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Environmental Sustainability Research Centre (ESRC)
Working Paper Series
ESRC-2013-002

Power, Contextual Intelligence and Leadership: Research Approaches for Understanding Participatory Community Climate Change Adaptation

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Power, Contextual Intelligence and Leadership: Research Approaches for Understanding Participatory Community Climate Change Adaptation

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Abstract

Analysis of power in natural resources management is important as multiple stakeholders interact within complex, social-ecological systems. As a sub-set of these interactions, community climate change adaptation is increasingly using participatory processes to address issues of local concern. While some attention has been paid to power relations in this respect, e.g. evaluating international climate regimes or assessing vulnerability as part of integrated impact assessments, little attention has been paid to how a structured assessment of power could facilitate real adaptation and increase the potential for successful participatory processes. This paper surveys how the concept of power is currently being applied in natural resources management and links these ideas to agency and leadership for climate change adaptation. By exploring behavioural research on destructive leadership, a model is developed for informing participatory climate change adaptation. The working paper then concludes with a discussion of developing research questions in two specific areas - examining barriers to adaptation and mapping the evolution of specific participatory processes for climate change adaptation.

Key Words

Power; agency; contextual intelligence; leadership; adaptation; climate change

Acknowledgements

This report is the result of the thoughtful input of a number of colleagues. I would like to especially thank Ryan Plummer and fellow researchers at the Brock University Environmental Sustainability Research Centre for their support and guidance. In addition, Derek Armitage and Mark Andrachuk from the University of Waterloo, Environmental Change and Governance Group provided important insights. This topic has benefited from discussions with Adam Fenech, Director, Climate Centre at the University of Prince Edward Island during a climate change adaptation leadership workshop in July 2012. Finally, thanks also to ESRC reviewer Tim Heinmiller.

1.0.Introduction

The usefulness of participatory approaches and community engagement in community climate change adaptation, often in the broader context of exploring sustainability, has been widely advocated and operationalized in Canada (e.g., Cohen et al., 2006, Bizikova, 2009, Bizikova et al., 2008, Sydneysmith et al., 2010, Vasseur, 2011, Kløcker Larsen et al., 2012, May, 2013). This is consistent with the findings of the Intergovernmental Panel on Climate Change's Fourth Assessment Report.

> *Participatory approaches can help to create dialogues that link and mutually instruct researchers, practitioners, communities and governments. There are, however, challenges in applying these processes as a methodology for using dialogue and narrative (i.e. communication of quantitative and qualitative information) to influence social learning and decision-making, including governance"* (Yohe et al., 2007: 832).

In some instances, this has led to calls for embedding these approaches into existing planning guidelines and standards (Lim & Spanger-Siegfried, 2005, May & Plummer, 2011). However, one of the challenges relates to the idea that decision-making and governance necessitate consideration of both puzzling and powering in structuring participation (Hoppe, 2011). Puzzling relates to how policy problems are framed and structured, usually in some deliberative fashion. Powering is concerned with how policy options are selected, implemented and authority exercised within this deliberation. The focus of this working paper is primarily on powering.

Participation and collaboration involve power dynamics that influence if, when and how adaptation solutions emerge. How power and power relationships between actors[1] influence, and are influenced by, participatory decision-making processes for climate change adaptation have been touched upon in a few instances (e.g. Andreson & Agrawal, 2002, Adger, 2003, Few et al., 2007, Matthews & Sydneysmith, 2010). Tools for examining power and climate change adaptation have yet to be developed. Moving away from traditional, apolitical treatments of actors and networks and explicitly addressing power and how it is formally or informally conferred and exercised from an actor's, as well as an organization's, viewpoint can serve to aid in the development not only of community action research, but also increase the likelihood of meaningful dialogue between stakeholders.

In natural resources management, the exercise of power has been examined in a variety of ways (Raik et al., 2008), more particularly related to social learning (Armitage, Marschke & Plummer, 2008), the role of opinion leaders (Crona & Bodin, 2010), super agents (Dengler, 2007), scale crossing brokers (Ernston et al., 2010), and boundary objects (Lynch et al., 2008). These most recent works have one constant – the qualities

[1] The term "actors" is used here in a generic sense to describe individuals who take part in social action, along with their qualities, feelings, intentions and understandings, as well any social constraints (Penguin, 2013)

being described are aspects of agency and personal leadership. How it is made manifest in participatory approaches is extremely important. All of these aspects of power can be usefully applied for developing influential approaches to community climate change adaptation. Actors, agents, leaders, and the power they perceive, possess and exercise, can be crucial in the success or failure of community-based participatory approaches.

The sections that follow will discuss power and agency, their relation to leadership, and how both power and leadership can influence participatory climate change adaptation. Then, a proposed analytical framework is developed. After that, implications for future research are discussed in two areas, addressing barriers to adaptation and explaining how community adaptation initiatives develop over time. In conclusion, some final observations are made.

2.0.Power, Agency and Spaces of Power for Action

In summarizing why considering the concept of power is important, Lukes argues that "… we need it because it is indispensable to practices that we inescapably engage in as social and political beings" (2002: 491). These practices encompass the social inequalities where the distribution of power is differentially situated between individuals and groups (op cit., 491). Power can be viewed as either coercive (a one way exercise of control), constraining (a partial, more subtle exercise of control), consensual (influence through mutual consent or co-production), or real - "the capacity to act within pre-conditioned, structured social relations" (Raik et al., 2008, 736). The important research possibilities of this view are that "…both social structure and agent emerge as units of analysis that interact and depend upon one another" (op cit., 736). The concept of power resources, "the attributes (capacities or means) of actors (individuals or collectivities), which enable them to reward or to punish[2] other actors" (Korpi, 1985: 33) is also an important unit analysis. These resources can be sanctioning (from legislative authority), remunerative (from possession of physical capital), or normative (from accumulation of human capital, such as knowledge, skills, education, or networking capacity) (Korpi, 1985).

These views are relevant to discussion of community climate change adaptation. In any given participatory adaptation process, there will be those who possess coercive or constraining forms of power, such as representatives from municipal or government agencies and those who exercise consensual forms, such as academic researchers, business representatives or those from non-government organizations. In addition, the degree of availability of power resources will be different. Group interactions will require all participants to navigate the subtleties and nuances of real[3] power.

[2] by "punish" Korpi (1985: 35) is referring to the use of pressure or reward by one person to elicit a response in another (with their own power resources), which can lead to exchange, exploitation or conflict (see also the discussion of destructive leadership in Section 3.0)

[3] i.e. "getting things done" through the assumption of multiple and varied roles as well as acknowledging the importance of social relationships in structuring interaction (Raik et al, 2007: 736-737)

Agency, too, becomes important as it describes "the capacity of persons to transform existing states of affairs" (Harvey, 2002: 173) or "…a process of bottom-up emergence [of] new qualities and structures … by social interaction" (Fuchs, 2003:144). This takes the previous view of generic actors presented above, adds elements of the exercise of various forms of power and places them in a specific social-ecological context. In developing frameworks to assess community resilience, it has been conceived as "… the capacity of an individual to act independently to make one's own free choices" (Berkes & Ross, 2013: 15). In keeping with earlier work, there is also the acknowledgement that agency can have a number of different dimensions - personal, proxy or collective (Bandura, 2000: 75).

For the purposes of this working paper, the realist view of power is most relevant to the process of participatory community climate change adaptation. Actors from various socially-created institutions come together with their own particular power bases and power resources (Korpi, 1985) to either develop an emergent structure or build upon existing structures that facilitate adaptation and sustainability. In addition, it is also most inclusive of the other three types described. A final point is that this approach acknowledges there are a broader set of more subtle practices at the disposal of agents, such as negotiation, discussion, persuasion, communication and decision making (Raik et al., 2008: 731).

How power is exercised in various governance arrangements, from the most local to global, is very much related to agency and how agents interact within their various areas of interest, as discussed above. Consideration of power also embodies concepts not only of authority, but also of influence (Biermann et al., 2009: 67). Both authority and influence are important when trying to approach questions surrounding the decentralized decision-making that occurs in present day natural resources management. Potential actors are many, and the way they perceive their roles in these types of processes have both an internal and external motivational dimension. There is this external pull between what home organizations may want to achieve out of collaborative processes and what the process itself may require of actors as individuals. Further, individuals may have their own views on their involvement. This actor contextualization is an extremely important aspect of participatory processes, especially for the evolution of stakeholder groups and actors, and how power relations are seen to emerge (see Armitage (2008: 20-21) for this perspective).

Dengler (2007) expands on the idea of individual exercise of power to consider "spaces of power for action" (p. 423) in the realms of science, policy and local knowledge. This idea of spaces in which power operates is important when trying to understand the dynamics of participatory processes for climate change adaptation. Key information on climate, both historical and future scenarios, required for adaptation decision making, is usually the domain of scientists within government or academia. Detailed studies on impacts may be the domain of other agencies, state or local. Policy makers are responsible for using some form of structured approach, such as risk management (Bruce et al., 2006) to make decisions. Holders of local knowledge are in possession of the necessary ingredients and experience that make decisions relevant (Cohen, 2006).

Merely recognizing that actors and institutions have individual power within structured social relations that consist of these broad areas, does not ensure that local participatory processes will result in fair, equitable and informed decisions. It is the power interactions across these spaces that become important. In some cases, the exercise of power within and between these spheres may be maladaptive, leading to less flexible institutional arrangements and increased environmental risk, as Crona & Bodin (2010) suggest in the analysis of power asymmetries and the role of opinion leaders in East African fishery communities. Or conversely, they can be liberating, leading to supportive roles played by midscale managers and scale-crossing brokers (Ernston et al., 2010). One could ask if similar results could have been achieved in the Florida Everglades if it wasn't for the presence of super-agents (Dengler, 2007), those actors which can bridge the various spaces of power and are comfortable crossing those boundaries.

3.0.Leadership

Since power, as mentioned in the previous section, is also closely tied with the ideas of impact and influence (Biermann, 2009), how can its analysis lead to understanding the roles of power, agency and leadership? At is most basic, leadership is "…a social influence process, operating with constraints" (Pfeffer, 2000: 211). In essence, agency, as defined in the previous section, creates important pre-conditions for action, power provides options for its expression, and leadership is the manifestation of these capabilities. When deciding on what power options to use, Nye (2010: 306) identifies three key components of leadership that set the stage for the exercise of power – "leaders, followers and the contexts in which they operate." As defined by Nye (2010), this contextualization can set the stage for whether an individual exerts what he terms hard power (through inducements and threats), soft power (through getting outcomes one wants by attracting others) or smart power (a dynamic hybrid of the two, based on context), a concept that requires the development of contextual intelligence.

Contextual intelligence i.e. combining both individual positions of power, through one's role in an organization, and through socially-granted contexts, is key to understanding how agents establish their role as leaders in participatory processes. This differs slightly from other concepts that deal with the importance of context, such as wisdom – a three dimensional personality characteristic that involves an understanding of life and a desire to know the truth, a perception of phenomena and events from multiple perspectives and sympathy and compassion for others (Ardelt, 2004: 275) or judgement – "what the decision maker adds to cope with the uncertainty which exists in the situation he/she confronts" (Brownlie & Spender, 1995: 40). Nye clearly links contextual intelligence to power as "the ability to understand context so that hard and soft power can be successfully combined into smart power strategy" (Nye, 2010: 327).

The processes which are the topic of this working paper, community-based climate change adaptation, with their novelty and uncertainty, at a number of different levels and scales (such as purpose, scope, complexity), are fertile grounds for the utilizing contextual intelligence. Shepherd et al., (2006) in their study of the Okanagan Basin in

British Columbia, Canada define specific aspects of context when identifying appropriate adaptation strategies (Figure 7, 59):

- The presence of multiple stressors
- Signal detection and attribution
- Decision processes
- Implementation strategies
- Outcome and evaluation metrics
- Learning and feedback.

In addition, there is a sub-set of the literature on leadership that focuses on destructive or bad behaviours that can derail the social influence process (Einarsen et al., 2007). Consideration of what may not be seen as effective leadership styles can provide guidance on how relations of power may be misused and therefore once identified, avoided. This research provides a potential means for the mapping of contextual intelligence. See Figure 1 and the discussion that follows.

When examining leaders in an organizational context, behaviour can be viewed as moving in a conceptual space between either a pro- or anti- organizational stance (the degree to which it supports overall strategic direction) or pro- or anti- subordinate stance (the degree to which it supports those people dependent upon the leader's power for decision-making - followers). A leader's style, as it is expressed within this two-dimensional organizational space, can be categorized as one of four types. These are:

1. Supportive-Disloyal (anti-organization but pro-subordinate) – leaders who focus more on their employees to the detriment of overall strategic direction
2. Derailed (anti-organization and anti-subordinate) – leaders that are neither in tune with organizational objectives nor the needs of their employees
3. Tyrannical (pro-organization but anti-subordinate) – leaders who put overall strategic direction above all other considerations, and
4. Constructive (pro-organization and pro-subordinate) – leaders who are aligned to both the organization's direction and employee needs and competencies (Einersen at et al., 2007: 211).

Moving within this organizational space requires a high degree of contextual intelligence, not only to be effective, but also to avoid those aspects of leadership that can be destructive to both organizations, subordinates, and one could add, leaders themselves. In essence, this can point to the mis-application of power in a given setting. Leadership has been identified as one of the strengths or characteristics of community resilience that leads to agency and self-organization (Berkes & Ross, 2013), as well as builds adaptive capacity (Gupta et al., 2010). The relevance of this to community participatory approaches for climate change adaptation is discussed next.

4.0. Contextual Intelligence and Participatory Community Climate Change Adaptation

In a survey of the international climate change regime from the mid-1950s to the mid-1990s, Andresen and Agrawala (2002) examined four basic types of leadership: intellectual, instrumental, power-based, and directional. From there they were able to identify "leaders, laggards and pushers" (p. 62) which shaped the evolution of the climate regime. Important for this discussion, their analysis yielded insights on three axioms (the third italicized for emphasis) that seemed to apply throughout the development of the climate regime, up to around the time of the Kyoto Protocol:

Axiom 1: Intellectual leadership is prominent during agenda formation
Axiom 2: Instrumental leadership looms large during the negotiations stage
Axiom 3: Structural (power-based) leadership is important throughout
(op cit., 49)

Notwithstanding that this was an international, high level study of institutional leadership, as research continues to focus on developing processes that foster local, community-based adaptation, identification of leaders, laggards and pushers is a useful distinction at other scales as well.

Apolitical treatments of power in the context of community climate change adaptation can mask real opportunities for positive transformation. Power and power structures have been identified as one of the social limits to adaptation (Adger et al., 2009). In this vein, Blaikie (2006) cautions that from his perspective in community-based resource management, the idea of community is constructed, and can be viewed in a number of ways, including spatially or via social structure or in the sense of shared norms. A community has power spheres embedded in it. Few et al. (2007) advise against creating the illusion of inclusion and inadvertently embedding ideas around issue containment and perpetuating entrenched agency viewpoints that can limit the effectiveness of processes. An important aspect of participatory processes is that not all participants are created equal. Often, a number of actors are engaged in discussions and negotiation that represent both sides of Adger's (2003) distinction of state and society. In addition, their motivations are different, and personal perspectives may differ from the organizations they represent. Conversely, overanalyzing power relationships may result in important actors to the adaptation process being excluded. For example, are there individuals "who understand themselves" and embody social action on their own terms, a key component of the political ecology notion of environmental identity and social movement (Robbins, 2004, 190), but do not necessarily fall within conventionally included groups. How do their perspectives become integrated in participatory community climate change adaptation?

Creating spaces for meaningful dialogue on community climate change adaptation are challenging, particularly due to the nature of adaptation itself. When attempting to answer the question of how adaptation occurs, Smit et al. (2000: 241) observe:

"…adaptation tends to be incremental and ad hoc, to assume multiple forms, to be in response to multiple stimuli (usually involving a particular catalyst) and to be constrained by economic, technological and socio-economic conditions."

Attempts at assessments of power in climate change adaptation studies have been developed in the literature, (e.g. Few et al., 2007) but have, to date, met with limited uptake by adaptation practitioners. The one exception is in the area of analyses of vulnerability and power differentials (e.g. Turner, 2003, Lim & Spanger-Siegfried, 2005, Ribot, 2011). The evolution of impact assessments in the context of climate change highlights a potential gap in this area (e.g. Fussel & Klein, 2006).

Bonding and networking social capital, insofar as they impact climate change adaptive capacity, can be negatively impacted by a state that is either coercive and there is non-legitimacy of its aims, or conversely ineffective, where there is an absence of policies of legitimacy (Adger, 2003, 394). The appropriate exercise of state power, therefore, becomes a key determinant of adaptation success. Matthews & Sydneysmith (2010), in their analysis of Arctic gateway cities, stress the role actors with power and legitimacy have on both routine and non-routine decisions and overall institutional adaptive capacity. This role shifts substantially if these same actors are placed in the novelty of participatory processes. A shift from hard to soft and smart modes of power becomes extremely important. Making sense of how power, as it has been conceived in this research report, actually influences the ultimate success of these types of participatory processes, can result in the design of more effective, and robust, climate change adaptation.

As agents and potential leaders move from within their organizations to become part of participatory processes, the nature of contextual intelligence changes and requires a different perspective. Nye (2010) extends the idea of contextual intelligence to a more outward looking approach through networks and the honing of political skills (318-327), as purposes may not be clearly defined, and both scale and complexity increases.

By revisiting Figure 1 and taking this view of power, contextual intelligence and leadership outside of a specific monolithic organizational setting, and placing it within participatory processes, Figure 2 presents a modification of the Einersen et al. (2007) model to describe a conceptual organizational space for participatory contextual intelligence. Actors, agents and potential leaders within a given participatory process can be mapped and the diversity of power positions identified. The four types of power styles remain the same, as does the x-axis, but the y-axis is replaced by issues of whether a participant is supportive (pro-) or unsupportive of (anti-) the participatory process. Note that this can be for any number of reasons, including past experience, personal views on the magnitude of the adaptation challenge, or perspectives on whether or not the process can result in sustainable transformation.

Figure 2 creates an agent-leader model that can graphically represent the participants as a group, by identifying the following basic perspectives:

1. Supportive-Disloyal (supportive of the participatory process but not necessarily of the organization they are representing or lacking explicit support of that organization) - e.g. an actor who sees value in the evolving process, but their organization is adopting a "wait-and-see" attitude
2. Derailed (unsupportive of the process and lacking explicit support of the organization they are representing) - e.g. an actor who is skeptical of the need for dialogue and whose organization is not convinced of the need for adaptation action – a "fly-on-the wall"
3. Tyrannical (supportive of their organization and its goals but skeptical of the process they are engaged in) - e.g. an actor whose organization has a clear mandate for adaptation but sees limited value in investing time and effort in a participatory process – "get-on-with-it"
4. Constructive (supportive of both the process and the goals of the organization which they are representing) e.g. an actor who is committed to representing their organization, seeing the participatory process as an opportunity for positive change – "champion"

In conclusion, there have been many challenges identified in creating and sustaining community-based participatory processes, from maintaining working relationships over multi-year funding cycles, providing key individual and organizational memory to bridge projects, deciding when and how to engage new collaborators in the process, and crafting a process that is seen as apolitical, but having some measure of political support (Cohen et al., 2006, 354). Add to this the logistics of data gathering and management, its integration and policy relevance, maintaining a complex interdisciplinary project, and the inherent uncertainty/risk and fluctuating levels of collaboration/commitment (Bizikova, 2009, 22) and the need for consideration of contextual intelligence and leadership becomes important.

5.0.Additional Research Approaches

So far, power, agency, and the relationship between power and leadership of relevance to community climate change adaptation have been explored. Using a realist definition of power has allowed for a focus on ways in which it is reflected in structured social relations. Then, the various spaces of power in a shared-power world were presented. After that, the need for leaders to be able to navigate these power spaces through the development of contextual intelligence was elaborated. This led to modifying an existing model of leadership that suggested a way of mapping contextual intelligence of a variety of actors in a participatory process.

Brogden and Greenburg (2003) make several important observations around the need for what they term hybrid politics and the accommodation of pluralism in collaborative approaches. *"Pluralism backstops collaboration. It keeps collaboration honest because if key interests are not adequately addressed, proposals will become the subject of oppositional activism" (p. 296)*. They also discuss the importance of time in letting collaboration evolve and trust to develop so that participants are comfortable speaking truth to power (p. 296). Also, a recent study points to leadership as important to

sustaining change in collective processes. "Presence of at least one singular individual with entrepreneurial skills, highly motivated, respected as a local leader and making a personal commitment to the co-management implementation process, was essential" (Gutierrez et al., 2011).

There are two ways in which concepts of power and leadership developed here can contribute to the broader literature on climate change adaptation. One is in addressing barriers to adaptation and a second is through mapping the trajectories of power and leadership over time.

5.1.Addressing Barriers to Adaptation and Spaces of Power

Limits and barriers to adaption processes can take a number of forms, including physical and ecological, technological, financial, informational and cognitive, as well as social and cultural (Adger et al., 2007: 733-737). In a synthesis article on highlighting these barriers as they relate to planned adaptation, Moser and Ekstrom (2010) enumerate in detail the challenges within three broad areas of understanding, planning and managing for climate change. For example, one of the barriers for understanding is *signal detection*, important for attribution of the causes of observed changes to climate change and linking those to specific impacts. Another example under planning is the assessment of options where *agreement on approach* is highlighted.

By returning to our discussion on participatory approaches and Denger (2007), and the ideas around spaces of power, the idea that they can be used to inform how barriers to adaptation might be addressed can help to create clarity. For example, science and local knowledge power spaces may be more relevant for addressing barriers related to *signal detection*, while policy and local knowledge spaces may be more appropriate for *agreement on approach* to evaluate options in the development of adaptation portfolios.

Integrating the barriers approach with the power approach into a single conceptual framework helps to address the question, originally raised by Smit et al. (2000), of how adaptation works, and also now, as a result of this discussion, how agency and leadership contribute to it.

5.2.Contextual Intelligence and Mapping Participatory Processes Over Time

There is also recognition that community climate change adaptation processes can assume multiple starting points depending on the project, involve multiple interests and change both their internal mechanics and external manifestation over time. This sense making approach is potentially useful when integrated with the type of analysis highlighted in Figure 2. Kløcker Larsen et al. (2012) present an initial attempt at developing a cross-case analytical framework to examine this. By looking at the various stages of the research design process through their ideas of realism and constructionism versus contextualism and universalism, case studies can be compared. Three such projects from Canada, Sweden and Indonesia are presented.

Ideas surrounding how power spaces shift throughout the research process is also possible. For example, in the Canadian case study, initial phases were very much driven by the science knowledge power space, with the policy and local knowledge spaces contributing later. As the study evolved, the science space became be less influential and moved to a more supportive role (May, 2013). This changed the makeup of participants and their relative positions across the contextual intelligence diagram in Figure 2.

Again, the added perspective of power, contextual intelligence and leadership within this existing framework can increase understanding of processes of community climate change adaptation and help to explain why certain power spaces are important at the various stages of these projects.

Appendix One presents a hypothetical application of this approach.

6.0.Conclusion

Power, agency, authority, and influence combine in a complex series of interactions within participatory processes for community climate change adaptation. Actors come together with a variety of individual perspectives, organizational mandates and directions, and are often expected to interact in a social structure which is emergent over time and whose end-point is unclear. "In interdependent decision-making the distribution of power resources among rational actors is likely to be crucial for their choice of strategies" (Kropi, 1985: 40).

Communities are searching for real solutions and real directions to the seemingly intractable challenge of climate change. This places them squarely in a context that often requires them to envision their future. It is important for actor-agent-leaders and researchers to consider carefully their own particular spaces of power and be attentive to the constructed nature of the terms used to frame the discourse, how challenges are characterized in the context of development and transformation, and how participants exert power via individual leadership in the search for place-based, meaningful solutions. A more careful enumeration of how various spaces of power can influence barriers to adaptation and how power is exercised within participatory processes can lead to more meaningful dialogue in support of adaptation and sustainability. With this, there is the trend to "… conduct studies *with* and *for* rather than only *about* social movements and people-in-place…" (Rocheleau, 2007, 724).

This working paper began by posing several key questions addressing issues around ideas of power, agency, leadership and participatory processes. The first was whether or not power and leadership can be more comprehensively examined as a part of participatory climate change adaptation research. The answer, it is suggested, is yes, and that contextual intelligence and spaces of power are two possible avenues. A second was how power can be more comprehensively examined in these contexts so as to explain how actors and institutions behave in participatory processes. A modified model of destructive leadership was developed to map to evolution of actor leadership within participatory processes. Finally, questions were posed on how this knowledge could

potentially be used to help remove existing barriers to adaptation and how an analysis of power and leadership result in a better understanding of how adaptation occurs. In this case, the idea of science, policy and local power spheres for action can be useful in comparing both how they relate to specific barriers to adaptation identified in the literature and how they change over time as participatory projects evolve.

Hopefully with the types of research contributions presented above, progress can made to address observation on power that:

> *"We find little evidence of the realist view in scholarship related to natural resources management practice and argue that this view may be a useful tool for understanding how practitioners act within the social structures and relations to which they belong'* (Raik et al., 2008, 736).

A better understanding of power and leadership, as it relates to community climate change adaptation can make progress toward meeting some challenges in the existing literature related to the key questions of climate change adaptation mechanisms and how that relates to adaptation practice. This is especially important as Yohe et al. (2007) point out, "… comprehensive understanding of the implications of extreme climate change requires an in-depth exploration of the perceptions and reactions of the affected stakeholder groups and the lay public" (p. 834). "The policy process thus involves managing the interplay of distinct and potentially conflicting accounts, the fuzzy and contested outcomes, and the activity that generated these uncertain and undemarcated outcomes" (Colebatch et al., 2010: 30). This is not a new idea and bears re-emphasizing. Earlier work in the field called for this approach. It is worth quoting Torry in detail when he says:

> *Environment and society interface through feedback networks so vast in the complexity and variability that no one can realistically expect achieving a capability anytime soon of predicting with fine precision the institutional effects upon or reactions to climate changes taking place at community and regional levels. Those in positions of having to worry about the human dimensions of climate change prospects focus the burden of their concern on a recognition that some affected populations will be worse off, economically and politically, than before. Further, they recognize the need for taking decisive precautionary steps toward forestalling risks and destruction by introducing changes in social conventions existing in these vulnerable societies.* ***In the final analysis, planning for climate change means planning for social change*** [bolding for emphasis] …
>
> *Social change rarely ever accompanies atmospheric stresses alone, since all environmental influences filter through layers of societal institutions. Therefore, we do not confine our analysis of social change to any one source of stress.* (Torry, 1983: 224-25)

To effectively address the challenge there must be a committed focus on "… those, who, at a community level, have the authority of legitimacy and the power to act, either within established normative procedures or with flexibility to respond in new ways to unique situations" (Matthews and Sydneysmith, 2010: 237).

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Appendix One

A Hypothetical Application of Contextual Intelligence in Participatory Processes

Scenario

Assume a simple participatory process for community climate change adaptation with four actors:

1. Academic researcher in charge of facilitating the participatory process (AR)
2. Representative of local government planning department responsible for developing an climate action plan (LG)
3. Representative of an environmental non-government organization focused on sustainability (NGO)
4. Representative of a large manufacturing company with an active corporate social responsibility program and committed to being a positive member of the community (M)

In preliminary research as part of developing the participatory process, researchers were able, through semi-structured interviews, to glean the following:

1. AR – facilitator has a high degree of vested interest in the process and will be providing support from the science knowledge power space. Their power resources include funding for the study and an ability to, through facilitation, work at developing group norms. (High Constructive)
2. LG – planner has a high degree of interest through involvement in the policy knowledge power space, but has a neutral degree of confidence in the process. Their power resources are coercive, primarily through legislative authority (Low Constructive)
3. NGO – representative is highly committed to the goals of their organization from the local knowledge space but through previous "stakeholder" processes, has a moderate aversion to the process. Their power resources are related to human capital and the ability to mobilize a substantial constituent base (Medium Tyrannical)
4. M – representative believes that firm should be focused on profits and not sustainability and that community engagement is a waste of time, and is influential in both the local (as major employer) and policy (as lobbyist) knowledge spaces. Their power resources are in physical capital and ability to influence human capital (their employees) (Medium Derailed)

Figure 3 portrays how their relative positions might look. During facilitation and based on ongoing assessment of actors' engagement and utilization of power resources, changes can be mapped over time (see Figure 4):

AR – maintains research commitment to process – no change

LG – begins to see value in the process at the same time as recognizing the limitations of existing regulatory tools in achieving adaptation objectives

NGO - aversion to “stakeholder” process is confirmed and decision made to leave the facilitated process

M - begins to see more value in process over time as a means of promoting company business objectives

Figure 1 – Aspects of Destructive Leadership

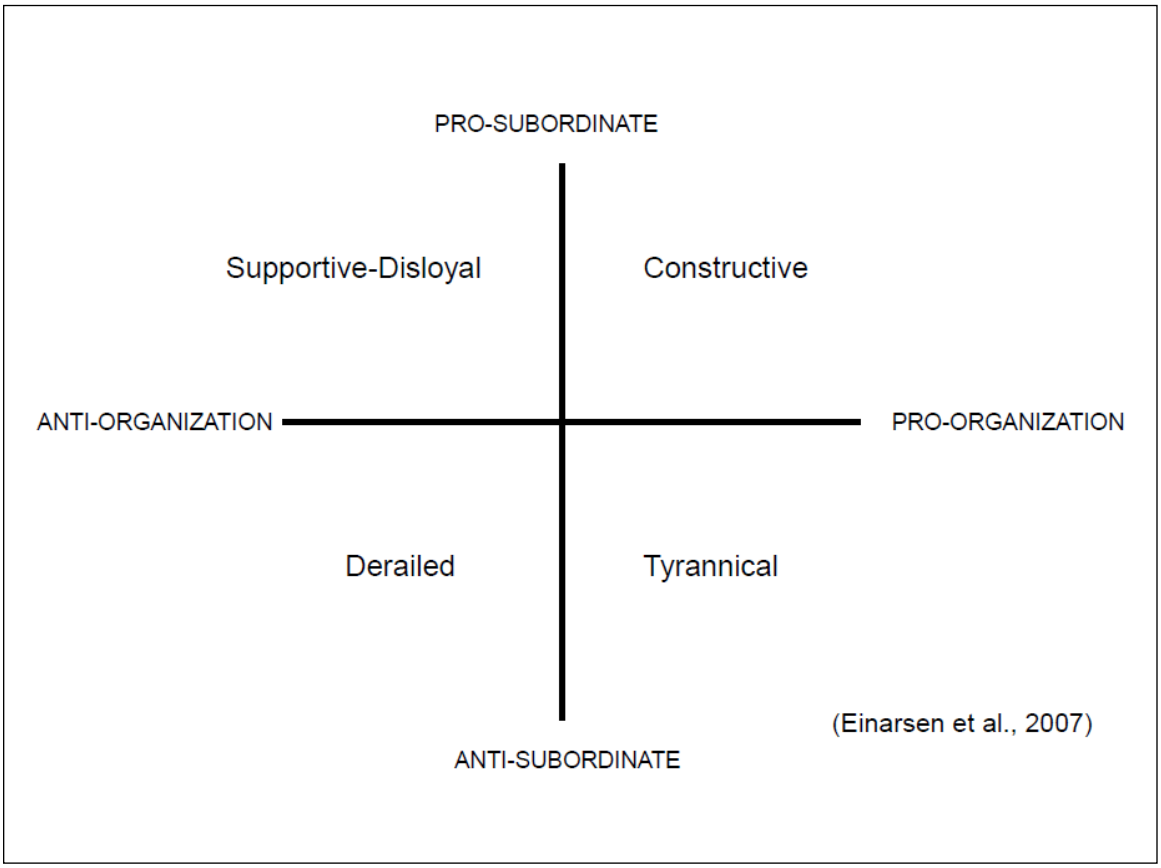

Figure 2 – Contextual Intelligence in Participatory Processes

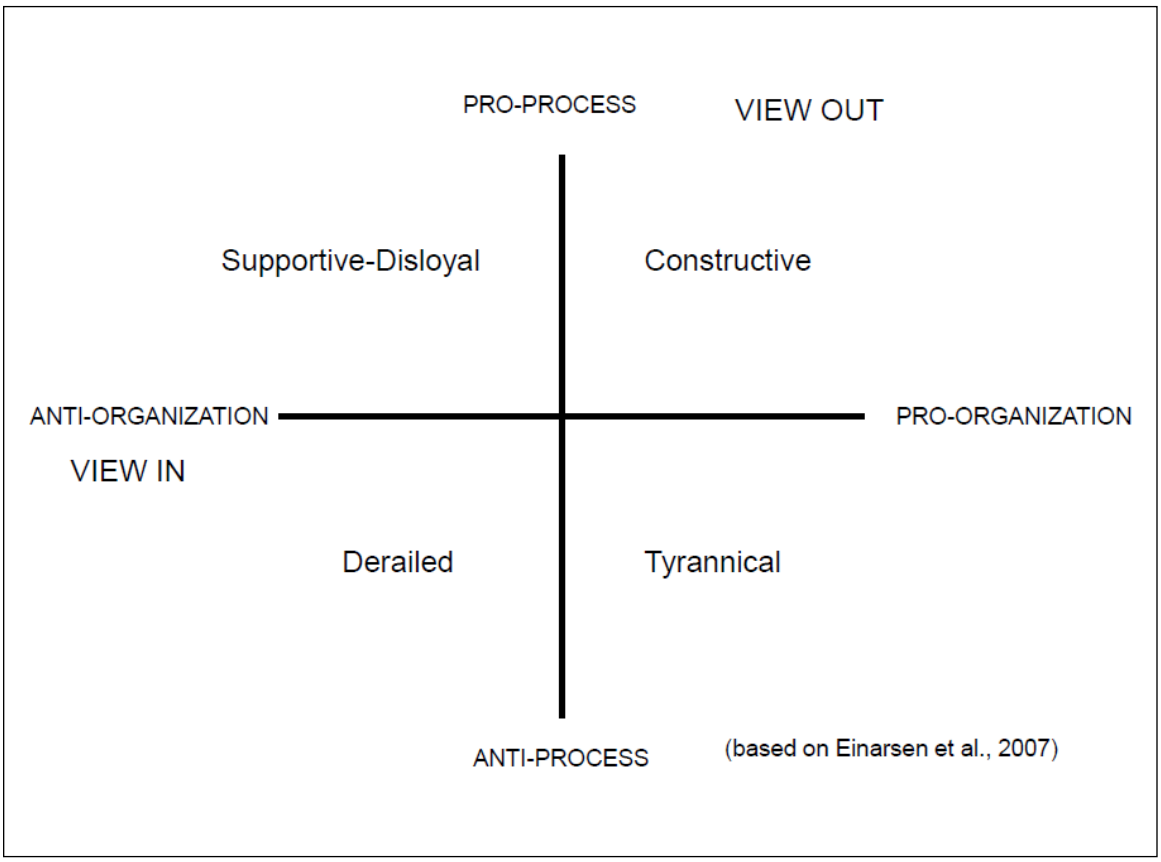

Figure 3 – Application of Contextual Intelligence in a Participatory Process

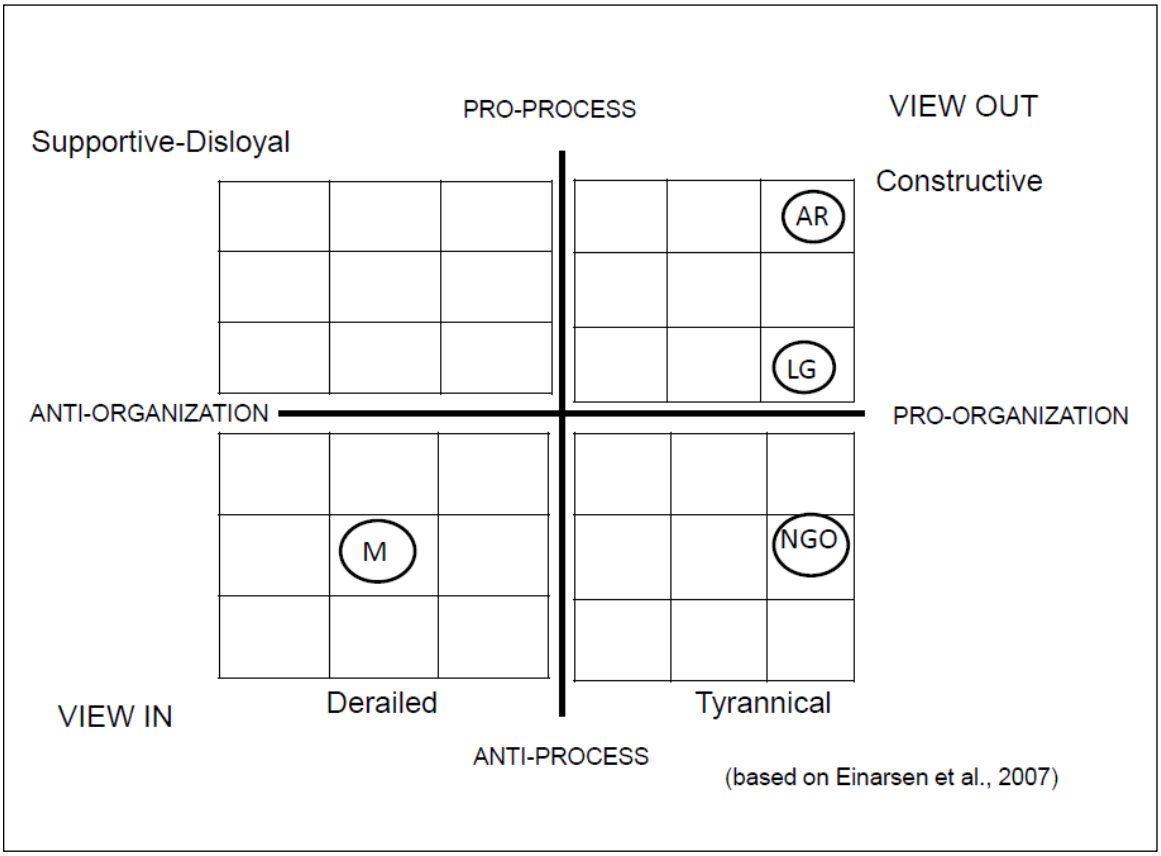

Figure 4 – Mapping of Changes Over Time