

Dick, B. and P. Wildman, *Critical Futures Praxis: futures, action research and change*.
Unpublished, 2013: p. 28pgs.

Critical futures praxis: futures, action research and change

Bob Dick ^a, and Paul Wildman ^b

^a*Independent scholar; bd@bigpond.net.au*

^b*Kids and Adults Learning Pty. Ltd.; paul@kalgrove.com*

Abstract

Recent initiatives in the futures literature have sought to enhance the action orientation of futures work by combining it with action learning and action research. To this combination we further add change agency, a set of concepts and processes that increase the potential for practical and detailed action. We view this threefold combination as an example of critical futures praxis (CFP). We argue that many issues facing the world are complex and urgent, issues including transhumanism (TH) and the related singularity. An action-oriented yet critical futures approach can be a useful counterpoint to the narrowly-scientific and technologically-driven nature of most current work on transhumanism.

In this article we discuss the strengths of each of the three fields – futures, action research, and change agency – to demonstrate their complementarity. We briefly discuss a form of theory that assists easy translation in each direction between theory and practice. To support a deeper understanding of the nature of causation in our day-to-day world we examine causation as multi-layered. As an example we discuss the integration of the futures technique of causal layered analysis with a cultural change process and action research. Description of a further example completes the paper: an innovative and counter-cultural fourth year university subject.

Keywords: futures, action learning, action research, change agency, critical futures praxis, transhumanism, the singularity, causal layered analysis

Critical Futures Praxis

Transhumanism – the reshaping by technology of what it is to be human – has already had far-reaching effects on human existence. Its future effects appear likely to be even greater. Yet there is presently a dearth of social technologies able to engage in a productive critique of it. One such social technology is critical theory, including what we have termed ‘critical futures praxis’ or CFP.

Our purpose here is to seek to contribute to, and explicate, this concept of critical futures praxis. As we explain below, we conceive of it as a combination of three fields of endeavour: **futures studies**, **action research** and **change agency**. We argue that these three endeavours combine well with each other (Fig. 1).

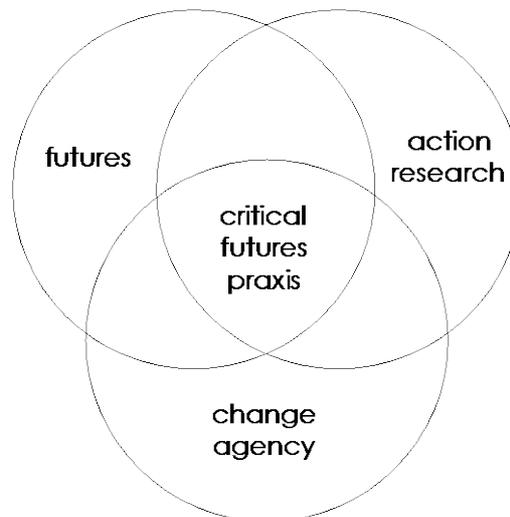


Fig. 1: Critical futures praxis: an integration of futures, action research and action learning

To present our argument briefly, we believe that the current state of the world, including the emergence of transhumanism, warrants urgent attention, deep and layered understanding, and action. Many of the current problems

are characterised by complexity. Their solution will require approaches that integrate theory and practice and generate amongst people a common will to act together. A combination of futures, action research and change agency can achieve a further reach than any one of them can in isolation:

- A futures orientation can take people out of their usual assumptions and open up new possibilities.
- To this, action research brings a focus on action and a cyclic alternation between theory and practice. The result is easier theory-practice integration.
- Change agency adds a set of tools and techniques to help in operationalizing the solutions reached.
- The participative and inclusive nature of action research and change agency builds collective commitment to the solutions and enhances collective action.

After we have described action research and change agency we elaborate on their contribution to futures-oriented action. We illustrate with an extended example of a process emerging from this conjunction. We conclude with a description of a more generic process in which change agency is enriched with futures and action research concepts and processes.

To this endeavour we bring our prior experience. We might be described as an action researcher with an interest in futures (first author) and a futurist with an interest in action research (second author). Here, though, our interest is pragmatic. We write as practitioners with a practical interest in bringing about positive bottom-up change in a turbulent and uncertain world.

Previous examples of integration

It is not that a combination of futures and action research is entirely novel. Visioning, documented for example by Merrelyn Emery (1999) and by Marvin Weisbord and Sandra Janoff (2000), has been a regular part of action research

and change agency for many years. French and Bell (1973) used action research as the research basis for their influential text on organisation development. They included material on visioning. It's common for visioning activities to include an 'environmental scan' to identify those future events which are to some extent predictable. (We should note that 'visioning' covers a great variety of processes, as O'Brien and Meadows (2001) point out.) The early stages of our own community development work often include a visioning exercise to orient a community towards the future. It also builds a common vision to which community members are willing to contribute. Scenario planning can be similarly used (Godet, 2001).

Visioning is not the only futures process that can be pressed into service for other purposes. Delphi, an early forecasting technique (Dalkey, 1967) and still considered part of the forecasting tool kit (Gordon, 2003) provides an example. It can be used whenever disparate views, common in participatory processes such as action research, are to be reconciled. We've used a face-to-face version of delphi as an alternative to conflict resolution methods for generating agreement. We've found it more useful than conventional conflict management processes when there are many participants holding many different opinions.

Futuring has also borrowed from action research, particularly in recent years. Using the label 'anticipatory action learning' Tony Stevenson (2002) has spoken of the virtues of high levels of, and depth in, participation. He recommends taking the future into account in present planning by backcasting from a vision. Sohail Inayatullah (2002) has used the same label in a similar endeavour, arguing for 'layered questioning' (see below) to deepen understanding. Robert Burke (2002) talks about 'future sense' combining action learning and futures. Colin Russo (2003) offers a further example, combining Inayatullah's causal layered analysis with action

learning. Paul Wildman has applied CLA to the 339 recommendations of the Australian Aboriginal Deaths in Custody Royal Commission Report.

Wildman (2004).

The field of critical futures studies, championed by Rick Slaughter (1989) for some years, is also relevant here. We discuss it in more detail shortly.

Certainly, at its best futuring can be informed by good theory and enabled by good processes and good relationships. But it is when spontaneous creativity combines these in the heat of the practical moment that plans for the future are most likely to be successfully acted on. Action research and change agency add specific tools that help to do so. We now address the need for an action orientation before considering the three components of critical futures praxis.

The need for informed action

We think that the need for action is evident enough. It is clear that the world is in serious trouble. Among the many imperatives facing us are those brought about by globalisation, degradation of the environment, technology including transhumanism and the associated singularity¹, terrorism, and many more. These imperatives require action and the ability to learn from it. They also require the transformative thinking that futures can bring in order to understand the causative factors that need to be woven into any resultant action. Some of the required action is urgent. The 2012 Millennium Project report (Glenn & Gordon, 2012) documents many worsening threats to sustainability. Many of these threats require attention soon rather than later.

Many of the issues confronting the world are complex and intertwined. Uninformed action is unlikely to address them well. Inflexible action is unlikely to be effective either, as the analysis of complexity by Kurtz and

Snowden (2003) makes clear. As they say, situations characterised technically as 'complex' – that is, where cause and effect are not easily defined or disentangled – can only be understood after the event. In such situations we don't believe that any one method of analysis or intervention is likely to be adequate.

In fact in our own work we draw on many more disciplines and practices than we mention here. The 'real world' does not observe the conventional boundaries of knowledge. It responds well to an eclectic approach. We therefore adjust our actions to suit the situation, the people and the intention.

For the purposes of this paper, however, futures, action research and change agency will be our focus. We now describe the contribution each of them can make to critical futures praxis.

The 'critical' in critical futures

Sohail Inayatullah (2001) contrasts critical futures studies to two other varieties: the predictive and the cultural/interpretive. The predictive he defines as empirical and mostly quantitative. Reality is assumed to be directly knowable. Such an approach is most closely associated with futures work as planning. Cultural/interpretative futures work aims not at narrowcast prediction, but at insight – that is, critical and practical understanding of the processes generating our futures. Action may then respond to, and preferably anticipate, the difficulties we face. Reality is seen as coloured by the language we use to describe it.

In contrast, critical futures studies seek to recognise the present and the future that we unthinkingly project as products of a particular world view. Inayatullah argues for a broadening and deepening of futures studies to

avoid a narrow Western orientation. To this he brings a multicultural and multidisciplinary background.

A threefold categorisation is also to be found in the action research literature. Wilfred Carr and Stephen Kemmis (1986) distinguish technical, practical and emancipatory varieties of action research. In underlying assumptions the technical approaches equate roughly to what Inayatullah labels predictive futures work. Emancipatory action research can be identified as similar to critical futures. In fact, the critical theory of Jürgen Habermas is identified as the source. Jim McKernan (1996) uses the label 'critical-emancipatory action research'. The fit between practical and cultural/interpretive is less close, though practical action research is traceable to hermeneutic roots (Huttunen & Heikkinen, 1998).

Habermas's (1986, 1987) theory of communicative action was also an important influence on Rick Slaughter's work (for example Slaughter, 1996, 1999). Both Jose Ramos (2002) and Slaughter himself (1989) have provided histories of critical futures studies. Ramos identifies Slaughter's important contribution to this field.

Slaughter's intention in part is to transform education by building into it a critical futures approach. He questions the narrowness of cultural and ideological commitments. He argues for adopting an approach that is more universal. His aim is to bring a greater depth of understanding to futures work – to see beyond the 'litany' of everyday events to the deeper meanings and causations. Inayatullah's causal layered analysis (1998), described later, is a tangible method for explicating the deeper layers.

We view much of our own work as 'critical', in two senses. We have an interest in processes that can challenge existing structures and relationships and the power and decision making that characterise them. We also support

Inayatullah's wish to escape, as far as possible, our often too-narrow Western orientation.

An element of praxis is also to be found in the futures work we have discussed. Slaughter's aims include bringing about change in classrooms. To provide a further example Elise Boulding (2001) seeks to help people to a better understanding of how a less warlike future might be achieved. The concepts and ideas of futures studies are an important catalyst to the changes they wish to achieve.

In much of the work we've discussed so far, the praxis is led by concepts and theory. It can usefully be complemented by an approach in which the action leads. In some of our own work as practitioners, our practice does lead our theory. We can sometimes act effectively without being able to explain easily what we did and why it worked.

This is not new. As Michael Polanyi (1966) said some years ago, we all know more than we can tell. In other words, skilled action can be richer than theory. We would add that it is sometimes only in action that we realise what we know. As Kurt Lewin is reputed to have said (Schein, 1996) 'you cannot understand a system until you try to change it'.² Fortunately the action research cycle can start as easily with action as with critical reflection.

The contribution of futures processes to critical futures praxis

To quote Edward Cornish (2004:65) 'The goal of futures is not to predict the future but to improve it.' As the distant future is largely unpredictable, we agree. We think that futures processes have other contributions to make too.

Most important, in our view, is that the future is a different window through which to view and analyse the present. In our experience this is best

achieved by adopting a sufficiently distant time horizon. A 'near-in' (short term) futures analysis commonly occurs as part of strategic planning. Such an approach extends the choices of the system under examination: adding horizontal options, so to speak. This is clearly useful. In addition, we prefer to bring to awareness the layers of meaning tacitly embedded in the researchers and the research situation. This adds a depth of meaning – the vertical dimension, as Inayatullah (1998) puts it – to the project outcomes. Time permitting, we find causal layered analysis an effective way of doing this – we describe it later. With less time available we may instead merely probe and explore the assumptions behind the options.

A typical approach to corporate strategic planning is to adopt a rolling three-year cycle or five-year cycle. Faced with a three- or five-year time horizon participants frequently work as if the future is knowable as an expansion of the present – a More Of The Same scenario. They develop their plans as if the rest of the world will be stable. But extend the time horizon 'far out' to 20 or 30 years or more and these assumptions become untenable. The unpredictability of the future becomes apparent. For many people the need for flexibility becomes inescapable. It also becomes more difficult to divorce local issues from wider influences. With longer time horizons participants are more likely to recognise the interconnected nature of many issues. They are then more likely to consider more extensive effects on their community or corporation.

When participants realise the ambiguity of the future, anxiety or discomfort often ensues. With good support this can trigger a greater willingness to 'unfreeze': to recognise that current knowledge may not be adequate to anticipate and manage the possible future. It serves a purpose similar to the 'shallow dive into chaos'³ that The Cynefin Institute (until recently IBM's institute for complexity studies) uses (Snowden, 2004).

Participants don't easily abandon the knowable for the unknown, at least not directly. A limited detour through chaos can free up creativity.

With short time horizons participants may manage issues by leaving costs to later generations – for instance by using finite resources such as oil or coal. Longer time horizons increase the likelihood that future generations are treated as stakeholders. An empty chair at a workshop for 'your grandchildren's grandchildren' can sometimes be enough to provide a reminder of this.

We have also found that with longer time horizons it can often be easier for participants to establish common ground. Taken out of the present they are better able to divest themselves of specifics. They then work instead from principles and values. Self-interested decisions are thereby reduced. There is also a disadvantage. The more abstract the analysis greater the difficulty of devising practical ways of achieving their vision. It is at this point that action research can be relevant.

The contribution of action research

Action research is a family of processes that pursue the joint goals of action (or change) and research (or understanding). It is usually participative. In fact some writers (for example Greenwood & Levin, 1998) regard stakeholder involvement as an imperative. Action research is often qualitative. A methodology used as part of a change process requires some flexibility and responsiveness. Otherwise it is less able to adjust to the changing situation. Conventional ways of achieving research rigour are often therefore difficult to apply.

Action research obtains its flexibility and its rigour from the use of an iterative cycle of action and critical reflection. The critical reflection can be

viewed as having two parts. The first component is a review of the actions just taken and the outcomes produced. This increases explicit understanding. In the other component the new understanding is applied to planning of the next action. One representation is shown in Fig. 2.

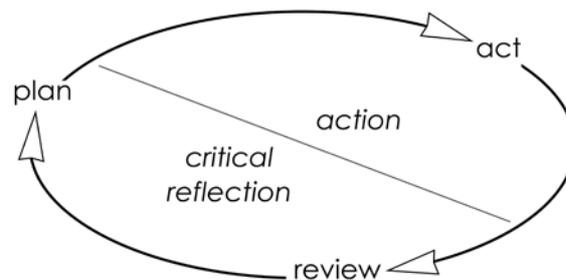


Fig. 2: The action research cycle: praxis through the integration of action and critical reflection

The resemblance of this cycle to the experiential learning cycle is no accident. In the popular form of the experiential cycle due to David Kolb (1984) active experimentation and concrete experience (the action) are followed by reflective observation (the review) and abstract conceptualisation (the theorising). The planning is implied.

Using cycles within cycles within cycles further enhances flexibility. For example when we facilitate groups we carry out our moment-by-moment interventions with intention. We note the results, for instance of the choice of words we used in our facilitation. If necessary we repeat the cycle (for example with different words) until we achieve a stable outcome. Such cycles may occupy only seconds. A facilitation session as a whole may also be planned as an action research cycle, occupying hours or days. A change program may make up a change cycle of a year or more.

Many of the advantages of action research arise from the cyclic form.

Within each cycle:

- During planning, assumptions can be made explicit
- Actions are therefore informed by assumptions (that is, theories)
- The assumptions are immediately tested in action
- New understanding (that is, new theory) can arise from the unexpected results of action
- Brief cycles allow flexibility and responsiveness while longer cycles allow the accumulation of learning about overall processes.

When such activities are carried out with the full involvement of stakeholders, commitment to action is improved. Those who carry out the actions can use action research to refine them as they proceed.

The inherent rigor of this approach – the immediate and ongoing testing of assumptions in action – can be further enhanced. This can be done by creating a climate where disagreement can be expressed, and by being sensitive to any evidence that the assumptions were wrong. In addition the techniques of qualitative research described by such writers as Creswell (2002) are desirable. These include, for example, triangulation through using multiple sources of data. Multiple stakeholders can provide such diversity of information. Other authors have made a strong case for the rigour of action research, including Checkland (1981) and Reason & Bradbury (2003) among others. We won't repeat their arguments here.

The contribution of change agency

Change agency, too, is a family of processes. Some of the processes are general and apply to an overall program of change. Others are specific, aimed at producing particular outcomes such as goal setting or conflict management

or action planning. Fig. 3 provides an example of a generic three-phase change model.

Preliminaries	Planning	Action
<ul style="list-style-type: none"> • build open and direct and flexible relationships with initial stakeholders • use appropriate interpersonal processes throughout • negotiate appropriate mechanisms to involve all stakeholders 	<ul style="list-style-type: none"> • offer genuine involvement to all • participatively determine vision and goals • reach an agreed understanding of the present situation • participatively develop action plans, and processes for monitoring them • negotiate roles and responsibilities 	<ul style="list-style-type: none"> • implement the agreed actions, first checking (for each action in turn) that the actions and their outcomes are still appropriate • monitor the effectiveness of the actions in achieving the intended outcomes • use trial and error as necessary to achieve the outcomes • monitor and correct for unintended outcomes

Note that this understates the complexity and flexibility of the change process. In particular, the process is —

- highly participatory, offering genuine involvement to all, preferably as equal partners
- iterative, with the earlier stages being revisited and renegotiated regularly, and
- nested, the process being repeated in increasing detail as the plan unfolds into action.

Fig. 3: A model of a thorough change process

Books on change agency such as those on organisation development typically contain many dozen descriptions of specific processes for specific purposes. Examples include Rothwell, Sullivan and McLean (1995) and French and Bell (1999). It is possible to design a change program from scratch and monitor it using action research. It's more powerful to take processes from the copious literature and fine tune them to fit the situation.

The contribution of change agency is to be found in its extensive description of specific processes. Also included are specific skills such as those for communication and facilitation. For most purposes the change agency literature will provide a process to operationalise the more general plans developed through a combination of futures and action research.

Action research recommends participation, for instance. With a few exceptions it is the change agency literature that provides tools for deciding who to involve and how to involve them.

Theories of action

Certain types of theory more easily support the integration of futures, action research and change agency. Theory here has two immediate purposes and some less direct ones. The first of the immediate purposes is to capture the understanding that arises from a review after the action. The second is to then inform the actions next planned. Theories that consist of causal relationships between abstract variables are well suited to laboratory experimentation. They are less appropriate for translating action to understanding and back to action – that is, for theory-practice integration.

Action science, a variety of action research, offers a possibility. A ‘theory of action’ approach to understanding is congenial to our purpose. Such a theory has four components as follows: ‘In situation *S*, if you intend consequence *C*, do *A*, given assumptions $a_1 \dots a_n$ ’ (Argyris & Schön, 1974:29). It can be seen that with such a formulation theory and practice are readily translated into each other.

This information can be elicited in practice by asking the following questions of oneself or of the participants being facilitated (see Williams, 2004):

- What do I think the salient features of the present situation are?
- Why do I think so?
- If I’m correct about the situation, what outcomes are desirable?
- Why do I think those are desirable outcomes?
- What actions do I think will produce those outcomes in that situation?
- What reasons do I have for thinking so?

Integrating the components

Let's sum up before proceeding. We're building on previous writers' combinations of futures and action research (including action learning). To these we're adding the processes and skills of change agency, especially as collected in the literature of organisation development. Each of the three components makes several valuable contributions to critical futures praxis, in particular:

- A **long range future vision** provides a vantage point from which the present looks different and the future looks ambiguous and unpredictable. This has an unfreezing effect for participants. They can more easily escape some of the otherwise pervasive assumptions of the status quo. The result can be more penetrating plans based on a deeper understanding.
- Each of the **nested cycles of action research** integrates theory and practice. Further, within each cycle theoretical assumptions are tested in action. Brief cycles provide a flexibility and responsiveness that allows action to be adjusted on the run during implementation.
- To this combination **change agency** further adds the 'practical hope of praxis' – an extensive set of skills, tools, models and processes. This allows intended plans to be operationalised, in detail.

With their emphasis on participation both action research and change agency increase the commitment of those involved. Planned actions are more likely to be carried out. Using a form of theory better suited to action can strengthen theory-practice integration. Such theories specify causal relationships not between variables and variables but between actions and outcomes.

The remainder of the paper illustrates critical futures praxis with two case studies. This will serve to demonstrate how the depth of analysis provided by causal layered analysis can be converted to action through the use of action research and change agency. For this account we turn to the first case study on causal layered analysis as integrated with a model of cultural change

in organisations. A second case study describes an actual university subject that was designed and run using the principles we discuss here. These examples illustrate a combination of the three components as they work in practice.

Case Study : Layers of analysis

Inayatullah’s Causal Layered Analysis (Inayatullah, 1998) or CLA (Fig. 4) is a four level analysis. It begins with the litany of everyday events and objects. These are revealed in conversation and in the mass media. CLA then accesses socio-economic systems, for instance through an examination of op-ed pieces and the analyses and reports of institutes. This level seeks to provide a first explanation of the litany. Probing further, there are patterns to be found in the second level. There are paradigmatic meanings (often taken for granted) which constitute a worldview or, in the language of postmodernism, a ‘grand narrative’. This is accessible, though not easily, from a critical analysis or a deconstruction.

Level	Label	Nature
1	litany	visible trends and problems, for instance as revealed in news media
2	socio-economic	economic, cultural, political, etc. systems with attributed causes
3	paradigmatic	social, linguistic and cultural structures
4	myth	pervasive and collective archetypes, often unconscious

Fig. 4: The levels of causal layered analysis.

Below that again is to be found the mostly-unconscious level of myth and archetype. As in night vision it is difficult to examine directly.⁴ It is often not regarded as appropriate in academic analyses, at least in the sciences. People such as artists and fiction writers who work at the outer reaches of their intuition are more aware of it. Its presence colours myth, story, painting, and other unconstrained expressions of conscious and unconscious together. Futures work can thus plumb the successive depths of causal relationships, structures, and the current mythology. You could say that it's 'turtles all the way down',⁵ probing below surface appearances to the underpinning meanings.

Fig. 5 shows a model of social culture, the culture sphere, from the field of cultural change in communities and organisations. The layer labels are those used by Dick and Dalmau (1998) based on work by John Sherwood (1977).⁶

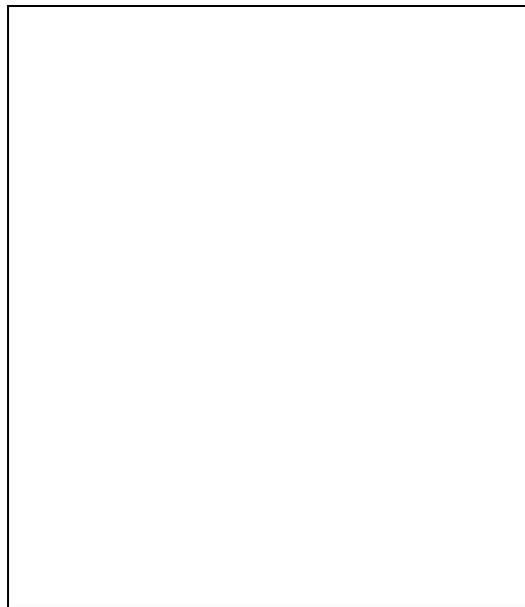


Fig. 5: The culture sphere: layers of meaning in a social system.

The circles are to be thought of as spheres. They depict an organisation or other social system. It is assumed that, as with an onion, the outer layers can be peeled away to reveal inner layers. As with CLA, at each level certain

questions can be asked. Eventually the core, the system's sense of identity and unity, remains. This is where system members find the answer to the existential question 'Who are we?'

The culture sphere of Fig. 5 suggests processes for doing this. By combining CLA with the culture sphere it is possible to work down and then up again as Inayatullah (2003) and Wildman (2010) recommend. Fig. 6 summarises the process.

Level	CLA		Culture sphere
1	identify the litany: the surface evidence	←	build monitoring, innovation and learning into the action plans and implement them using action research
	↓		↑
2	identify economic, cultural, political and historical systemic causes		develop action plans using change management concepts and techniques
	↓		↑
3	explore the deeper paradigms and worldviews which support the levels above		project a desirable future with long-horizon visioning techniques
	↓		↑
4	find still deeper origins in archetypes, the mythic and the metaphorical	→	assert the identity of the system by celebrating its stories and history

Fig. 6: Combining CLA, change management and action research

A celebration of story and history reaffirms the collective identity of the organisation or community. The process has been described by Dick & Dalmau (1998:93) as a 'history trip'. Visioning can then be used to develop a desirable future to which all participants can commit. Converting the vision into practical action plans can draw on the planning tools of change agency. Action research then provides for ongoing monitoring to keep the actions fine

tuned to the emerging future. In implementation, actual behaviour within actual relationships brings the plans flexibly to realisation – turtles all the way up.⁷

Case Study 2: Classroom improvement through Critical Futures Praxis

The university subject described below evolved towards its most recent form over almost thirty years. It was a fourth year subject for people intending to work as applied psychologists. Some of the features of the subject in the early weeks of each year were as follows:

- The class as a whole defined the future world to which they hoped to contribute as practitioners. An environmental scan was usually included as part of this visioning process. In the early years of the course a short time horizon was adopted. In later years longer time horizons were used, for reasons addressed earlier in this paper.
- Participants took part in a 'life and career planning' exercise. This too included a component where participants set out the future they wished for themselves.
- Substantial relationship building was done. Some of this was in the class as a whole. Some was in small groups of varying composition. The intention was that everyone in the class would begin to build a relationship with everyone else.
- Participants self-selected into small groups. Intense relationship building helped them to become established. The small groups were mostly self-facilitated. They thus became one of the primary vehicles for the experiential learning that the course emphasised.

This was done in ways that encouraged pluralism and diversity. People were encouraged to build as much diversity into each group as they could, and to treat multiple views as a road to deeper understanding.

These initial activities (we have not described them all) occupied about five weeks. In week six the class members negotiated with academic staff the:

- Content of the subject (with the requirement that it was relevant to the subject title)

- Processes to be used during class sessions
- Roles that they and academic staff would adopt during the class
- Assessment package for the subject.

As far as possible (and within some external constraints) the content, process and roles of the class were as determined by the participants, not by the staff.

Groups and individuals could further renegotiate their agreements with their class colleagues and academic staff. The intention as far as possible was to overturn the usual power relationships that exist in university classes. People were also encouraged thereby to take more responsibility for their own learning and behaviour.

Throughout the subject there was a strong emphasis on self-monitoring, renegotiation and improvement. For example:

- Participants facilitating workshops or other activities within the class built their own evaluation processes into the workshop
- At the end of each class session participants reviewed the session as a whole. At the beginning of the next session (the following week) they raised any issues for renegotiation
- Three or four times during the year time was set aside to review progress so far and redesign the process in the light of that review
- In addition a major review was held at the end of each year. This yielded two sets of suggestions, to the academic staff and to the next cohort of participants. In this way, each cohort was given the opportunity to learn from the experience of the previous cohort. Important improvements could therefore be carried over from year to year without undermining the self-determination of the class.

With this early work as background, class members provided much of the class facilitation. They shared with staff the responsibility for presenting experiential workshops and other activities, and for monitoring and fine tuning the class process.

A futures orientation can be found in the emphasis on long range visioning. In addition, as far as possible the subject remained open to processes and approaches that differed from those of the status quo. An action research approach is evident in the ongoing monitoring and the high participation. Some of the tools used – for instance for group formation, team building, and life and career planning – are change agency tools.

Class members learned these approaches by using them to manage the class as a whole and their small groups. In the course of doing so they also underwent an experience that most found very different to other university classes that they undertook. We know from the regular evaluations in the class that most people found the experience both impactful and satisfying.

In 1984 a postgraduate student carried out an independent evaluation of this and other fourth-year subjects (Johnston, 1984). She surveyed graduates who had completed the course two, four or six years previously. In other words, they were in employment and could judge the relevance of the course to that employment. This subject was substantially better rated than were other subjects for lecturer/staff performance, assessment, and course content, relevance to employment, theory, and skills. In other words, the graduates reported that they had acquired skills and understanding which allowed them to impact more upon their own future.

More importantly, some years after this class has ceased we still continue to receive comments from past class members. Frequently they claim that the course has been for them the most useful of all the classes they enrolled in. They attribute this to the way in which they learned to think for themselves, to question their assumptions, and to take responsibility for their own behaviour. They report that they do continue to use the skills and processes and forms of relationship in their own work. We believe that much of this is

due to the emphasis on constructive local action in the context of the wider issues facing the class, and the world.

Conclusion

We have sought to demonstrate that through the application of CFP that futures, action research and change agency are complementary and combine well. In particular we claim that this combination enhances the action component of futures work. It allows action-led theory to complement theory-led action, both of them within a futures context. To document our claim we have described the advantages each of the three components brings to the combination. We have illustrated their combination and application in two examples.

We believe that computer technology, and in particular transhumanism and the singularity, have serious implications. Their potential effects on emergent social systems, and indeed on what it is to be human, may be profound. They deserve solid and immediate attention. Our view is that methodologies such as CFP provide a constructive alternative to available ways of understanding the shaping of humanity's future.

We intend to collaborate with other researchers within and beyond the university system. In doing so we wish to avoid the uncritical technological positivism that currently pervades much of the transhumanism literature. We plan to use such concepts as critical futures praxis to understand transhumanism deeply. Our intentions is to provide constructive critique – critique with practical hope.

References

Argyris, Chris & Schön, Donald A. 1974. *Theory in Practice: Increasing Professional Effectiveness*. Jossey-Bass.

- Boulding, Elise. 2001. 'The Challenge of Imaging Peace in Wartime. Knowledge Base article 233 in Slaughter, Richard A., (Ed.), Knowledge Base of Futures Studies: Millennium Edition CD-ROM. Volume 2: Organisations, Practices, Products. Foresight International.
- Burke, Robert. 'Organisational Future Sense: Action Learning and Futures'. *Journal of Futures Studies* 2002; 7(2):127-150.
- Carr, Wilfred & Kemmis, Stephen. 1986. *Becoming Critical: Education Knowledge and Action Research*. Falmer Press.
- Checkland, Peter. 1981. *Systems Thinking, Systems Practice*. Wiley.
- Cornish, Edward. 2004. *Futuring: the Exploration of the Future*. World Future Society.
- Creswell, John W. 2002. *Research Design: Quantitative, Qualitative and Mixed Method Approaches*, second edition. Sage Publications.
- Dalkey, Norman C. 1967. Delphi. [Presentation to the Second Symposium on Long-Range Forecasting and Planning, Almagordo, New Mexico, October 11-12, 1967.] RAND Corporation.
- Dick, Bob & Dalmau, Tim. 1998. *To Tame a Unicorn...: Recipes for Cultural Intervention*. Interchange.
- Emery, Merrelyn. 1999. *Searching: the Theory and Practice of Making Cultural Change*. John Benjamins.
- French, Wendell & Bell, Cecil H. 1973. *Organization Development: Behavioral Science Interventions for Organizational Improvement*. Prentice-Hall.
- French, Wendell & Bell, Cecil H. 1999. *Organization Development: Behavioral Science Interventions for Organizational Improvement*, sixth edition. Prentice-Hall.
- Glenn, Jerome C & Gordon, Theodore J. 2012. 2012 State of the Future. Millennium Project - Global Futures Studies and Research. See <http://www.millennium-project.org/>
- Godet, Michel. 2001. *Creating futures: scenario planning as a strategic management tool*. Economica.
- Gordon, Theodore J. 2003. The delphi method. In Glenn, Jerome C & Gordon, Theodore J. (Eds.) *Futures Research Methodology, Version 2.0*. American

- Council for the United Nations University. Paper 3. Retrieved August 2004 from <http://www.acunu.org/millennium/FRM-v2.html>
- Greenwood, David J. & Levin, Morten. 1998. *Introduction to Action Research: Social Research for Social Change*. Sage Publications.
- Habermas, Jürgen. 1986. *The Theory of Communicative Action, volume 1: Reason and the Rationalisation of Society*. Beacon Press.
- Habermas, Jürgen. 1987. *The Theory of Communicative Action, volume 2: the Critique of Functionalist Reason*. Polity Press.
- Huttunen, Rauno & Heikkinen, Hannu L.T. 1998. 'Between facts and norms: action research in the light of Jürgen Habermas's theory of communicative action and discourse theory of justice'. *Curriculum Studies* 6(3):307-322.
- Inayatullah, Sohail. 1998. 'Causal Layered Analysis: Poststructuralism as Method'. *Futures* 30(8):815-829.
- Inayatullah, Sohail. 2001. 'Methods and Epistemologies in Futures Studies'. In Slaughter, Richard A. (Ed.) *Knowledge Base of Futures Studies: Millennium Edition CD-ROM. Volume 1: Foundations*. Foresight International.
- Inayatullah, Sohail. 2002. *Questioning the Future: futures Studies, Action Learning and Organizational Transformation*. Tamkang University.
- Inayatullah, Sohail. 2003. *Causal Layered Analysis*. Paper 26 in Glenn, Jerome C. & Gordon, Theodore J. (Eds.) *Futures Research Methodology, Version 2.0*. American Council for the United Nations University. Retrieved August 2004 from <http://www.acunu.org/millennium/FRM-v2.html>
- Johnston, Deborah. 1984. *Psychology in the 1980s: an Ongoing Search for an Education and a Career: the Experience of Recent Fourth Year Psychology Graduates of the University of Queensland*. Unpublished Honours Thesis, Department of Psychology, University of Queensland.
- Kolb, David A. 1984. *Experiential Learning: Experience as the Source of Learning and Development*. Prentice-Hall.
- Kurtz, Cynthia F. & Snowden, David J. 2003. 'The New Dynamics of Strategy: Sense-making in a Complex and Complicated World'. *IBM Systems Journal* 42(3):462-483.
- McKernan, James. 1996. *Curriculum Action Research: a Handbook of Methods and Measures for the Reflective Practitioner, second edition*. Kogan Page.

- O'Brien, Frances & Meadows, Maureen. 2001. 'How to Develop Visions: a Literature Review, and a Revised CHOICES Approach for an Uncertain World'. *Systemic Practice and Action Research* 14(4):495-515.
- Polanyi, Michael. 1966. *The Tacit Dimension*. Doubleday.
- Ramos, Jose M. 'The Emergence of Critical Futures'. Australian Foresight Institute, Swinburn University of Technology, 2002. Retrieved December 25, 2004 from http://www.foresightinternational.com.au/07resources/Emergence_Critical_Futures.pdf
- Reason, Peter & Bradbury, Hilary. 2003. 'Issues and Choice Points for Improving the Quality of Action Research'. Pp 201-220 in Minkler, Meredith & Wallerstein, Nina (Eds.) *Community Based Participatory Research for Health*. Jossey-Bass.
- Rothwell, William J., Sullivan, Roland & McLean, Gary N. (Eds.). 1995. *Practicing Organization Development: a Guide for Consultants*. Jossey-Bass/Pfeiffer.
- Russo, Colin. 2003. 'The CLA Questioning Methodology'. *Journal of Future Studies* 7(4):73-82.
- Schein, Edgar H. 1996. 'Kurt Lewin's Change Theory in the Field and in the Classroom: Notes towards a Model of Managed Learning. *Systems Practice* 9(1):27-47.
- Sherwood, John J. 1977. *Leadership: the Responsible Exercise of Power*. Cincinnati, Ohio: Management Design Inc.
- Slaughter, Richard A. 1989. 'Probing beneath the Surface: Review of a Decade's Futures Work'. *Futures* 21(5):447-465.
- Slaughter, Richard A. 1996. 'Critical Futures Study as an Educational Strategy'. Pp 137-154 in Slaughter, Richard A. (Ed.), *New Thinking for a New Millennium*. Routledge.
- Slaughter, Richard A. 1999. 'Implementing Critical Futures Studies'. Pp 83-97 in Sardar, Ziauddin (Ed.), *Rescuing All our Futures: the Future of Futures Studies*. Praeger.
- Snowden, David J. 2004. Personal communication.
- Stevenson, Tony. 2002. 'Anticipatory Action Learning: Conversations about the Future'. *Futures* 34(5):417-425.

- Weisbord, Marvin R & Janoff, Sandra. 2000. Future Search: an Action Guide to Finding Common Ground in Organizations and Communities, second edition. Berrett-Koehler.
- Wildman, P. 2004. Uncovering Paradigmatic Racism - A Deep Futures Critique of the Australian Royal Commission into Aboriginal Deaths. In S. Inayatullah. Taipei, Tamkang University. In Inayatullah, S., Ed. (2004). 'The Causal Layered Analysis (CLA) Reader - Theory and Case Studies of an Integrative and Transformative Methodology'. Taipei, Tamkang University. 570pgs. pgs.283-200.
- Wildman, P. 2010. Engaging Poststructuralism: Proactivating and Broadening Causal Layered Analysis (CLA) to Causal Layered Synthesis (CLS) through its application to Pedagogy by introducing the Causal Layered Matrix (CLM). Brisbane, The Kalgrove Institute: 20pgs. See: <http://metafuture.org/causal-layered-analysis-papers.html> and in particular (assessed 02-2013) <http://metafuture.org/FINAL%20CLA%20on%20Pedagogy%20V14%20Sohail.pdf> .
- Williams, Bob. 2004. In the Pursuit of Change and Understanding: Bob Dick in Conversation with Bob Williams'. Forum Qualitative Sozialforschung / Forum: Qualitative Social Research [On-line Journal] 5(3), Article 34. Retrieved 9 Feb 2012 from <http://www.qualitative-research.net/fqs-texte/3-04/04-3-34-e.htm>

-
- 1 **Trans-humanism (TH)** in this article may be abbreviated, in line with Wiki, as H+ or h+, is an international intellectual and cultural movement that affirms the possibility and desirability of using technology to fundamentally transform the human condition by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical, and psychological capacities. Associated with TH is the **Singularity (S)** which may be understood as the technological singularity which, is the theoretical emergence of super-intelligence through technological means when computer cognitive capacity exceeds that of humans anticipated at or before mid this century.
 - 2 In fact the phrase has been attributed to a number of different sources. Lewin is probably the most common of them.
 - 3 Technically, **complexity and chaos** are both conditions where interactions are so pervasive that analysis of cause and effect breaks down. 'Complexity' is a situation where there is high ambiguity. Patterns of cause-effect relationships can be understood only after the event. In a situation of 'chaos' the ambiguity is greater and patterns can no longer be discerned. Chaos is therefore more disturbing than complexity.

-
- 4 There are no minimal-light receptors at the retina's point of focus. This has the consequence that in night-adapted vision in very low light situations, a dimly-seen object disappears if you look directly at it. People who are accustomed to minimal-light situations learn to examine an object in peripheral vision. They look past it rather than at it.
 - 5 Stephen Hawking (A brief history of time, 1998, Bantam, p1) begins with an anecdote. 'A well-known scientist (some say it was Bertrand Russell) once gave a public lecture on astronomy. He described how the earth orbits around the sun and how the sun, in turn, orbits around the centre of a vast collection of stars called our galaxy.

At the end of the lecture, a little old lady at the back of the room got up and said: 'What you have told us is rubbish. The world is really a flat plate supported on the back of a giant tortoise.' The scientist gave a superior smile before replying, 'What is the tortoise standing on?' 'You're very clever, young man, very clever,' said the old lady. 'But it's turtles all the way down.'" This represents, as it were, a cycle of ever deepening analysis or intention. We have sought to propose in this paper, as in Fig. 4, that it's also turtles all the way up again, representing synthesis or extension in action in our day-to-day world.

- 6 In the form in which Sherwood used it, it consisted of a grid of the growth and decline of organisations, known as the '**change grid**' and developed in the late 1960s. Sherwood attributes the model to Robert Hoover, at the time apparently at the University of Cincinnati. As far as we have been able to ascertain Hoover did not publish it, and its use spread through Sherwood's work.
- 7 Each author has applied this methodology, a number of times over the past 20 years, in their respective practice the first author in Organisational Development and the second in strategic planning for NGO's and University Faculty (Social Science - Southern Cross University)