American Journal of Community Psychology

Manuscript Draft

Manuscript Number: 2008-069

Title:

Chasing Our Tails: Psychological, institutional and societal paradoxes in natural resource management, sustainability, and climate change in Australia

Browne, A.L.[1], & Bishop, B.J. [2]

[1] Research Centre for Stronger Communities, Curtin University of Technology, Western Australia

[2] School of Psychology, Curtin University of Technology, Western Australia and Australian Research Centre for Water in Society, CSIRO Land and Water, Western Australia

Abstract

Natural Resource Management (NRM) and Ecologically Sustainable Development (ESD) have been guiding frameworks in Australia for a number of decades. Recently, NRM and ESD have become central to climate change mitigation. In this paper, we explore the psychological paradoxes that function within climate change settings, with particular attention devoted to the way that research and development reinforces these paradoxes by advocating for participatory forms of inquiry. Paradox emerges in NRM at psychological, institutional, and organisational levels. Paradoxes are also features of different forms of democracy such as neoliberal and participatory democracy. Although NRM, ESD and climate change are often conceptualised as distinct issue domains, these policy areas are fundamentally interconnected in both theory and in practice. This interconnection between these policy and research settings, reflections on paradox, and the experience of incorporating community psychology into the paradoxical settings of NRM and climate change are captured in this paper.

Keywords: Climate change, paradoxes, natural resource management, methodology, abduction

Chasing our tails: Psychological, institutional and societal paradoxes in natural resource management, sustainability, and climate change in Australia

The notion of psychological paradoxes has seen a re-emergence in recent times. The paradoxical nature of happiness (Martin, 2008); self-awareness and identity (Mullen, Migdal, & Rozell, 2003); and organisational processes (Birnbaum, 2008; Fernandez-Alles, & Valle-Cabera, 2006) are examples of where the notion of paradox has been investigated. Psychological paradoxes have also been found in community responses to environmental concerns. Syme, Nancarrow, and McCreddin (1999) reported consistent findings over seven studies of conflicting values regarding the management of water resources, a sensitive issue in Australia which is the driest inhabited continent. They reported that the community could make complex judgements where community members felt competing concerns for individual rights to water and the need to protect the environment. We will explore the notions of psychological paradox in the context of climate change and natural resource management at three levels of decision making: the community; organisational and institutional; and at a societal level.

The basic premise of paradox is explored in psychological, organisational, and political literature. Paradox is a term used to describe conflicting demands, opposing perspectives, and illogical findings (Lewis, 2000). In describing paradoxes, Smith and Berg (1997) cited the exasperated comments of a Cretan named Epimenides who stated “All Cretans are liars!” Paradox has been used in psychology as a way of

understanding organisational behaviour and conflict (Smith & Berg, 1997). Understanding paradox as a structural feature of organisational and community settings is a useful tool for community psychologists and other professionals attempting to conceptualise the complexity of NRM systems (e.g., Browne, 2007; Cortner & Moote, 1999; Moon & Lim, 2002; Smith, 2000; Svedin, O'Riordan, & Jordon, 2001; Welby & Gowan, 1998). Paradoxes in NRM settings appear to serve as a set of boundaries which constrict or facilitate peoples' willingness to act (e.g., Cleaver, 2001).

Paradoxes are often complex and create conditions where conflicts between motives or actions are not easily resolvable. Smith and Berg (1997) described this as "stuckness". They alluded to one of these more complex paradoxes that is now known as the "existential paradox" that was articulated by Kierkegaard. The foundation of the paradox is the biblical story of Adam and Eve and their eviction from the Garden of Eden. Kierkegaard suggested that the eating of the apple was symbolic of the dawning of self-consciousness and the loss of innocence. Reflecting on the human condition, humans became aware of their mortality and also their ability to project themselves beyond the limitations of life dictated by death. The paradox is that life and death are intimately woven into people's lives; the goal of life is death. This triggers, for some, a desire to retreat into the blissful ignorance of denial. For others it requires faith in a God who will save them from ultimate death through the continuance of an immortal soul. At a fundamental level, one could argue that the increasing awareness of a range of environmental issues including climate change impacts has interwoven into its' discourse the characteristics of Kierkegaard's paradox. Gore (2006) adopted this perspective when he argued that responses to

climate change tended to be either that of denial or the belief that a technological 'god' would solve the problems.

There is a paradoxical, but often unobserved, cycle of environmental "tradeoffs" between different environmental policy areas in Australia. This paradox can be stated as follows: as the climate warms, rainfall decreases and evaporation also increases resulting in a greater need for water to support agricultural production. This results in the opening up of more agricultural land and developing alternative water sources that have a negative environmental impact. This leads to greater energy use and emissions which then impact negatively on climate change.

Many areas of Australia are also irreversibly saline, resulting in the clearing of habitable land for agricultural expansion. The complexity and uncertainty that characterises systems such as those described above (e.g., Gunderson & Holling, 2002) underpins the experience of paradox at all levels of environmental/human systems. The paradoxes expressed in these systems are also linked to issues such as the nature of postmodern/postcolonial research and policy, social justice, fairness, and other key community psychological concepts.

Paradox at the Personal Level

Personal experiences of paradoxical settings are often described through concepts such as conflict and descriptions of "stuckness" (e.g., Smith & Berg, 1997). One of the primary examples of psychological paradox is the experiential aspects of being engaged in global climate change and other NRM strategies. These strategies currently focus policy on individualised approaches to sustainable energy and environmental behaviours and consumption. When contrasted to organisational and

societal levels of analysis, an analysis of psychological paradox and experiences of it begin to gain more weight in terms of the way it reflects certain elements of social and political systems. Psychological paradoxes embedded in these environmental and climate change systems that emerge under analysis (particularly when viewed holistically with other 'levels' of analysis) are often the experiential aspect of equity and social justice, economic choice and freedom, and the impact of lifestyle, behavioural and other attitude change focused approaches. The conscious consumer is 'stuck' in a system of conflicting values that privileges both consumption and environmentalism.

An example of a psychological paradox which reflects stuckness and conflict relates to our observation and involvement in water supply and demand management research as a result of decreased water supplies in south-east Queensland, Australia. Purifying and recycling waste water in Queensland was initially suggested in two regions, the Sunshine Coast just north of Brisbane and Toowoomba, a rural city west of Brisbane. In both cases, resistance to the plans was organised by a community group calling themselves CADS (Community Against Drinking Sewerage). In both cases community reactions were negative enough to stop the plans. In Toowoomba (affectionately/cynically coined by CADS as 'Poowoomba' during the campaign), a local referendum to approve water recycling was lost even though water scientists assured the community that the process was safe for a range of purposes including drinking. Due to the severe water crisis in Queensland these communities needed alternative water supplies, but they were not willing to use recycled water. A number of people in these communities have indicated that the water shortage situation was partially due to the government's inadequate planning for water supplies in the face of increasing population and demand. Part of the psychological conflict in this situation

could be that a problem which was perceived as originating in government (lack of) planning for increasing state population and increased demand in water supplies was suggested as being resolved by a system perceived as compromising individuals.

Although we will not explore this issue in detail within this paper, these psychological paradoxes also exist and can be experienced at a 'global' level. Climate change is a global problem, with many arguing that what is needed is a 'global solution'. These various global expressions of psychological paradox, particularly the way that as Western consumers 'our choice' as consumers is portrayed as supporting a certain type of national/international discourses of climate change will be discussed further in the next section.

Institutional and Organisational Paradox in NRM R&D

As mentioned, paradoxes can affect how organisations and institutions function. In Australia one example is that the institutions that supply water to the cities are often the organisations that are responsible for improving efficiency and reducing water usage. Australian state governments have wrestled with the inherent paradox that these water supply institutions want to sell more water to the community, to maximise financial returns for government, while at the same time try to reduce the overuse of water resources and facilitate more effective water demand management. The paradox has been attempted to be addressed by separating the functions of water supply and water use efficiency by creating separate state agencies.

Paradoxes also emerge in research and policy settings through approaches that include and involve community participation and which reconfigure science towards engaged and participatory scientific inquiry (Bäckstrand, 2004). As discussed earlier,

solutions to water management and global climate change involve solutions targeted towards the individual, household and the community such as reducing and managing demand. Therefore, participatory and collaborative approaches are being increasingly supported and promoted by governments as appropriate strategies to catalyse change. Approaches that include 'context' and the community into research and policy frameworks (e.g., postmodern, poststructuralist, transdisciplinary, participatory approaches) consistently bring to the surface the underlying paradoxical structure of environmental policy and research settings. This underlying paradoxical structure may also be observed and experienced by community psychologists working in institutional and organisational settings for climate change, particularly if an inconsistency between the forms of democracy supporting climate change solutions is observed. Community psychology, historically, is more aligned with participatory democracy than the more commonly expressed neoliberal democracy. This may cause feelings of stuckness, conflict and a range of other difficulties for those involved in these settings. At a disciplinary level and within our organisations/institutions we will need to be aware of the potential experience of paradox and ways to overcome it. This will be discussed over the next sections of the paper.

In programs that focus on collaboration and integration of policy, scientific and community perspectives, a number of paradoxical elements can often be observed at an organisational level. For example, organisational paradoxes can be framed between issues such as flexibility and consistency, inclusiveness and accountability, expert and open decision making, bureaucracy and responsiveness, conflict and collaboration, centralisation and decentralisation, and ecological and human time frames (Cortner & Moote, 1999). Institutions and governments involved in NRM in Australia currently are engaged in these contradictory discourses of 'sustainability'

through an approach that frames a dichotomy between personal control and economy/governance.

These organisational/institutional paradoxes can be observed as the flux between different policy and governmental directives for both NRM and global climate change. For example, in both NRM and climate change in Australia a cycling between centralisation and decentralisation as guiding political philosophy can be observed. In relation to global climate change in Australia, centralisation occurs at times through the suggestion of nuclear power as a new 'green and clean' power source, and national level incorporation of strategies such as carbon trading. However, this alternatively swings between these centralised policy solutions for climate change, to decentralised approaches which focus on individualised, lifestyle and technologically based choices for 'consumers'. For example, hybrid cars, changing over to energy efficient lighting, turning off light and electrical sockets, and other household solutions have been suggested as being able to effectively impact on climate change. That is not to suggest that a range of 'centralised and decentralised' solutions to climate change are not necessary. The issue to be highlighted here, however, is the way in which policy directives around climate change in Australia paradoxically alternate *between* a centralised and decentralised approach. This is similar to the issue discussed earlier in this section in relation to the supply of water and the management of demand for the same system. In Australia, frequent governmental structural changes that alternate the two paradoxical roles of supply (cost recovery) and demand between separate and connected departments reflects the lack of resolution of this institutional/organisational paradox.

At another level there are a number of issues that are observed in Australia's approach to climate change that bridge the societal and the organisational expression

of paradox. For example, the move to environmental sustainability and a greater focus on climate change are strongly emerging from the first world. However, Australia is also invested economically, politically and socially in minerals and other forms of mining expansion. Particularly in Western Australia, we have experienced an 'accelerated' form of minerals and resource development juggernaut, that only recently begun to slow down since the downturn in the global economy in 2008. Australia, as a resource rich nation, is supporting the economic paradox in the relationships being established between developed and developing nations, where we are both encouraging these developing countries to (inequitably?) engage in 'sustainable development' and climate change initiatives, while developing those resources supplied by Australia into consumables.

As of the beginning of 2009 solutions to the current global economic crisis in Australia involve targeted and fiscally supported infrastructure and economic development. It appears that in periods of 'boom *and* bust', the development of Australia as a nation is intrinsically linked with primary resources (such as mining) and 'development' (such as infrastructure, housing etc). Although this is embedded in an increasingly visible political discourse regarding the environment and a range of environmental crises including climate change, a fundamental paradox emerges regarding the relationship between economy, environment/nature and democracy in Australia. This reflection on Australia's economic paradox is connected to a deeper, more covert societal paradox about the way that dual frameworks for democracy currently shape environmental and climate change research and policy.

Societal Paradox: The Paradox of Democracy

A major paradox for climate change is that in first world countries the economy is dependant on energy production and supply, yet this dependence is fuelling and accelerating global warming. Often the nature of the societal paradox of NRM and climate change is lost in the politics of natural resource exploitation, and a system that relies on this exploitation to maintain economic growth. For example, just as the US government's environmental policies are affected by the powerful lobbying of energy interests (Flannery, 2005), Australian environmental policies have been largely controlled by the coal industry and other energy industries (Hamilton, 2007). Hamilton writes that the coal industry has such a powerful lobbying position that it has boasted that it wrote the previous federal government's climate change policies. Aside from the powerful impact of vested interests, there is the broader paradox in that energy production is at the core of economic development and it is this increasing energy production and consumption that has created and maintains global warming. There is another level to this paradox in that economic development and population growth are based on economic worldviews that expansion of the economy has been essential for countries like Australia and the U.S. (Atkinson & Hamilton, 2003; Hamilton & Quinn, 2005; Stern, 2005). In Australia the resultant global warming from the use of non-renewable fossil fuels is that the continent is drier and the carrying capacity (the sustainable capacity of the land to support human and non-human life) is threatened.

Paradox is something that can be directly experienced. However, it can also be observed outside of these tangible organisational, community and personal settings. Paradox can be located in the contradictory and competing discourses that

shape and inform environmental and climate change research and policy. Governmentality reflects the features of capitalist, neoliberal and globalised societies that at once promote a certain type of contractual social, political, economic and environmental context, yet is increasingly applied through strategies such as participatory democracy, human rights, empowerment and citizen engagement. Global (western) society is currently characterised by dualisms between the various forms of democracy (Marcil-Lacoste, 1992). Theoretically these concepts and expressions of paradox expressed through these dualistic forms of democracy can be related to theoretical issues currently being explored in community psychology. These paradoxical 'dualisms' could be as easily suggested to be an alternative expression of relationships between concepts such as Gemeinschaft/Gesellschaft (Tönnies, 1887/1957) and the Third Position (Bishop, Vicary & Browne, 2009; Newbrough, 1995), The One and the Many (Adler & Gorman, 1952), and specifically related to R&D strategic/top-down approaches versus 'grassroots' participatory approaches.

Complex social, political and environmental questions in NRM are framed from different 'oppositional' perspectives from these two conceptualisations of democracy. Resolution of stuckness and conflict between these perspectives is often attempted through various approaches to research and policy. For example, in NRM, attempts to bridge these dualistic perspectives take the form of finding 'common ground' (e.g., Plumwood, 1991). However, Marcil-Lacoste (1992) in a discussion about the relationships between the One and the Many in different historical expressions of democracy, highlighted how, although not identified in practice, this duality may actually be more accurately represented as a plurality. That is, these different forms of democracy are often represented as dualistic and any attempt within policy or research to address these dualisms reinstates a fundamental societal paradox.

Each perspective is "conceptualised within an epistemological and axiological monism which – and here is the paradox – makes it inseparable from its opposite" (p. 132). Similarly, Mouffe (1992) suggested that this represents a conversation regarding democracy where "two different languages in which to articulate our identity as citizens are confronting each other" (p. 226). These different representations of democracy are currently 'engaged' through various forms of R&D and policy to address land and water management and climate change in a dialogue, which actually makes them inseparable. By attempting to overcome psychological, institutional or organisational level paradox by trying to resolve only one conceptualisation of the problem (e.g., addressing only the creation of improved water supply systems or only household demand management) actually reinstates a broader societal level paradox. This classification of opposing perspectives within NRM and ESD, are linked to this plurality paradox and what is framed as oppositional perspectives may in fact be connected and inseparable parts of the same system.

Although a duality is actually assumed, as an example of these plural and integrated concepts, Australian government and bureaucratic settings attempt to govern the environment and people through the democratic processes as well as through 'macro level' polices reflecting ideologies such as neoliberalism, globalisation, and capitalism. These approaches encourage individual competition and bidding for involvement in engaged NRM while promoting benefits such as individualised, controlled forms of empowerment. Conflicts over different ways to approach NRM, ESD, water management and climate change reflects a 'clash of civilisations', characterised by attempts to consolidate (politically) differences between fundamentally and diametrically opposing cultural and ideological positions (e.g., Caldera, 2004; Huntington, 1991). Currently ecologically based forms of

democracy attempt to empower citizens through participation and collaboration. However, paradoxically, at the same time these approaches are suggested in a social and political environment that encourages individualism and competitiveness, reflective of neoliberal capitalism. Community psychology, in casting a methodological and theoretical 'eye' over the issues of climate change and NRM, needs to be careful to not reinstate this fundamental paradox but to work towards solutions that address paradoxes at all levels.

The Implications of Paradox for Community Psychology Methodology and Theory to Address Climate Change

One paradox about paradoxes is that while the outcome may be stuckness, which implies slow or no change, it is the people faced with the paradox who are stuck and not necessarily other aspects of a given community or context. We now see that some of the climate change predictions are occurring more rapidly than expected. Paradox creates an inability to respond to change, even though climate change is threatening the nature of our existence (Flannery, 2005; Gore, 2006). The environment is changing more rapidly than humans can adapt to change. In this situation community psychology needs to change quickly also. Centrally, we need to be players in social action, to take the role of facilitating the change processes. Community psychologists cannot take on the role of the dispassionate researcher, removed from the very people they are working with. Partnership with community implies changing our roles to recognise that we are players in a game in which we all will lose.

Policy response will need to be rapid. Research to inform policy will also need to be rapid. This means that long-term and well executed research will not be possible. Research must be seen as part of the policy process and part of societal change. Our assumptions, of what the nature of the community and society are, will need to be reconceived, we will finally and necessarily need to be Model II learners and use ‘double loop learning’ (Argyris & Schön, 1978). Model II emphasize participation and sharing control, deemphasizing winning at all costs. As Argyris (1976) stated: "Every significant Model II action is evaluated in terms of the degree to which it helps the individuals involved generate valid and useful information (including relevant feelings), solve the problem in a way that it remains solved, and do so without reducing the present level of problem solving effectiveness" (pp. 21-22). Argyris and Schön distinguish between single-loop and double-loop learning. In single-loop learning, people modify their actions according to the difference between expected and obtained outcomes. In double-loop learning, the actors reflect on the values, assumptions and policies that led to the actions in the first place; if they are able to recognize and modify those then double-loop learning has taken place. While Argyris and Schön were concerned with organizational level learning (and the validity of the approach has been criticised, Lipshitz, 2000), the concepts are very useful at the researcher and practitioner level. This reflective process means that the nature of the problem, as well as solutions are examined and developed.

The nature of the reflective research data and conclusions will be less internally valid than is traditionally afforded by laboratory research. More ‘weak’ knowledge claims will be made as we do not have the time as researchers to spend getting longer term ‘strong’ knowledge claims. Knowledge claims will need to be strengthened by using contextual information and multidisciplinary knowledge to

bolster conclusions. In developing a picture of the complex environment, a series of smaller research projects are needed that build on each other. The notion that it is possible to conduct a large scale study that has definitive answers is misguided as this reflects reductionistic thinking. Reductionist thinking, in this domain, is unhelpful as it assumes that aspects of context can be held constant while a specific hypothesis is tested. The nature of complexity is such that it is not possible to pin some aspects down. The strength in research outcomes will require triangulation of findings so that external validation is determined, not by any one research outcome, but by developing consensus between diverse research findings and researchers. This will mean that community psychologists will have to let the nature of the social problems associated with mitigation and adaptation to climate change dictate the nature of our research. We will need to open up the discipline to others to work in partnership.

Research will become more speculative and our research process will need to be based on what Peirce (1955) called ‘abduction’, where knowledge claims are based on logical analysis of weak claims. This will require what Polkinghorne (1983) called assertoric knowledge. We need to recognise that ‘limited research’ is better than no research, and that community psychological input may be required where there is not the research to back up our speculations. Again, a social voice based on speculation or intuition serves the state and the world better than no voice. We need to frame our science in terms of the questions that need to be asked, rather than in terms of the ‘scientific merit’ or status earned by the researchers. This requires working at the ‘coal face’, an unfortunate term, in this context! By this we mean that although community psychology has many of the methodological and theoretical skills necessary to address the issues of climate change, will need to develop new and contextually responsive research designs.

The complexity of the issues surrounding climate change means that definitive answers are not possible as the eco system is too complex. Dealing with how we ask questions is as important as the questions we and others ask. Unfettered questions are driven by unexamined worldviews. A role for the community psychologists is to use a worldview analysis of policy and research. Community psychology has recognised the importance of power (e.g., Nelson & Prilleltensky, 2005), and thus the importance of governance, politics and policy. Worldview analysis based on the ethical understanding inherent in community psychology can provide a structure to ensure we ask the best questions. The social justice framework of community psychology evident from its inception (e.g., Nelson & Prilleltensky, 2005; Rappaport, 1977; Reiff, 1968) offers opportunities to analyse who has stood to gain from the emission of greenhouse gases, who has paid the price, how we will deal with those who are victims of global warming, and how can their voices be heard and their plight recognized. The paradox of the assumption that the world needs economic development and expansion with little thought for the environmental and social costs needs to be questioned. This requires that the notions of democracy need exploration as part of the research process.

The ideals of democracy functioning within dominant neoliberal, capitalist and neoliberal world environments, create and form approaches that bring together citizens and scientific/policy experts in a way that still privileges expert frameworks for understanding, but attempts to create settings where communities are transformed by engagement. There is a paradoxical conflict of balancing these different positions of community, layperson or citizen, and the “expert”. The challenges that this brings for community psychologists attempting to explore (and encourage) community engagement with environmental research and policy, and specifically climate change,

will underpin the discussion in this section. There is a need to adopt methodological approaches within community psychology that allow us to observe, and effectively to work toward creating change to, the paradoxes that emerge in these complex settings.

Community psychology is already at the forefront of adopting multidisciplinary and transdisciplinary perspectives (e.g., Reich & Reich, 2006) that are necessary for addressing these complex issues. These perspectives are increasingly being used by community psychologists working in environmental arenas in Australia and the U.S. (e.g., Bennett, 2005; Browne, Bishop, Bellamy & Dzidic, 2004; Browne & Bishop, 2007). We need to be cautious and adopt critical, iterative and reflexive methods (e.g., Bishop, Sonn, Drew & Contos, 2002; Dokecki, 1992; Lawson, 1985) so we do not re-embed the discipline or the communities that we are working with back into the paradoxical experience of these environmental settings. Within this we must recognise that that transdisciplinarity involves adopting a scientific approach to analyse and inform complex social and environmental settings, and therefore, has the ability to reinscribe the 'expert/community' dichotomy as does other forms of research practice.

Community psychology's strong connection with contextualism (e.g., Payne, 1996; Pepper, 1942) will provide a good background for exploring the issues of paradox and complexity that emerge in environmental and climate change research and policy settings (e.g., Browne, 2007). Also, our strong history of theory and practice with being translators (e.g., Freire, 1972), advisor (e.g., Minson, 1998), border crosser (e.g., Sarason & Lorentz, 1998), active mediator, and other direct roles in involving the community, can be used to effectively create connections between policy, science and the community involved in global climate change (Fischer, 2000).

What community psychology needs to develop however, is a stronger, and more 'multidisciplinary' approach to contextualism, and one that is not, fundamentally, modernistic (Newbrough, 1995). Although as a discipline our approach to contextualism is relatively strong, there are other disciplines that also have been developing and refining alternative forms of contextualism that may well inform our theory, methods and practice (e.g., human geography, political ecology, and sociology). This is particularly necessary as currently the 'macro' level phenomenon such as the neoliberal democracy/participatory democracy 'dualism' is not easily expressed through community psychological contextualism or community psychologically disciplined 'language' (Browne, 2007). Therefore, while developing our own theory and methodology to effectively address climate change we will need to work with other disciplinary perspectives that more effectively address complexity and paradox (e.g., Kendall & Wickham, 1999).

Conclusion

In this paper we introduced how the concept of paradox can be used to understand some of the challenges community psychologists and others operating in climate change settings may face. We discussed this at the personal, the organisational/institutional and societal levels. We showed how individuals and communities can easily get stuck if paradoxes are not identified and overcome. Identifying solutions for climate change involves recognising that there are fundamental paradoxes embedded in the solutions as they often conflict with current dominant ideologies of the (neoliberal) economy and 'capitalistic' democracy. Identifying solutions to climate change involves addressing fundamental paradoxes at

multiple scales, and recognising the way in which individual and organisation stuckness is embedded in the contexts of, and intersections between, economy, nature and democracy. A move away from understandings of solutions to climate change based on dichotomies to pluralistic approaches is both appropriate and necessary.

The threat of getting ‘stuck in a paradox’ as researchers has direct consequences for community psychology. We discussed the implications of this for community psychology including the necessity to more authentically adopt multidisciplinary and transdisciplinary perspectives, and to embed practice and research in a rigorous process of critical self-reflection. These processes are important so the discipline, or the communities that we are working with regarding climate change, are not re-embedded into these multiple scales of paradox. By effectively addressing the complexities and multiple scales of paradoxes when addressing climate change scenarios, community psychology will be able to positively engage with, and influence, issues of sustainability and climate change in research, community and policy settings.

References

Adler, M.J., & Gorman, W. (1952). *The great ideas: A syntopican of great books of the Western World.* Chicago: William Benton.

Argyris, C. and Schön, D. (1978). *Organizational Learning: A theory of action perspective,* Addison-Wesley, Reading MA, 1978.

Argyris, C. (1976) *Increasing leadership effectiveness.* New York: Wiley-Interscience.

Atkinson, G., & Hamilton, K. (2003). Savings, growth and the resource curse hypothesis. *World Development, 31*, 1793-1807.

Bäckstrand, K. (2004). Scientisation vs. civic expertise in environmental governance: Eco-feminist, eco-modern and post-modern responses. *Environmental Politics, 13*, 695-714.

Bennett, E. (2005). Environmental degradation and ecologically minded alternatives. In G. Nelson & I. Prilleltensky (Eds.), *Community psychology: In pursuit of liberation and wellbeing*. (pp. 468-86). London: Palgrave Macmillan.

Birnbaum, M. H. (2008). New paradoxes of risky decision making. *Psychological Review, 115,* 463-501.

Bishop, B. J., Sonn, C.S., Drew, N. M. & Contos, N. E. (2002). The evolution of epistemology and concepts in an iterative-generative reflective practice: The importance of small differences. *American Journal of Community Psychology, 30*, 493-510.

Bishop, B.J., Vicary, D.A., & Browne, A.L. (2009) Public policy, participation and the third position: The implication of engaging communities on their own terms. *American Journal of Community Psychology, 37*, pages?.

Browne, A.L. (2007). *A contextual analysis and critique of complex, engaged Natural Resource Management Research and Development settings*. PhD Thesis. Curtin University of Technology.

Browne, A. L., & Bishop, B.J. (2007). Natural resource management methodology: Lessons for complex community settings. *The Australian Community Psychologist, 19,* 124-136.

Browne, A. L., Bishop, B. J., Bellamy, J. A., & Dzidic, P. L. (2004). Redefining Natural Resource Management as a human activity and a natural place for

Caldera, A.S. (2004). The limits and alternatives to democracy – Democracy in the era of globalization. In J.M. Choi, J.W. Murphy, & M.J. Carp (Eds.), *Globalization with a human face*. (pp. 117-158). Westport, Connecticut: Praeger.

Cleaver, F. (2001). Institutions, agency and the limitations of participatory approaches to development. In B. Cooke & U. Kothari (Eds.), *Participation: The new tyranny*. (pp. 36-55). London: Zed Books.

Cortner, H.J., & Moote, M.A. (1999). *The politics of ecosystem management.* Washington, D.C.: Island Press.

Dokecki, P.R. (1992). In knowing the community of caring persons: A methodological basis for the reflective-generative practice of community psychology. *Journal of Community Psychology, 20*, 26-35.

Fernandez-Alles, M. & Valle-Cabrera, R. (2006). Reconciling institutional theory with organisational theory: how neoinstitutionalism resolves five paradoxes. *Journal of Organizational Change management, 19*, 503-517.

Fischer, F. (2000). *Citizens, experts and the environment: The politics of local knowledge*. Durham, NC: Duke University.

Flannery, T. (2005). *The weather makers: The history & future impact of climate change*. Melbourne, Australia: Text Publishing.

Freire, P. (1972). *Pedagogy of the oppressed.* (M.B. Ramos, Trans.). Middlesex, U.K.: Macmillan.

Gore, A. (2006). *An inconvenient truth: The planetary emergency of global warming and what we can do about it*. London: Bloomsbury.

Gunderson, L.H. & Holling, C.S. (Eds.) (2002). *Panarchy: Understanding transformations in human and natural systems*. Washington, D.C.: Island Press.

Hamilton, C. (2007). *Scorcher: The dirty politics of climate change*. Melbourne: Black.

Hamilton, M. P. & Quinn, M. S. (2005). Sustainable community development and ecological economics: theoretical convergence and practical implications. *Local Environment, 10*, 141-158.

Huntington, S.P. (1991). *The third wave: Democratization in the late twentieth century*. Norman: University of Oklahoma Press.

Kendall, G., & Wickham, G. (1999). *Using Focaults' Methods*. London: Sage.

Lawson, H. (1985). *Reflexivity: The postmodern predicament*. London: Hutchinson.

Lewis, M.W. (2000). Exploring paradox: Toward a more comprehensive guide. *Academy of Management Review, 25*, 760-776.

Lipshitz, R. (2000). Chic, mystique, and misconception: Argyris and Schön and the rhetoric of organizational learning. *The Journal of Applied Behavioral Science, 36,* 456-473.

Marcil-Lacoste, L. (1992). The paradoxes of pluralism. In C. Mouffe (Ed.), *Dimensions of radical democracy: Pluralism, citizenship and community*. (pp. 128-142). London: Verso.

Martin, M. W. (2008). The paradoxes of happiness. *Journal of Happiness Studies, 9,* 171-184.

Minson, J. (1998). Ethics in the service of the state. In M. Dean & B. Hindress (Eds.), *Governing Australia: Studies in contemporary rationalities of government* (pp. 47-69). Cambridge: Cambridge University Press.

Moon, C-I., & Lim, S. (2002). Weaving through paradoxes: Democratization, globalisation and environment paradoxes in South Korea. In H. Hveem & K. Nordhaug (Eds.), *Public policy in the age of globalisation: Responses to environmental and economic crises* (pp. 71-95). London: Palgrave Macmillan.

Mouffe, C. (1992). Democratic citizenship and the political community. In C. Mouffe (Ed.), *Dimensions of radical democracy: Pluralism, citizenship and community*. (pp. 225-239). London: Verso.

Mullen, B., Migdal, M. J. & Rozell, D. (2003). Self-awareness, deindividuation, and social identity: unravelling theoretical paradoxes by filling empirical lacunae. *Personality and Social psychology Bulletin, 29,* 1071-1081.

Nelson, G. B. & Prilleltensky, I. (2005). Community psychology: in the pursuit of liberation and well-being. Basingstoke: Hampshire: Palgrave Macmillan.

Newbrough, J.R. (1995). Toward community: A third position. *American Journal of Community Psychology, 20,* 7-9.

Payne, R.L. (1996). Contextualism in context. *International Review of Industrial and Organizational Psychology, 11*, 181-217.

Peirce, C. S. (1955). *Philosophical writings of Peirce: selected papers*. New York: Dover.

Pepper, S.C. (1942). *World hypotheses*. Berkeley: University of California Press.

Plumwood, V. (1991). Nature, self, and gender: feminism, environmental philosophy, and the critique of rationalism. *Hypatia, 6*, 3-27.

Polkinghorne, D. (1983). *Methodology for the human sciences: systems of inquiry*. Albany: State University of New York Press.

Rappaport, J. (1977). *Community psychology: values, research and action.* New York: Holt, Rinehart and Winston.

Reich, S., & Reich, J. (2006). Cultural competence in interdisciplinary collaborations: A method for respecting diversity in research partnerships. *American Journal of Community Psychology, 38*, 51-62.

Reiff, R. (1968). Social intervention and the problem of psychological analysis. *American Psychologist, 23*, 524-531.

Sarason, S.B., & Lorentz, E.M. (1998). *Crossing boundaries: Collaboration, coordination and the redefinition of resources*. San Francisco: Jossey-Bass.

Smith, K.K., & Berg, D.N. (1997). *Paradoxes of group life: Understanding conflict, paralysis, and movement in group dynamics*. San Francisco: Jossey-Bass.

Smith, Z.A. (2000). *The environmental policy paradox*. (3rd ed). New Jersey: Prentice Hall.

Stern, N. (2005). *The economics of climate change: the Stern review*. Cambridge, UK: Cambridge University Press.

Syme, G. J., Nancarrow, B. E. & McCreddin, J. A. (1999). Defining the components of fairness in the allocation of water to environmental and human uses. *Journal of Environmental Management, 57,* 51-70.

Svedin, U., O'Riordan, T., & Jordan, A. (2001). Multilevel governance for the sustainability tradition. In T. O'Riordan (Ed.), *Globalism, localism and identity: Fresh perspectives on the transition to sustainability* (pp. 43-60). London: Earthscan.

Tönnies, F. (1955/1974). *Community and association (gemeinschaft und gesellschaft).* (C.P. Loomes, Trans.). London: Routledge, Kegan Paul.

Welby, C.W., & Gowan, M.E. (Eds.) (1998). *A paradox of power: Voices of warning and reason in the geosciences*. Boulder, Colorado: Geological Society of America.