesized to shape collective ALAR experiences of those whose interests are at stake.

Autobiographical reflection: Communal-photosynthesis metaphor development

My ALAR journeys started in the pursuit of experiential education from the undergraduate program through the graduate levels at the Metropolitan College of New York (MCNY), formerly Audrey Cohen College. This experiential education program is based on Audrey Cohen's purpose-centered system of education (PCSE). This PCSE is based on the premise that action learning is useful when the knowledge gained or theory derived is purposefully integrated to make a positive change in the lives of the individual learner and the citizenry. Underpinning Cohen's model of ALAR is thus the integration of theory and practice known as the constructive action (CA) research project, which students are required to perform at their field sites, jobs, or internships to effect positive social change.

In 2001, during my ALAR experiences in the graduate degree program at MCNY, I facilitated a collaborative program for service-learning action with student interns to improve institutional enrollment management. The service-learning action is the means by which students can learn and reflect on ways to develop civic qualities and skills, and also apply such essential qualities for civic engagement activities to better address human and community needs. These civic engagement activities involve the collaborative efforts of the service-learning students in becoming socially responsible as agents of change to promote unified actions for the well-being of their communities (Tetteh, 2010). As I reflected on the action research data and tried to make sense of the action-learning journeys that structured my service-learning actions, my intuitive thought processes said, "You must

relate back to your internal frame of reference to search through the various layers in your tacit knowledge base." Moustakas (1990) placed this into its rightful perspective, noting that "to know and understand the nature, meanings, and essences of any human experience, one depends on the internal frame of reference of the person who has had, is having, or will have the experience" (p. 26). Likewise, I trusted my creative-reflective thought processes to reveal what I had learned from my everyday life that related to my professional development of ALAR experiences. Therefore, as I was about to ponder the ALAR data analysis and experiences, my creative-reflective thought processes began appealing to the sense-making process, posing in part as a struggle to resolve certain questions. The questions that emerged were:

- Whom am I becoming because of these action-learning experiences?
- How do I intend to live out my evolving commitment in the experiential action-learning contexts?

As I attempted to find answers to these high-point systemic questions, the struggle in my creative-reflective thought processes intensified until I arrived at an overarching question that embraced both of my questions. I instead considered, "What metaphor best symbolizes my creative-reflective thought processes in the evolving commitment to the practices of the ALAR experiences?" Reflecting upon the breadth, depth, and height of this overarching systemic question to make better sense of it, I went to bed still meditating about the contexts of my entire ALAR experiences. Then at one point, the creative-reflective thought processes began appealing to me, and this turned out to be the most critical moment of arriving at the answer to my overarching question. As I reflected upon the overarching question in the context of my ALAR experiences, the collective experiences of service-learning action that I'd had with the co-participants in the constructive action research project, and especially the data analysis being considered, began appealing to my tacit knowledge base as a "communal" phenomenon of joint efforts. A deepening sense of engagement surfaced as the creative-reflective thought

processes brought me much closer to borrowing the phenomenon of “photosynthesis” from the systemic thinking of the biological sciences. Before I arrived at the preliminary discovery of the CP metaphor, the synthesis of my creative-reflective thought processes rolled into collaboration with Moustakas’s (1994) characterization. He stated that, “From whatever angle as one views an object, from front, side, or back, the synthesis of perceptions, for example, means that a *tree* will continue to present itself as the same real *tree*” (emphasis added, p. 29). I like the way Moustakas described this because I too perceived my ALAR experiences in terms of the plant photosynthetic process.

As I continued to reflect upon the two concepts, my mind felt as if it was about to explode. I then bounced back and forth, repeatedly pondering, and at this point, the initial “a-ha” moment surfaced and started to make sense of the action-learning data analysis in line with my service-learning actions. As Wormeli (2009) argued, metaphors and analogy can bring about “a-ha” moments that the life-lesson experiences evoke to the forefront through the action-learning process. In this case, the connection sought by the usefulness of metaphor and analogy become coordinated with the meaning making and understanding that radiates from my creative-reflective thought processes. Therefore, just as the “a-ha” moment surfaced, I yelled out quite loudly to my spouse, “Gina, Gina, Gina! Please, it is too great! I am catching something, but it is too deep and gloomy to conceptualize.” She awoke and asked terrified, “What is it?” I replied, “It is about a hazy phenomenon making sense of my research data and ALAR experiences.” She responded, “Oh, you really frightened me,” and then went back to sleep. It was at this moment that my metaphor landscape partially unravelled the sense-making of my creative-reflective thought processes: I had discovered the communal-photosynthesis (CP) metaphor. I immediately booted up my computer to type the inspirational insight unfolding of the metaphor. I then formulated and elaborated the metaphor that I called *communal-photosynthesis* (Tetteh, 2001) to account for the action-learning (AL) data and AR journeys that have structured my service-learning actions.

Thereafter, contemplating the need to extend knowledge, clarity, and understanding of the CP metaphor, I decided to pursue the triangulation of the symbolic interactionism approach to action-learning and metaphor-based heuristic inquiry for my doctoral dissertation research from March 2002 through August 2010 at Walden University. The study underscores Moustakas's (1990) view that at the onset of heuristic investigation, the research question and study design flow from the tacit knowledge of the researcher in the quest to extend understanding of the essential meaning that structures human experience. He offered six frameworks to aid in the facilitation of the heuristic inquiry that can account for the autobiographical anecdote of the human experience: initial engagement, immersion, incubation, illumination, explication, and creative synthesis. I thus embarked upon continuous *immersion* into the action-learning data, permitted the data to spasmodically *incubate*, and concurrently encouraged the processes of *illumination* and *explication* from the co-researchers' worldviews to contribute to the *creative synthesis* of the CP metaphor usefulness.

Theoretical Basis of the Communal Photosynthesis Metaphor Usefulness

The literature suggests that the "photovoice" is becoming a useful methodology in community-based participatory research (CBPR) (Wang & Pies, 2010). The *photovoice methodology* involves a reflective process whereby people in the community are provided with cameras to take pictures of their everyday practices and life realities to identify, assess, and use metaphors to define and enhance the well-being of the citizenry, as well as to advance professional practice and community development. The photovoice methodology, however, has not shown how the creative-reflective thought processes in the use of metaphors can be collaboratively facilitated to account for the unified understanding of the collective experiences of the people and their professional practice. In addition, the photovoice methodology is insufficient if the unique voices of the worldviews of people captured through the CBPR are not only reflected upon, but also collaboratively synthesized to contribute to the knowledge

production of professional development. Moreover, the unique contribution of the stakeholders to bring about a unified positive social change exists within the milieu of ALAR.

Greenwood and Levin (2007) contended that the use of metaphors can serve as a powerful function in the processes of facilitating participatory learning to promote social change. Therefore, accounting for unified positive social change requires a collaborative inquiry among the stakeholders, which is most suitable through the PAR framework. The contextual framework for ALAR that can collaboratively induce social change is composed of an actionable learning framework (ALF) *plus* a measurable action framework (MAF). The CP metaphor is thus offered as a unique collaborative framework for reflective thought processes to account for the sense-making of the ALF and MAF processes. Lakoff and Johnson (1980) posited that metaphor involves the conceptualization of thought and action processes in the sense making of our everyday activities. Metaphor conceptualization thus entails thought-oriented and action-oriented processes. Moreover, the separation between thought and action processes is systemically rejected in ALAR (Greenwood & Levin, 2007). Dent-Read and Szokolszky (1993) also theorized that “metaphors originate from a process of resonating to perceptual information in the world [and thus tend to function] as a species of perceptually guided, adaptive action that involves the detection and use of structural or dynamic properties that remain invariant across kinds” (p. 227). This means that the power of metaphors is shaped by the usefulness of their unique systemic structures. Kövecses (2002) viewed a metaphor’s unique systemic structure as being composed of a source domain, from which the metaphor is drawn to understand another conceptual domain, and a target domain that reflects the intended domain to be understood through the source domain. The “target domain” for creating metaphors can also be viewed as the “intention or purpose” domain of the metaphors. Given the action-oriented nature of metaphors, the “intention or purpose” domain can thus be conceived as the “action-intention” domain hereafter being referred to in this article.

Moxley, Calligan, and Washington (2013) debated the usefulness of metaphors when developing prototypes that can induce action and change by *Engaging the Arts, Humanities, and Design in Action Research and the Helping Professions*. Hoshmand and O'Byrne (1996) argued that metaphors serve as useful frameworks that guide practitioner-based action research. Ellis (2005) offered the Sunflower Model as a visual metaphor and applied Kemmis and McTaggart's (1987) four-stage cycle model of plan, act, observe, and reflect to understand the means by which group communication process can be better managed in a collaborative manner. Thus, the visual metaphors serve as useful prototypes of photovoices. Collaborative metaphors, however, can aid in synthesizing the photovoice data, and can also serve as PAR frameworks for creative-reflective thought processes. When the source domain is collaboratively mapped to the purpose domain, it can aid in the facilitation of the creative-reflective thought processes to shape the ALF and MAF framework.

Of the many natural and physical objects used as source-domain metaphors to give meaning to human activities, plant photosynthetic processes are the most cyclically collaborative, inclusive, interdependent, interactive, and participatory activities that constitute direct mutual benefits to humanity and the plant communities. The botanical phenomenon of the photosynthetic process also embodies action processes, so it can constitute an activity-based process for use in the participatory action-learning framework. From an etymological standpoint, the prefix *photo* in photosynthesis means "light," and *synthesis* means "putting together." Therefore, *photosynthesis* simply means "to put together with light." The metaphor of *light* portrays the creative-reflective thought processes of sense-making, whereas the metaphor of *synthesis* depicts collaborative action for knowledge production. It is thus important to note that the function of "putting things together" indicates an activity that fosters collaboration, interaction, and participation.

Another important aspect of photosynthesis is the direct codependency that exists between the five elements or properties of the photosynthetic processes. For example, during the

photosynthetic process, chlorophyll (i.e., the green part of the plant leaves) captures *sunlight energy*, takes in *carbon dioxide* from the atmosphere, and absorbs *water* from the soil through its roots to make *carbohydrates*. *Oxygen* is then released as a byproduct. The generative function by which the plant leaves capture sunlight energy is an object of reflection-oriented action because the act of “capturing” is symbolically associated with the act of reflecting. Moreover, inclusive in the activities of human-plant relationships is the symbolic action of reflection capturing (Hall, 2011; Ryan, 2009). Also, just as photographic action is the composition of the reflection and capturing process, so too in “performance-based learning . . . writing in the form of learning journals and reflective logs is often used as a way of capturing reflection and thought” (Hinett, 2002, p. 4).

The action verb *takes* conveys the generative function that includes picking out, selecting, or choosing, which is figurative of the act of identifying something from other objects to make a selection. Implicitly, it can then be deciphered that the generative function by which the plant “takes” in carbon dioxide from the atmosphere is an identification-oriented action. Notably, the dictionary defines the action verb *absorb* as involving the engrossing, power of gripping, engaging wholly, occupying, soaking up, or swallowing up something completely, all of which are indicative of action-oriented processes or phenomena. This implies that the generative function by which the plant “absorbs” water from the soil through its roots is allegorical of an act or action taking. Furthermore, the dictionary defines the action verb *make* as to bring into existence by shaping or changing material; to make out or makeover, remodel or alter; make a valuation of; cause to become; render; put in the proper condition; fix; and prepare. It can thus be determined that all of the descriptive words that characterize the meaning of the action verb *make* are also suggestive of an evaluation-oriented phenomenon. Thus, the generative function by which the plant “makes” carbohydrates is figurative of evaluation action process.

Finally, the generative function by which the plant *releases* oxygen as a byproduct is also a production-oriented action because the “releasing” of the byproduct is figurative of the act of producing a

product. The supply of water, sunlight, and carbon dioxide are directly dependent upon the facilitation of the photosynthetic processes, so nonparticipation by any one of these properties will truncate entire processes. It should also be noted that the useful and mutual benefits directly associated with the plant photosynthetic processes make the use of photosynthesis more attractively suitable as a source-domain metaphor to give meaning to human actions. Plants are the only living things that can make their own food, and they are crucial to human life because we rely on them as food sources for ourselves. Thus, the plant photosynthetic process is an indispensable source of food that benefits all life on planet Earth, also providing the oxygen we need to breathe.

In addition, the plant photosynthetic process manages an enhanced imbalance of life-threatening atmospheric carbon dioxide (CO₂), so when it steadily increases and is not reduced by the collective activities of the photosynthetic processes; it can contribute to a rise in global temperature, also known as the *greenhouse effect*. This in turn can create a state of insecurity for human adaptation and survival. It also goes to show that as a source domain of metaphors, the plant photosynthetic processes can serve as a participatory action framework in making our world a better place to live and thrive. This article's main focus, however, is on the ways that the CP metaphor can help us make sense of the PAR framework to better facilitate collaborative inquiry for unified understanding of the collective experiences of our professional practice. Just as there are varieties of plants within the plant community, we must also appreciate the diverse viewpoints of stakeholders to better contribute to our professional development.

This *CP metaphor* is hereby defined within the context of this article as an activity-based framework of creative-reflective methodology for the facilitation of the ALAR participatory cycle. This CP metaphor ALAR participatory cycle is a spiral framework for problem identification, collaborative action, reflective thought process, creative evaluation, and knowledge production that can contribute to a unified understanding of living educational theory of professional practice. This CP metaphor employs the five

photosynthetic processes or elements – carbon dioxide, water, sunlight, carbohydrate, and oxygen – as the source-domains of cyclical metaphors. These source-domains of cyclical metaphors are to serve as the metaphor-mapping framework for the activity-based collaborative inquiry processes. Hereafter, these five photosynthetic sources will be referred to as the CO₂WSCO cyclical metaphors. Table 1 presents a participatory typology of the key explanation of the CO₂WSCO cyclical metaphors as used in the context of this article. Likewise, the activity-based participatory inquiry processes inherent in the CP metaphor framework are configured as the *Identify, Act, Reflect, Evaluate, and Produce* (IAREP) model to constitute the corresponding “action-intention” domains of the cyclical metaphors. These action-intention domains of the IAREP model will thus serve as the framework of the PAR cycles in fostering the collaborative inquiry processes.

<i>CO₂WSCO Cyclical Metaphors</i>	<i>Participatory Typology of Key Explanation</i>
<i>CO₂</i>	<i>Source material/property (the phenomenon of experience)</i>
<i>Water</i>	<i>Live/life giving flow (meaning of the human experience)</i>
<i>Sunlight/sunshine</i>	<i>Light so we can see (innate worldview of individuals/people)</i>
<i>Carbohydrate</i>	<i>Energy from insight/covert views or tacit knowledge (newly constructed dynamic understanding of the revised worldviews of stakeholders)</i>
<i>Oxygen</i>	<i>Life sustenance (change or systemic transformation from the participatory action learning process)</i>

Table 1. Participatory Typology of Key Explanation of the CO₂WSCO Cyclical Metaphors

Creative-reflective methodology: Communal photosynthesis metaphor framework of participatory action research (PAR)

Underpinning the PAR framework of the creative-reflective methodology are three systemic interactive utilities: source

domain, action-intention domain, and action-learning domain, as portrayed in Figure 1. The systemic contexts of these three interactive utilities aid in conveying the reflective thinking processes to foster collaborative inquiry and can thereby contribute to meaning-making that shapes participatory action. Thus, these interactive utilities are to ensure that there is creative coordination for the sense-making of ALAR toward the development of living educational theory of practice. Figure 2 provides an illustration of the CP metaphor's activity-based framework for use in fostering collaborative inquiry within the PAR context of the ALAR cycles.

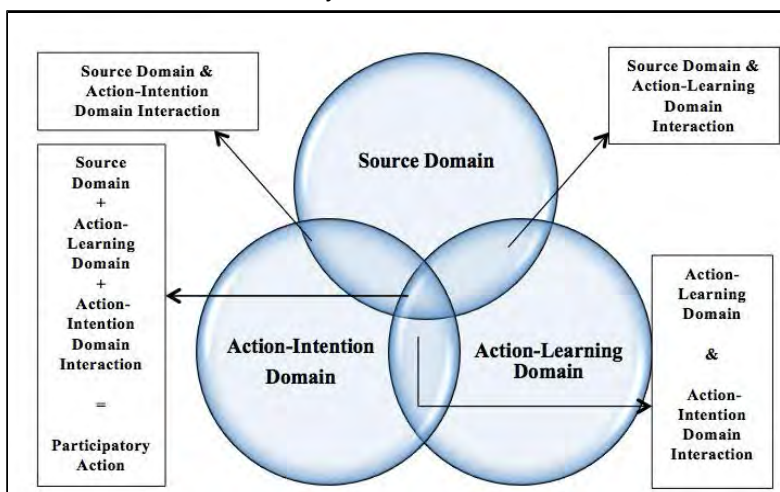


Figure 1. Three systemic interactive utilities of reflective thinking process in fostering participatory action

As depicted in Figure 2, the three interactive utilities – source domain, action-intention domain, and action-learning domain (as also portrayed in Figure 1) – systemically shape each of the five cycles inherent in the activity-based framework of the CP metaphor. As a central focus, these three interactive utilities provide the framework for the creative-reflective methodology by ensuring that a unified sense of purpose and creative-reflective thought processes exist throughout the five cycles. The framework for sense making of PAR becomes problematic when the

dimensions of ALAR orientations are not interactive. Rearick and Feldman (1999) noted that the variations of ALAR are attributable to the unique dimensions for which ALAR tends to be classified, but such “uni-dimensional categorizations do not adequately take into account the complexities of action research” (p. 334). Taking into account how such complexities can be better managed for the sense-making of the collective ALAR experiences, Figure 2 depicts a creative-reflective methodology of the communal photosynthesis metaphor framework for collaborative inquiry cycle. The figure provides an illustration of the CO₂WSCO cyclical metaphors serving as the source-domain framework for the facilitation of the PAR cycle of the IAREP model to better foster the collaborative inquiry process. The creative-reflective methodology of this CP metaphor’s PAR framework is thus explained as:

Source domain: The CO₂WSCO cyclical metaphors of the CP metaphor are used as the source-domain metaphors because they offer suitable collaborative inquiry frameworks for the sense-making of collective activities of people and professional practice. For example, in her recent views on “Reasons Why Metaphors Can Improve the User Experience,” Idler (2012) reflected upon the metaphors used as source-domains on websites that can be attractive to online users to trigger understanding and thereby add enriched meaning to the users’ experiences. She argued that not only is metaphor attractive and useful, but it also “can be a powerful tool for improving the user experience [because] a great way to help . . . users understand abstract content, create a sense of familiarity, trigger emotions, draw attention and motivate action are metaphors” (pp. 2 & 8). She suggested that source-domain metaphors often tend to utilize natural and physical objects such as plants, lights, aesthetic objects, machines, images, symbols, depictions, gestures, pictures, and/or environmentally friendly objects. The National Academy of Sciences (1992) also theorized:

Our understanding of plant life underpins a vast range of activities and touches virtually every aspect of human life. . . . Our knowledge about the world around us is incomplete if we do not include plants in our discoveries, and it is distorted if we do not place sufficient emphasis on plant life. . . . From fundamental

discoveries about plant life arise technologies and capabilities in [a] wide range of practical applications. Only higher plants and few microorganisms can convert light energy from the sun into chemical energy. Photosynthetic organisms are at the center of the earth's hospitality to other life. (pp. 13-15)

That is to say that, just as "photovoice" helps us to derive meanings captured from visual images regarding our life experiences and perceptions of people in the community (Wang & Pies, 2010), metaphor of plant life, especially the photosynthetic processes, can help us make sense of our human activities. Consistent with this idea, Blumer (1969) suggested that we can understand the nature of human interactions from the standpoint that:

- Human actions are connected to the meanings we derive from physical objects such as plants,
- The sense that we make from such objects is the product of our interactions, and
- Distortions in our sense-making processes can be improved by the way we make use of the physical objects to gain a better understanding of our interactions.

Therefore, as depicted in Figure 2 (overleaf), the spiral processes inherent in the creative-reflective methodology of this CP metaphor's PAR framework for the collaborative inquiry cycles, operate as follows:

Cycle A – Carbon Dioxide Metaphor Phase: In this phase, the need-based situations that call for action and learning are identified. During this same phase, the metaphors that might inform understanding of the essence of professional practice, service delivery practices, human activities, and/or organizational improvement can also be identified from the data gathered due to the spiral nature of the cycle.

Cycle B – Water Metaphor Phase: During this phase, the overall goals and objectives that can shape possible strategies to implicate our action plans and professional practice are developed for action taking. The spiral context of this cycle returns the process of collaborative inquiry to this phase to identify the metaphors that

can give meaning to the action plans intended to enhance our professional practice, service-delivery practices, human activities, and/or organizational improvement from the gathered data.

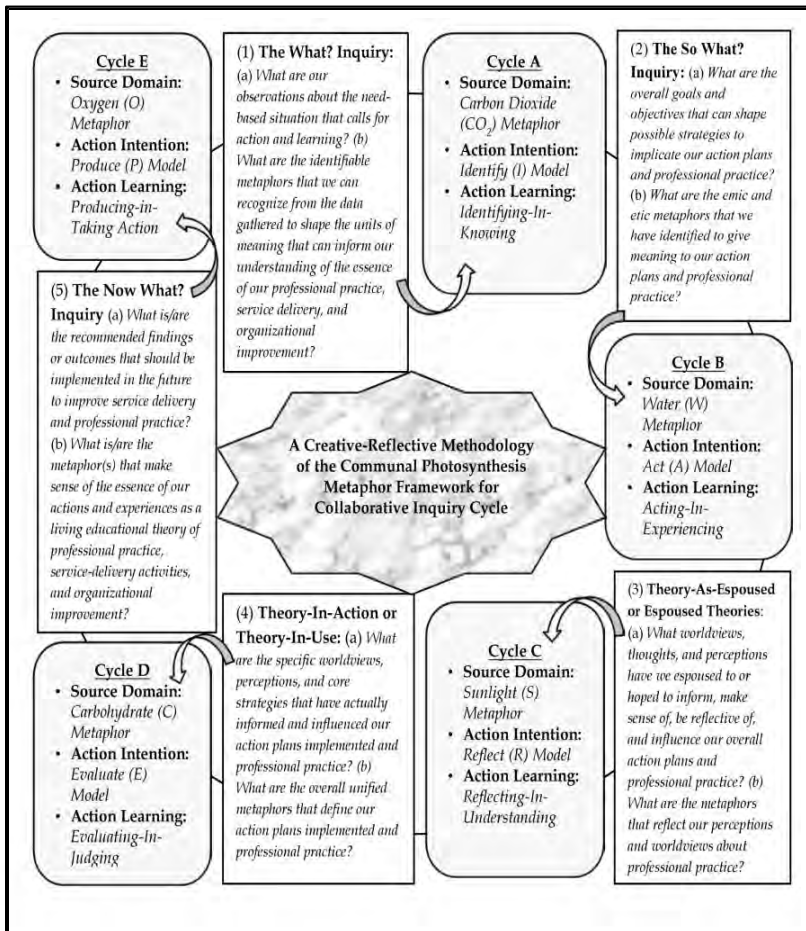


Figure 2. The spiral framework of the communal photosynthesis (CP) metaphor composing the source-domains CO₂WSCO of cyclical metaphors corresponding to the action-intention domains IAREP model of cyclical metaphors as participatory action research (PAR) cycles.

Cycle C – Sunlight Metaphor Phase: The creative-reflective thought processes are spread throughout all of the spiral phases of the five collaborative inquiries, but this sunlight metaphor phase reveals the most reflective context of the CP metaphor framework. In this phase, our worldviews, thoughts, and perceptions are engaged analytically within the context of critical thinking by undergoing creative-reflective thought processes. The process is repeated until sense making, creative, and reflective viewpoints have been attained as a way of influencing the intended action plans to shape our professional practice, service-delivery practices, human activities, and/or organizational improvement. Intermittent to the spiral process of this phase is the elicitation of metaphors from data gathered that might reflect the perceptions and worldviews concerning our professional practice.

Cycle D – Carbohydrate Metaphor Phase: During this phase, the distinct worldviews, perceptions, and core strategies that have actually informed and influenced the action plans implemented to enhance our professional practice, improve human activities, and/or shape organizational improvement are evaluated. Akin to the spiral process, the collective metaphors that might define the action plans implemented are assessed in this phase to determine their suitability for making sense of our professional practice, human activities, service-delivery practices, and/or organizational improvement.

Cycle E – Oxygen Metaphor Phase: The five phases of this CP metaphor framework constitute spiral cycles, so the Cycle E phase is not intended to end the collaborative inquiry process, but rather to allow the process to bring about a level of saturation. The level of saturation is attained when the generated metaphors can contribute to a living educational theory of practice. Therefore, at this phase, the recommended findings or outcomes that should be implemented in the future to improve service delivery and enhance our professional practice are collaboratively produced and offered. Crucial to this phase are the ways in which the creative-reflective thought processes can help to produce the

metaphors that can make sense of the essence of our actions and experiences to develop the living educational theory of practice.

Action-Intention Domain: The Identify, Act, Reflect, Evaluate, and Produce (IAREP) model entails the action-intention domain metaphors of the PAR cycles because they provide activity-based processes to aid in the collaborative inquiry framework of ALAR. One of the core functions of metaphor is to generate meaning regarding human activities that can otherwise be difficult to understand. Therefore, such generative metaphors can be viewed as activity-based processes that tend to conceptualize the action-intention domain of the metaphors as constituting adaptive, action, acquisition, and participatory metaphors. In this case, stakeholders participating in a collaborative inquiry process can make sense of the action-intention domain metaphors as directed to the adaptive, action, acquisition, and participatory contexts of their professional field of practice.

As used within the CP metaphor framework in Figure 2, three adaptive action models of inquiry – *What?*, *So what?*, and *Now what?* (Eoyang & Holladay, 2013) – are employed to aid in the creative-reflective thought processes. Moreover, the power of questioning insight that underscores the quest for problem resolution characterizes the systemic context of action learning (Pedler & Revans 2011). It is thus crucial that these three adaptive action models of inquiry be applied collaboratively to help elicit the “adaptive” action-intention domains of metaphors for use in shaping the action, acquisition, and participatory contexts of our worldviews and the sense-making processes of our professional practice. The following provides an explanation of the ways in which the three adaptive action models of inquiry are intended to be used in the creative-reflective thought processes within the CP metaphor framework:

Identify Phase: With the “What?” inquiry, we can observe the real-life challenges that shape our professional practice and generate the adaptive metaphors that can help us make sense of our human activities. The CP metaphor cycle is spiral, but the process starts with the application of the “What?” inquiry. In this way, it can

contribute to eliciting and identifying the acquisition metaphors of the issues that must be addressed. This can be done by focusing on all three interactive utilities portrayed in Figure 1, which is then intended to become operative within the Cycle A phase, as shown in Figure 2.

Act Phase: The “So what?” inquiry can help us consider the overall goals and objectives to develop possible strategies that can implicate our action plans and produce an action, adaptive, and participatory metaphors to give meaning to our professional practice. The “So what?” inquiry can thus help us to gain a better understanding of the action plans intended to shape the real-life challenges observed in our professional practice. Equally, the “So what?” inquiry is used to address the three interactive utilities shown in Figure 1, but it is intended to become operational within the Cycle B phase.

Produce Phase: The “Now what?” inquiry can help us consider outcomes of our collaborative inquiry and make recommendations for future implementations to improve our service-delivery practices and professional practices. In addition, use of the “Now what?” inquiry will enable us to identify the action, adaptive, and participatory metaphors that can help us make sense of the essence of our actions and experiences to develop a living educational theory of professional practice. The “Now what?” inquiry’s focus and usefulness allow it to be employed to address the three interactive utilities demonstrated in Figure 1, but intended to become workable within the Cycle E phase. The spiral nature of the cycle, however, can return the participating stakeholders to the creative-reflective methodology process until saturation is attained to shape the development of living educational theory of practice.

Thus, throughout the collaborative inquiry process, action, acquisition, and participatory metaphors are generated from the creative-reflective thought processes to account for the human experience. The power of action metaphors is their ability to aid in providing wholeness and complete pictures of human actions, experiences, activities, and life events. An action metaphor can bring a clearer understanding of the hidden meaning of human activities through the use of metaphor mappings such as symbols,

depictions, artistic portraits, and images. The usefulness of action metaphors is their ability to provide explanations for the creative-reflective learning and action-learning processes to produce unified living educational theories of practice. As illustrated in Figure 2, two theories of action – (a) theory-as-espoused or simply espoused theories and (b) theory-in-action or theory-in-use (Argyris & Schön, 1974; Hoshmand & O’Byrne, 1996) – are applied to help facilitate the collaborative inquiry process to aid in the creative-reflective thought processes for the elicitation of action metaphors. The way in which these two theories of action are employed to compose suitable inquiries for addressing Cycles C and D phases within the CP metaphor framework is as follows:

Evaluate Phase: The *espoused theory* conveys the worldviews of the assumptions, beliefs, values, and perceptions hoped to inform the human action and professional practice. It is used as an inquiry to address all three interactive utilities depicted in Figure 1, but it is actually operationalized within the Cycle C phase to serve the intended purpose of “theory-as-espoused” as shown in Figure 2.

Reflect Phase: The *theory-in-use* reflects the “evaluability assessment” of well-structured, well-shaped, and well-developed worldviews, assumptions, beliefs, values, perceptions, and core strategies for problem resolution that tend to inform and influence the human action and professional practice. Notably, the delineation of the “theory-in-use” makes its inquiry suitable to better address the three interactive utilities illustrated in Figure 1, but become systemic function within the Cycle D phase.

An espoused theory is thus meant to convey the implementation of action plans for the intended practice or action, but the “theory-in-use” can offer a framework for understanding the actual theory that is reflective of the action itself. As an evaluability assessment, it means that the “theory-in-use” constitutes the assessment, credibility, feasibility, sustainability, and acceptability of learning that gives meaning to human action and predicts core service use or the actionable strategies to alter or produce social change in individuals, organizations, and the larger society. The learning itself that is contained within the “theory-in-use” is composed of

knowledge-based learning that is translated into an action goal (AG) or a desired action (DA) toward a fulfilled action (FA) or an action outcome (AO). Thus, the action that also takes place within the theory-in-use is in fact the FA or AO. The metaphors of learning and action can shape theories of learning and action to unify the distinction as to whether human activities can fit an espoused theory used to reflect the theory-in-use regarding the action that was undertaken. The facilitation of the compatibility between the espoused theory and the theory-in-use to shape the metaphors of learning and action requires a participatory learning and action framework for generating metaphors that can convey one level of meaning making to another level of understanding.

The participatory learning and action framework is rooted in the activity-based collaborative processes of translating abstract worldviews to object worldviews of sense making to account for the understanding that constitutes the human activities. These activity-based collaborative processes are composed of the metaphorical frameworks of acquisition, association, interaction, integration, participation, production, and transformation. A study conducted by Sfard (1998) suggested that of the several activity-based collaborative processes, the acquisition metaphor (AM) and the participation metaphor (PM) should be collaboratively used as frameworks for metaphor mapping. The AM reflects the metaphor we elicit from the action-learning context to make sense of our everyday actions. The PM, however, defines the essence of our collective action of everyday activities. This goes to show that the AM can influence the PM within the context of the action-learning processes.

(3) *Action-learning domain*: Action learning is a questioning inquiry and reflection processes shaped by the metaphor by which we live and those we use to make sense of our actions. Metaphors of learning and action are potentially ubiquitous in the development of theories of learning and action to give meaning to our professional practice. Elliott (1984) even affirmed that “theories of learning are dependent on metaphors because they are centrally concerned either with mental acts and conscious processes or with operations of metal mechanisms below the level of consciousness,

all of which are describable only by metaphorical means” (p. 38). Thus, the function of metaphors can shape the creative-reflective thought processes to aid identifiable actions. In this case, one can better understand the context of action learning by the identification of an action intention (AI) that becomes actionable and measurable. The AI is structured as the action goal (AG) or desired action (DA) and action outcome (AO). The AI, however, becomes actionable and measurable only through its transformation into the AG or DA *plus* fulfilled action (FA) or AO and can thereby serve as a creative-reflective methodology.

(4) *Creative-reflective methodology*: The creative-reflective methodology is composed of the context of action learning that becomes actionable and measurable. When action learning becomes actionable and measurable, it creates a framework for creative-reflective thought processes that can aid collaborative inquiry to produce social change. Therefore, the creative-reflective methodology can also be viewed as the composition of an actionable learning framework (ALF) *plus* a measurable action framework (MAF) to foster the collaborative inquiry processes. The Coghlan and Brannick (2014) work titled *Doing Action Research in Your Own Organization* outlined three action-learning activity models – (i) learning in action, (ii) knowing in action, and (iii) reflection in action – that can aid in creative-reflective thought processes. Coghlan and Brannick, however, suggested that four heuristic processes structure the contextual framework of action learning and knowing: *experiencing, understanding, judging, and taking action*. The heuristic processes become relevant because underscoring the ALAR context is the heuristic logic of problem-solving and experiencing knowledge production. The concept of “understanding” is crucial to the heuristic sense-making process because it can aid in the participatory form of learning and action to shape creative-reflective actions. The idea of “experience” is concerned with the interactive data generated from real-life situations of action learning. The idea of “judging” is focused on the verification-oriented inquiry for gathering accurate data that can inform further action learning and understanding. The phenomenon of “action taking” is reflective of action learning,

planning, decision making, and responsible action taking that can produce constructive or positive action to induce social change.

It can thus be argued that the continuum of action learning signifies the learning process *plus* learning action, which can produce theory-driven collective learning and action generated by attractive metaphors that aid understanding. Thus, metaphor attractiveness lies in its ability to convert, modify, or change an espoused theory of human action or experience into conveying the interpretation of thought and action, which in turn can generate the “theory-in-use.” The metaphor will then become attractive because it can reflect the practical theory-in-use that shapes the action that informs an individual’s practice. As presented in Figure 2, *identifying-in-knowing*, *acting-in-experiencing*, *reflecting-in-understanding*, *evaluating-in-judging*, and *producing-in-taking-action* are offered to better facilitate the action-learning frameworks. These five action-learning frameworks constitute the essential creative-reflective thought processes for collaborative inquiry because they are the basis for the creative-reflective methodology of the CP metaphor. Therefore, the actionable learning framework (ALF) in creative-reflective methodology is composed of *identifying-in-knowing* and *acting-in-experiencing*, whereas the measurable action framework (MAF) is comprised of *reflecting-in-understanding*, *evaluating-in-judging*, and *producing-in-taking-action*. The creative-reflective methodology for the facilitation of the ALF *plus* MAF is thus explained as follows:

Identifying-in-Knowing: As shown in Figure 2 (see Cycle A), this action-learning process focuses at the outset of planning a typical PAR project through the data-gathering process. It involves the initial planning stage for which issues that are at stake for professional development or perhaps organizational improvement are at the center of reflection. Stakeholders engage in the creative-reflective action-learning process by using the “What?” inquiry during Cycle A to make sense of the need-based situation that calls for participatory action. The context of *identifying-in-knowing* then implies that stakeholders have not only become problem-knowers, but they also have the potential to become those who have attained the status of known-problem. A known-problem

status means that the “posture” of the problem or issue to be addressed has been identified in terms of whether it has any implication on knowledge, attitude, behavior, or skills (KABS). The “contextual posture” of the problem is identified and known in terms of whether it is reflected in a PAST, PRESENT, and FUTURE issue that is relevant to professional development or organizational improvement.

Acting-in-Experiencing: This process is a creative-reflective dialogue between the problem-knower and the known-problem to determine which action must be taken to bring about change (see Cycle B). Thus, it considers what it means to be a problem-knower and known-problem as it pertains to the rationale for action taking. Stakeholders are viewed as problem-knowers who engage in collecting the action-learning data within a participatory context. Therefore, the process of acting-in-experiencing views the known-problem as issues meeting the shared interests of the stakeholders who are committed to participatory action planning and problem-resolution processes. For this, stakeholders engage in a creative-reflective action-learning process of data gathering by using the “So what?” inquiry during Cycle B to develop the problem concept, an action plan, and the rationale to take action collaboratively. The notion of experiencing contained in the process of acting-in-experiencing epitomizes the creative-reflective relationship that exists between the problem-knowers and the known-problem, calling for action plans to bring about the desired outcome of professional development or organizational improvement.

Reflecting-in-Understanding: This involves the sense-making of data collected to improve professional practice and organizational development (see Cycle C). It requires communal reflection where every stakeholder can offer creative-reflective viewpoints, and such perceptions are appreciated collaboratively to produce deeper meanings for professional development. After the collaborative data collected are transcribed, the stakeholders can apply the logic of the “theory-as-espoused” inquiry during Cycle C presented in Figure 2 as a creative-reflective methodology framework to aid in the action-learning data analysis process. The stakeholders will then engage collaboratively in a creative-

reflective action-learning process or teamwork project that follows the photosynthetic cyclical process by categorizing the data coding. The process of reflecting-in-understanding will help in the expansion of action-learning ideas, as data are coded to answer the “theory-as-espoused” inquiry. Collaborative data can be purposefully categorized with emerging metaphors that may resonate with themes and concepts identified to highlight their implications for professional practice.

Evaluating-in-Judging: This process ensures verifiability, credibility, workability, sensibility, and transferability to contribute to a potential living educational theory of practice (see Cycle D). Stakeholders engage in a creative-reflective action-learning process by applying the “theory-in-use” during Cycle D to evaluate the basis of the sense-making derived from data analysis to inform professional practice. Therefore, it is imperative that the process of evaluating-in-judging be utilized by carefully searching the data coding again for co-occurrences of ideas that did not fit and for themes that might be interrelated. At this point, it is also important that participatory action and metaphor-mapping activities that inform collective action be collaboratively ensured. This can be better facilitated by questioning the credibility, feasibility, sustainability, sensibility, and acceptability of fitness or unfitness that may structure the emerging ideas or themes to help make sense of the living educational theories of practice that the data coding might suggest.

Producing-in-Taking-Action: This process results in the implication as to why the action-learning processes were initiated (see Cycle E). It has a direct connection to all of the other four cycles, and thus it encourages the spiral nature of the cycle to ensure that saturation is attained to shape the potential for the sense-making of living educational theory of professional practice. Therefore, stakeholders engage in a creative-reflective action-learning process of knowledge production by using the “Now what?” inquiry during Cycle E to better facilitate the development of living educational theory of practice. The nature or context of producing-in-taking-action is as sensitive as all of the other four cycles. It therefore serves as the glue for coordination between the cycles,

meaning this process is concerned with the product that might emerge from taking action.

Conclusion

In this article, I have provided an autobiographical account of action-research journeys from the systemic context of action-learning experiences, which led to the discovery and development of the communal-photosynthesis (CP) metaphor. Among its most important uses and from everything that I have discussed so far, it can thus be argued that I actually coined this CP metaphor in 2001 to offer a framework for creative-reflective methodology that can contribute to the sense-making of ALAR experiences. Thus, the CP metaphor is shown to be useful because it offers the source domain CO₂WSCO cyclical metaphors corresponding to the IAREP model as an action-intention metaphor domain of a PAR cycle, as well as a collaborative inquiry framework for the development of living educational theory of practice. This framework is provided to aid in the creative-reflective thought processes for the facilitation of PAR cycle through the data analysis process.

During the data analysis process, the five overriding systematic questions for collaborative inquiry, including any sub-questions offered within the photosynthetic cyclical process, can help in the sense-making and development of the living theory of practice. It is, however, important that flexibility be ensured throughout the data-coding process to allow communal reflection to shape the sense-making process so it can contribute to professional understanding, personal growth development, and organizational improvement. It is also certain from the argument offered in this article that the ALAR experience constitutes activity-based and result-oriented participatory processes of theory development that span educational journeys. In the quest for developing the living theories, it is also important to stress that the essential meanings of professional theory development that one may account for the ALAR experiences tend to use metaphors.

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Biography

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