Ethics of Climate Change: Adopting an Empirical Approach to Moral Concern[1]

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Abstract

This paper is about a certain kind of insensitivity (to people and, by extension to ecosystems) that ethical deliberation and theorizing produce when faced with the complexity that climate change scenarios present. In the first part of the paper, I examine the insensitivity to this complexity of traditional moral frameworks when prescribing courses of action. In the second, I attempt to sketch an approach to ethical deliberation that better handles and sensitizes us to the complex concerns that arise in such situations, referring to an inter-disciplinary research project, Institutional Adaptations to Climate Change, as a way to illustrate how this ethic would work. Given the nature of the paper, the position I take is more programmatic than substantive.

Key Words: climate change, ethics, empirical approach, complexity

Introduction

This paper is about a certain kind of insensitivity (to people and, by extension to ecosystems) that ethical deliberation and theorizing produce when faced with the complexity that climate change scenarios present. In the first part of the paper, I examine the insensitivity to this complexity of traditional moral frameworks when prescribing courses of action. In the second, I attempt to sketch an approach to ethical deliberation that better handles and sensitizes us to the complex concerns that arise in such situations, referring to an inter-disciplinary research project, Institutional Adaptations to Climate Change, as a way to illustrate how this ethic would work. Given the nature of the paper, the position I take is more programmatic than substantive.

On the Problem of Complexity Generated by Climate Change

Climate change affects everyone, every culture and every sector of society in interconnected ways. Global warming has widely ranging effects (e.g., flooding, drought, broadening disease vectors, increased fire frequency, melting of glaciers, oceanic warming), which in turn affect economics, security, aesthetics and health, among other aspects of life. The relationship between these effects is also complex. As we have endlessly heard, thermal expansion, melting glaciers and polar caps are causing sea levels to rise, which will require new infrastructure development, or re-location of large numbers of people. These consequences alone will have a global economic impact, which will be exacerbated by impacts on social relations (e.g., out-migration, increased crime) and political relationships (the demand for more global cooperation). Recently, Gwynne Dyer (2009) has reported on the activity of military intelligence in determining strategies for dealing with various geopolitical consequences (international conflict) of climate change. As physical impacts affect people at individual, communal and political levels of organization, people, in turn, will have an effect on physical systems, as they attempt to mitigate, but more importantly, to adapt to the impacts of climate change. Some, if not most, people's lives and ways of life will apparently be threatened, although others' will be enhanced. Precisely how these effects will, in turn, affect one another, remains uncertain.

Some farmers stand to benefit from longer growing seasons. Some political regimes will benefit from being able to access formerly frozen areas of their claimed territory, thereby enabling them to develop permanent infrastructure in support of their claims. Some mining companies will benefit from easier access to rich mineral deposits in the Arctic. Increased wealth in the north could contribute to the relief of certain social stressors (poverty). Thus, it is not necessarily the case that all effects of climate change will be negative, or that the perceived consequences (either positive or negative) will not be inverted, once the effects of climate change have become more certain. People, in turn, will value the effects of climate change differently. To a certain degree, then, the normative consequences of climate change are ambiguous.

I want to use these observations to introduce the problem of complexity and how it compels us to adopt a different ap-

proach to ethical deliberation than what can be called "traditional." The dominant normative response in the literature, for instance, focuses on issues of justice or distributive justice. See, for example, the influential work by Donald Brown (2003) and the Rock Ethics Institute at Penn State University. Others such as Bohle et al. (Bohle, Downing, & Watts, 1994) and Ikeme (2003) assume a distributive justice framework, as do others, giving the appearance of a well-delimited debate. Much of the ethically oriented debate on the problem of climate change directs blame toward the behavior of the rich and middle class, whose energy use and consumptive behavior contribute disproportionately to the increase in greenhouse gases. Despite the lack of a mandate to attend to policy or normative issues, even the Intergovernmental Panel on Climate Change finds itself leaning toward a justice orientation when conducting its stakeholder vulnerability assessments, particularly in areas and countries where poverty is at issue.[3] This focus can seem an obvious one to adopt to many ethicists, because the harms and benefits of climate change seem to be obviously unequally distributed.

However, a plethora of other, sometimes related, issues have also arisen, which suggest that a justice focus may not be entirely adequate to capture the range of morally relevant concerns. When we consider certain climate change forces, e.g., widespread increases in violent storms, hurricanes, desertification, floods, etc., one of the more feared adaptive responses in which people will engage is re-location. Dyer (2009, pp. 14, 15) shows how the U.S. military is thinking about how it will plan for this eventuality and its related threat to international security. Now, we tend to think of re-location, or out-migration of populations, as a bad and unjust consequence, not only because of the financial costs that will be incurred, but because people's loss of a sense of belonging to a particular place can create personal identity and security crises (moral, social and political costs). An increasing demand for re-location and vocational training, as an adaptive response to climate change (once sea-level rising becomes a significant factor), could undermine people's sense of local or even national identity. Eroding identities can have an impact on people's allegiances, can exacerbate social dysfunction and aggravate stress disorders. At the same time, however, there are possible benefits to consider. It is possible that some people (possibly those whom we identify as falling victim to unjust consequences), whose social and cultural worlds are undermined by the effects of climate change, may turn out unexpectedly to value the results. Those whose worlds were once strongly communal and reliant on a moral economy[4] of oppressive religious regimes may find a shift to new locales and a subsequent undermining of a traditional social order freeing. Or, on the other hand, those whose individualist and capitalist worlds are undermined may find that

having to cooperate and share with their neighbors brings a welcome sense of communal identity and the benefits of a robust moral economy. The normative consequences of climate change, then, might turn out to be positive to some and possibly many stakeholders.

My point is not to give equal weight to the benefits and harms of climate change. It is to indicate that, since the net effects on social and personal life of climate change are not monolithic, some people may turn out to be beneficiaries and some perceived just actions now may result in unjust or bad consequences later and vice versa, the normative consequences of climate change are not free of ambiguity. Not only are harms-benefits and justice-injustice projections unclear, ambiguities in the concept of justice are becoming apparent in the way we describe various stakeholder situations and prescribe responses. Ikeme (2003) argues that notions of justice used to formulate Western foreign policies fit a conceptual pattern, which helps open the way for an imposition of Western or Northern systems onto Southern and developing nations. This critique follows a similar fairly longstanding critique by the likes of Vandana Shiva (1989), Wolfgang Sachs (1993) and Leah Gibbs (2006). By exploiting the language of development and the idea of being responsible for bringing the developing world a more just distribution of wealth and opportunity, developed countries have, in effect, undermined local economies, agrarian ecosystems and social systems. The principle of distributive justice, to these critics, is used to re-shape social systems and economies to accord with imperialist interests of northern corporations and institutions, producing the opposite of what was claimed would be the result of aid. Whatever concept of justice is being used by developed nations in debate with their critics, it is unclear whether they are using the same concept; or, if they are using the same concept, the value assigned to it can differ quite significantly. Climate change threatens to complicate debates over justice, by compelling the whole world to respond, thereby bringing its entire range of perspectives and voices together with their value systems and world views to the foreground for attention.

This brief examination of the justice issue indicates that further problems need to be addressed: 1) determining what vulnerabilities to climate change are to be considered; 2) identifying whose vulnerabilities are to be considered; 3) understanding how those vulnerabilities are to be framed in light of the varying cultural norms and world views. The question then arises, "from what perspective(s) are we, as ethicists, to formulate a response to climate change?" Even if all effects of climate change are universally seen as bad, conflicting stakeholder perspectives still leave questions unanswered about how those perspectives are to be recognized, weighted and admitted into decision-making procedures.

This type of problem has moved some ethically minded people to argue that a shift in normative focus is needed; one that abandons attempts at achieving specific just ends (goods) in order to adopt a procedural approach (e.g. Jouni Paavola (Paavola, 2005). This shift is reminiscent of the more theoretical problem articulated by Hume, Nietzsche and, later, Jürgen Habermas (1990, 1992, 1995) and Charles Taylor (1989, Part One). A procedural approach is supposed to be value and culture-neutral, i.e., universally acceptable. But, as Taylor (1989, pp. 88-89) argues in response to Habermas, whatever procedural approach we might adopt, that approach presupposes some notion of the good. To insist on a procedural ethic on the grounds that it does not promulgate some good, then, is to hide the fact that some culturally bound good is actually being promulgated. I mention this conflict between substantive and procedural ethics to indicate how difficult it is to avoid the problem of cultural difference and how it adds to the problem of complexity.

While none of these normative concerns are unique to climate change issues, climate change does bring them to the foreground in a way that forces us to deal with the complexity of environment-human society relations, against which other arenas in ethics can be better insulated. In almost every other arena in applied ethics, we have been able effectively (to a large degree of agreement) to delimit deliberation to specific, well-defined issues. For example, in medical ethics, abortion and euthanasia can be discussed independently. Terms of reference (e.g., respect for patient autonomy vs. care giver beneficence) can be relatively well formulated. In business, professional and animal ethics, we can also delimit in a similar manner, by sorting out what rights are affected, who should be protected by those rights and how they should be protected. Moreover, we can modify moral principles, to some extent, to allow for cultural differences in a fairly clear, principled manner. The result is that we can fairly clearly and confidently prescribe or proscribe courses of action (e.g., by differentially balancing the priority of informed consent and beneficence in different cultural contexts).

Even in environmental ethics generally, it is possible to delimit an arena of concern to watersheds, pollution of water or air, for instance. But, as previously indicated, climate change is such an all-encompassing, complex problem that it does not permit as clear a potential for delimitation. Those farmers (mentioned earlier), who may welcome climate change, because global warming trends will produce longer growing seasons, will not be able to ignore the fact that geopolitical outcomes could destroy their markets and that increased competition for arable land could threaten their title to land. Likewise, environmental and wildlife protection groups may want to focus on mitigation in order to protect wildlife habitat, but will be forced to recognize the social, political and economic realities of the emerging economies of India and China, who can arguably justify their increased generation of greenhouse gases as necessary means to achieving an equitable standard of living and security with developed countries. However much concerns for justice may point to the need to commit to strong mitigation measures, other concerns for justice are pointing to the need to accept adaptation as perhaps the more pressing moral response.

This raises a further problem. As in environmental ethics in general, climate change issues demand more holistic approaches, because it is not always clear how, for instance, to delimit the moral community, what sorts of moral values are at stake (e.g., individual, species, systemic) and how they are related. Again, in most other areas of applied ethics, there is fairly wide agreement that a focus on individuals, both in terms of their rights (e.g., as patients) and in terms of their responsibilities (e.g., as care givers) makes sense and can be legitimized. But in both climate change and environmental ethics generally, we are beginning to see how attempts at delimiting decision making approaches to a focus on individuals may be impossible and counter-productive. Ways of thinking about conservation of natural resources by focusing on individuals come into conflict with arguments to the effect that ecosystem health and integrity must first and foremost be protected (see Costanza, Norton, & Haskell, 1992; Westra, 1994). To complicate matters further, Holmes Rolston III (1992) discusses the need to take disvalues (not just positive values) into account when making resource management decisions. He also argues that we need to acknowledge the moral tensions that arise when ecological relationships are taken into account (1988). Valuing and protecting individuals over habitat can undermine ecosystems, as in cases where ungulates become so populous that they over-graze. Of course, going the other way and arguing for the protection of ecosystems by culling herds, provokes counter-responses by proponents of animal rights. However compelling arguments for one side of the system vs. individual debate can be, its opposite can be equally compelling. Likewise, climate change forces us to analyze problems at different levels (e.g., of the individual, of populations, of systems), which produces further and different types of conflict (ones that are more conceptual in nature). But unlike the problem of over-grazing, which can be localized, the impacts of climate change cannot be so readily localized. We can no longer even hope to insulate our moral deliberations against these global environmental effects by adopting smaller units of analysis or management.

The danger of delimiting levels and factors to be considered is not principally a theoretical issue, however, but a very practical one. To illustrate, I will use an example from the experience of the Institutional Adaptation to Climate Change

(IACC) research team[5] that has been studying the adaptive capacity of governance institutions in relationship to stakeholder vulnerabilities to climate change. We initially attempted to delimit our research activity to the impacts of drought in the South Saskatchewan River Basin, as we attempted to maintain clarity of focus for our vulnerability analysis. The climate change models also indicated that drought was a predominant outcome for the region. What we found, however, was that violent storms and flooding were the primary concern in at least one of our study communities (the Blood Tribe in Alberta). This community lives between three rivers that are fed by glaciers whose accelerating melt-rate is contributing to the flood problem. Our attempt at delimitation was frustrated, as a consequence, forcing us to expand our frame of reference, in order to make our climate change research relevant to all of the region's stakeholders. But, when we so expanded our purview, it became evident that we would have to accept new parameters and variables into our assessment framework. When our researcher (Lorenzo Magzul) expanded the study to include flooding, more people began to respond to his enquiries. But they also began to address issues of governance. They described how the failure of government institutions to protect treaty rights had undermined their own systems of governance, thereby increasing their vulnerability to stressors (including floods). We also found that our attempts at delimiting our study to formal governance institutions were frustrated by stakeholders wanting to address cultural, religious and familial institutions as key to their adaptive capacity or lack thereof. Obviously, then, understanding the nature of this stakeholder community's vulnerability to climate change and what measures needed to be taken to improve their adaptive capacity required that we recognize a much wider array of factors than we initially set out to study. Had we not allowed for this expansion, we would have remained insensitive to many factors that make this community vulnerable to climate change.

What this case illustrates is that understanding the impacts of and normative demands engendered by climate change requires understanding the social systems in which stakeholders operate. P.M. Kelly and W. Neil Adger (1998, 1999; Adger & Kelly, 1999; Kelly & Adger, 2000) are among those who have striven to bring these factors to the attention of policy makers for over a decade. They have identified such factors as landlord/peasant fiduciary relations, locally organized collective action networks and worldviews as key to understanding stakeholder vulnerability and adaptive capacity. Expecting all people to adapt to climate change in similar ways and in accordance with the same application of justice could result in destroying their ability both to mitigate and to adapt to climate change. If, for instance, the West requires more democratic, equitable power distribution to be a condition of aid, as idealized in the West, those societies that operate under a hierarchical landowner/peasant economy could be made socially dysfunctional and unable to coordinate mitigation or adaption responses. Unless social consequences of prescribed changes are carefully considered and managed, the opposite of intended outcomes of aid could result. Similar descriptions can be given for the situation of Canadian prairie farmers. On what may appear to be a less dramatic note, proposed re-training of dry-land grain farmers to adopt irrigation technologies (to produce tomatoes, pumpkins beans, etc.) can amount to a threat to their identity. Resistance, rather than acceptance, can be expected, unless identity issues are adequately addressed. Considering a somewhat more dramatic situation, we may need to understand the complexity of relations between stakeholders. For instance, were India to dam its Himalaya-fed rivers to protect its water resource and ethicists support the adaptive response, Pakistan, which depends on these rivers for its water supply, would not view the adaptive response favorably. Moreover, given the complex historical, religious and socio-economic relationship between Pakistan and India, such an adaptive response could trigger activities (e.g., war) that would exacerbate the problem of climate change.

An implication of what I have been arguing is that ethicists can no longer be confident about what we are, in the final analysis, doing or achieving when we make prescriptions for what to do about climate change. As previously intimated, this situation reflects the growing uncertainty in ethics about the lack of a basis on which to determine what the ethically "right" course of action might be. A growing number of critics of "traditional ethics" (Baier, 1986; Davis, 1990; Nagel, 1977; Rachels, 1990; Sylvan, 1973; B. Williams, 1973; B. A. O. Williams, 2002; and others) have begun to undermine the confidence in the belief that a rational, universal grounding for ethical deliberation and theorizing is at all possible, because such grounding tends to ignore real world complexities of moral life (Morito, 2002). In response to this dilemma, thinkers like Jürgen Habermas (1990, 1995) have begun to argue that we must adopt a sociological approach as a basis for a procedural ethic, if we are to formulate a viable and universal moral theory. As previously indicated, this move has itself come under criticism. Not only Taylor, but feminist thinkers (e.g., Seyla Benhabib, 1992) have argued that the approach is ethnocentric and androcentric, in part because the concept of rationality and universality employed are male oriented concepts. And so the debate goes. For every theory that promises to enable us to delimit our moral concern and establish a universal set of moral principles, there is a plethora of critics ready to demonstrate how it fails. This more theoretical problem exacerbates the problem of the moral complexity of climate change, by illustrat-

ing how complex the world of moral life is. But more importantly, it illustrates how ill-equipped as ethicists we are to handle complexity, because of our tendency to simplify and narrow our frame of reference.

While the above critique may appear to threaten the very relevance of ethics, it is not aimed at this conclusion. Indeed, the critique focuses on demands for a more adequately responsive ethic, not an abandonment of ethics.

Sketching a Direction for an Ethic of Climate Change

If we accept the view that deepening complexity and unpredictability undermine the already dubious goal of achieving elegant ethical deliberation, it seems to me that the only hope of making ethical deliberation adequate to the task of addressing climate change is to adopt an empirical approach that reflects what people actually value and accept when faced with the task of making decisions. This, of course, is an extremely tricky move and borders on making ethics open to questions of relevance. Thorough theoretical demonstration of why confidence can be placed in an empirical approach would take too much space, here. Although I will try to provide more reasons for placing confidence in the approach as description of it proceeds, for the moment it must suffice to say that I work roughly within a Habermasian sociological framework. The approach recognizes the complexity of moral life and relies on prescriptive principles to emerge, as understanding between interlocutors develops during the process of deliberation and negotiation aimed at decision-making. The basic idea is first to seek mutual understanding among stakeholders concerning their values and then allow this understanding to generate prescriptive principles.

When we approach decisions and policy this way, we have at least *prima facie* reason to believe that stakeholders of varying cultures and different genders will form agreements over normative values and principles. Why? When people approach others on the assumption that they must first establish an understanding of one another, they are not trying first to impose their culturally based norms onto one another but are trying to figure out how to achieve successful communication. Second, we can assume that any person who enters dialogue to reach an agreement over what to do about impacts of processes like climate change has an interest in the harms and benefits that such change will bring. The first stage of determining what to do about climate change, then, will be to understand what various stakeholders stand to lose or gain. As dialogue/negotiation proceeds, the cultural dimensions that determine perceptions of harms and benefits will emerge, but they will be framed in a context of understanding others' culturally determined perceptions of harm.

As theorists, this approach places us in a kind of Quinean situation (Quine, 1953), according to which understanding the nature of moral life, and even the principles that are suited to the ordering of such a life, depends on experience and engagement in the complexities of moral life. Engagement, in the case of negotiation contexts relative to climate change, has to do with establishing a cross-culturally framed dialogical context, in which the moral principles to be used are allowed to emerge in response to the needs and values stakeholders articulate. To engage in such a dialogical context is, by definition, to follow a path guided by some version of the harm principle-it is wrong to inflict harm on innocent subjects. So, the proposed empirical approach does not begin entirely directionless.

The term 'empirical' can be somewhat misleading, however, because it is typically associated with hypotheses that can be verified or falsified according to publically observable behavior. For this paper, I expand the concept 'empirical' to include knowledge gained and facts established through personal experience and inter-subjective relations (e.g., through forming agreements), as they are made evident through acts of communication and the ways that people interact with one another. Adopting an empirical approach implies that no participant in dialogue can lay claim to *a priori* prescriptive truth or legitimacy. It is the process of coming to understanding decision that must produce agreement over normative truth claims and legitimacy.

To assert that such an approach can yield no universality, sense of legitimacy or rational grounding, because of this problem, is to rush to conclusion. Taking a page from Habermas (1984, 1990) and others, I wish to suggest that dialogue and negotiation can more successfully constrain agreement over normative values, concepts and principles, than more traditional prescriptive approaches, if stakeholder values are recognized and discussed in an appropriate manner. I will attempt to show how the IACC vulnerability analysis supports the view that such agreement can be expected.

Again, owing to space constraints, I will take the legitimacy of the principle of non-arbitrary discrimination to be self-evident. Arbitrarily excluding stakeholders or assigning of privilege are the sorts of actions that all rational people who wish to form a moral community would and are constrained to reject. The empirical approach I am advancing depends on accepting the idea that rational people assume this principle as a legitimate governing principle over their speech behavior and actions. With this in mind, the empirical approach begins, not with an articulation of moral principles, but with an articulation of people's values (what matters to people). As people communicate their values to one another with the end of making decisions about what to do about a given concern, they come to articulate what matters to them

(identification); they begin to compare and contrast their values in a process of conceptualizing them (categorization); and then, of necessity, they begin to weight their own and others' values in a process of establishing an orderly negotiation/decision-making procedure. When this process is structured appropriately, people begin to see how their own values should be ordered, as they come more clearly to understand what matters most to them; that is, what their most central values are. Then, through dialogue aimed at negotiating agreements, they can also come to see what matters most to others and why others order their values in the way they do. When observations of such processes are made or processes are put in place (e.g., community forums), which allow people to dialogue about what matters to them, certain patterns arise. Not surprisingly, once these patterns are identified, people across cultures begin to identify the same types of values as core and non-negotiable. This consequence, in turn, results in agreements over what types of value should have priority over others and typically results in articulations of principles that formulate how these priorities are to be ordered and carried out.

Leibniz (1965, p. xxiii), surprisingly, helps shape the approach I am attempting to establish. On the basis of his observations, while conducting research into the possibility of a universal law, he suggests that every legal system, however culturally different from European ones, shares three basic principles. They are: 1) avoiding harm; 2) giving what is owed; 3) trustworthiness or integrity. If this is indeed the case, then a careful examination of different people's values (from whatever culture they come) would yield a common value profile at some level of generality. What I call 'values analysis' enables these values and related normative principles to be identified during the course of open dialogue, once adequate communicative devices develop or are applied. Both a generalizable, if not universalizable, ethic can be expected to emerge through this process. I now turn to describing the contributions to my ethnographic work of the IACC project to help substantiate these claims.

Identification

The IACC project's mandate is to determine whether and how governance institutions are equipped to enable stakeholders to adapt to climate change. An initial aspect of the research has been to identify and explain stakeholder vulnerabilities and then to assess the relevant institutional adaptive capacity to respond to these vulnerabilities. We attempt to identify stakeholder vulnerabilities to climate change in as comprehensive and thorough manner as possible, within certain time and resource constraints. My role has been to conduct a complementary analysis, first by contributing to the development of the ethnographic methodology, indicating how field researchers can identify value indicators and how they can pursue gathering information about stakeholder values during interviews. Second, my research assistants and I analyze the results of interviews, focus groups and questionnaires. The first step in the analytical process is to determine what actually matters to people. Stakeholder values are first identified in ways that stakeholders themselves express them or in ways that are implied by their expressions (e.g., community values are implied in expressions of concern to protect schools against administrative decisions to close them). A key to this approach is to allow respondents to tell their stories. In this way, we avoid inadvertently imposing a normative interpretative framework from the outset. During followup interviews or focus groups, we use the results of literature reviews to help identify historical patterns of stakeholder vulnerabilities to supplement the interview process and we use these two sources to present a community vulnerability profile. Community members are then free to respond to these profiles. From all of these sources, a value profile can then be abstracted by identifying what stakeholders have said about what matters to them.

These profiles are then compared against institutional value profiles, which are developed in a similar manner, to determine how well they are matched. We use N-Vivo, a qualitative research tool, to highlight value relevant statements and to begin categorizing them (see following section).

Since the team is composed of representatives from a wide range of disciplines and sectors, from sociologists to climatologists and from engineers to economists, the analysis of stakeholder vulnerabilities is informed by a variety of other perspectives, as well. In this way, whatever values are identified, they are placed in a context of economic, political, technological values. What this does, in part, is contextualize the values analysis, so that the norms that may become relevant to the analysis will not be isolated from the analysis of other factors. Further, the value and normative profile that emerges in the process cannot be taken as invented and imposed onto the research in order to support some pre-established ideological bias.

Categorization

The second stage of the process is categorization. Still a descriptive function, categorization is linked to identification, but is better seen as a second order identification. At this level (L2), values identified at the first level (L1) are arranged according to more general categories and their possible relationships noted. Categories, for the most part, announce themselves, particularly where the investigator holds the cultural expectations and perspective of the respondents. Where

this is not the case, more care needs to be exercised to ensure that stakeholder perspectives are appropriately represented. Farmers may have a different point of view than city lawyers; Aboriginal people may have a different point of view from non-Aboriginals. What may be categorized as a positive economic value by one, may be viewed as negative value by another. Or, what may be viewed as a purely economic value and not a spiritual value by one community may be viewed as both by another. It is important, then, to check the way L2 categories are formulated. Thus, it is important not to assume that categories are strict in the sense that they do not allow for cultural differences or cross-categorization. Our feedback solicitation process is designed as a check against imposing categorial rigidity.

L2 categorizations begin the process of interpretation and profiling. Once first order values are categorized, patterns typically become evident. Since our field researchers first become familiar with the communities to be profiled by living in community, they become familiar with its ways of conducting affairs and some of the forces that affect people's affairs. Community expectations, behavioral influences (motivations for action), even social arrangements become apparent during this process. This is especially helpful for values analysis, because it allows the categories researchers will use to formulate a community's vulnerability profile to emerge as the data is collected. Moreover, since we are not testing hypotheses, but allowing stakeholders to respond in the way they deem relevant, the research process is about discovering what matters to stakeholders and framing what matters to them in a way that stakeholder themselves find acceptable (sometimes informative, as well).

Once L2 categorization is completed, a third level (L3) categorial scheme can help further sort values into higher order types. Wes Cragg (1997) has observed that stakeholders generally distinguish between core and peripheral, negotiable and non-negotiable values. By using these L3 categories, it is possible to add depth of understanding to what stakeholder values are and what they imply in terms of action preferences. For instance, if it becomes apparent that the local school and church are valued because they are centers of social cohesiveness, and that people are willing to sacrifice other aspects of their infrastructure in order to protect these centers, we can conclude that these institutions represent core values that are relatively non-negotiable. However, if stakeholders are willing to trade these values against economic efficiency (e.g., to allow their local schools to close and have their children bussed to other schools), then we can conclude that these centers do not represent core values. As this type of analysis is carried out, a nuanced and more complete understanding of stakeholder values and concerns can be established. Using a matrix for third order value representation can

help investigators and respondents sort out their values. The matrix could have the categories "Core" and "Peripheral" along its horizontal axis and "Negotiable" and "Non-Negotiable" along its vertical axis (Cragg, 1997).

L3 categorization helps sort stakeholder values in ways that stimulate dialogue between stakeholders and between researchers and stakeholders. It enables different stakeholder groups to explain their values to others and, by so doing, provide greater depth and breadth to their mutual understanding. Moreover, even if one stakeholder group does not understand or appreciate another's values (e.g., water as something sacred), by categorizing that value as a non-negotiable value, the other party can then compare that value against its own non-negotiable values (e.g., love of family), thereby beginning at least to understand the degree of importance that that value (e.g., sacredness) implies.

A brief anecdote may help here. In a forum where Aboriginal people, resource managers, industry representatives and others came together to try to work out a mutually acceptable approach to resource management issues, I was informally asked by a resource manager why Aboriginal people were so intransigent and stubborn when it came to negotiating the building of dams on their territory. He granted that the dams would flood ancient burial grounds, but the people would be compensated "more than adequately" (at greater than market value) for this outcome. Yet the people continued to resist the dams. He concluded that they were being unreasonable. My response was to ask him whether he would sell his daughter into slavery for an amount that would be considered "more than adequate compensation" according to the current market in slavery. Well, we know what his response was. He then asked if I would be willing to act as a liaison consultant. The point here is that this manager was able to compare the values associated with burial grounds with his own familial values, thereby coming to understand how a spiritual value could be formulated as a non-negotiable value. This resulted in a deeper understanding of the position his Aboriginal interlocutors were taking and a greater openness to expand the terms of reference that might be used in future negotiations.

Evaluation

Here I begin to explain how prescriptive forces and ways of articulating ethical principles begin to emerge from the empirical approach. The first thing to note is that the first two identification stages suggest a way of assigning relative weight to various value categories for both individuals and communities. If we allow the matrix (above) to be scalar so that respondents can place value descriptions alongside and above or below one another, we gain information about peo-

ple's willingness to trade values off against one another. This association with cost-benefit analysis is intentional, without intending to be reductive. It helps both stakeholders and researchers weight the various types of values stakeholders hold and begin explaining why each value carries the weight it does. I have, of course, pointed out a case in which a convergence of values and understanding occurred. The opposite might also arise, if, for example, at least one interlocutor simply cannot see the relevance of another's value typing.

The central philosophical problem arises, at this point. Since the analytic framework adopted is intended to be policy relevant, the question arises, "Which values and categories of values ought to guide decision-making and responses to climate change?" If the decision cannot be arbitrary, but there is no *a priori* determination of normative principles to guide the decision, it seems that I have just delayed having to deal with the prescriptive problem. The solution to this problem needs to emerge from the dialogue about the data, but there is nothing so far in the description of the values analysis process that indicates that a universal, or at least general, agreement over principles would emerge. At first glance, it would appear that data from the IACC project, in fact, fails to support my prediction that agreement on principles would emerge.

Indeed, initial examination of field data suggests the opposite. Agricultural stakeholders seem primarily concerned about economic prosperity and look to technological ingenuity to deal with whatever challenges climate change may bring. Their principal concern with government is that it aid individuals and communities in dealing with drought by developing infrastructure (e.g., dams and irrigation systems), wastewater treatment facilities etc., for which they pay through taxes. They strongly tend to want governments to act as technological advisors and suppliers of technology. In Alberta, especially, they want governments to keep out of their affairs and to protect the "first in time first in right" principle (FITFR). Those who hold these rights have priority access to the water resource over those who do not have these rights. In contrast, as one might expect, there are also those who feel that these rights are unfairly distributed and want the FITFR principle abolished, so that a fairer distribution of the water resource can be established. Little agreement between the two sides has been reached.

To complicate the problem, it has been noted how First Nation (the community that is more concerned with flooding than drought) responses were quite different than either of the two stakeholder groups mentioned. For the Blood Tribe, economic values were obviously important, but the importance of social, cultural and governance values were made explicit and emphasized. This of course raises the problem of cultural difference between Aboriginal and non-Aboriginal communities regarding the legitimacy of different forms of governance. We also concluded that the different communities viewed individual independence and autonomy quite differently, which in turn, affected how they valued different forms of governance. The problem of governance for the First Nation was connected to the federal government's failure to uphold basic treaty and Aboriginal rights, which are collective rights (vs. individual rights). The problem of the loss of culture was connected to the loss of identity, heritage and to social dysfunction, which are framed more in accordance with a collective identity rather than individualism. Although to many stakeholders the connection between climate change and governance was indirect, to many Aboriginal respondents, it was direct. We were told about the lack of upholding treaty and Aboriginal rights as key factors that made them vulnerable to climate change. Hence, for the First Nation, the initial value profile indicated that many different types of values than those articulated by other communities had to be recognized and that types of values that might be held in common would be differently weighted. When considering the differences between proponents and opponents of the FITFIR system, finding universal agreement over values seemed doomed.

However, if we overlay Leibniz's three principles onto both profiles, it is possible to see some commonality. The First Nation's responses are clearly framed as a case of having been unjustly harmed by their historical relationship with the federal government. This unjust harm is closely connected to their sense of not having been given what was owed them, according to their treaties. Hence, principle 2 (giving what is owed) is relevant to the articulation of what mattered to them. The long history of the Canadian government's failure to give what was owed, in turn, has made it impossible for many Aboriginal people to trust governments, or to believe in the integrity of governments. Without trust, they cannot view any level of government as having an appropriate capacity to help them adapt to climate change. Mistrust, then, is a crucial factor in their vulnerability assessment. Through the process of describing their vulnerability/adaptive capacity, then, they articulated a way of sorting their values in a normatively significant way.

With respect to the non-Aboriginal communities, I have mentioned the fact that follow-up sessions were used to allow respondents to provide feedback on our initial findings. During these sessions, prairie farm respondents began elaborating on their stories about their experience of drought. Even though they still initially focused their concerns on technology and economic instruments as key adaptive measures, many respondents came to mention the loss of a way of life and connected this sense of loss to their perceived vulnerability. For instance, since their children could see no future in farming and have left the communities to be educated as doc-

tors and lawyers, many respondents viewed their adaptive capacity as eroding. While parents expressed pride in their children's accomplishment, it was with a tone of remorse. Some of these stakeholders began sharing stories about how they had come to one another's aid during a previous drought and how they could draw on the sense of community, mutual concern and friendship to help them deal with drought. With the loss of the family farm, this ability to draw on friendship and other aspects of the moral economy was eroding. They also began to explain how the economically difficult times had made it difficult to keep their school viable and how they had fought to keep it open. They gave reasons for why they fought. It was important for them to have their children educated in their own community and to have a place where many community events could be held. For some respondents, perhaps most, it became apparent that economic prosperity was more a means for protecting their sense of identity, community and heritage, than it was to exercise individual greed or power.

To emphasize the importance of community identity and heritage, it is worth noting that other communities expressed how much they resented provincial governments for making decisions at a distance, whereas the federal Prairie Farm Rehabilitation Administration (PFRA) was held up as a model of community/government relations. The PFRA's approach to aiding farming communities was to have agents live in communities and be part of those communities. As a result, they could understand more than just the economic and technological needs. They could understand the daily affairs of the community and who constituted it. In other words, PFRA agents were perceived as belonging to the community and as people who could understand and participate in its moral economy. They could be better trusted to act in accordance with the community's moral economy.

When given sufficient opportunity, even those technologically and individualistically focused stakeholders began to sound not unlike Aboriginal respondents in their concern to protect ways of life, identities, communities, sense of heritage and a moral economy of trust. To some extent, they began to explain how these factors were core to enabling them to adapt to the impacts of climate change. Clearly, the loss of the family farm was viewed as a harm of much greater proportions than was initially evident in the interviews. It is not so clear that these communities viewed the security of the family and heritage as something owed them, but it does appear that respecting and protecting community values and protecting a sense of community identity was viewed as something governance institutions should take into account. In the same vein, the demonstration of such respect was connected to the communities' ability to trust government. In the end, therefore, all stakeholder communities (though perhaps not all individual stakeholders) implicitly adopted the three Leibnizian principles, as a basic normative structure to order their values and to explain why certain values mattered to them. Their stories, by virtue of making reference to what we would call 'social capital' and the 'moral economy' (see Scott 1976; Thompson, 1971), suggest that stakeholders of all sorts would eventually appeal to these three principles when debating how they want governments to operate and to treat them. And when they did appeal to these principles, their underlying value profiles began to reveal commonalities with other communities in ways that appear to close the gap between the communities. Whether this is enough to close the gap between the communities' value profiles is debatable. But it does give reason to believe that by adopting a values analysis approach, stakeholders and decision-makers alike can come to recognize the importance and cross-cultural legitimacy of certain core and non-negotiable values and the formulation of principles that would protect them. Like my resource manager colleague, they can at least be brought to see why there are differences between their value profiles and why those differences do not necessarily place them at odds with one another.

Conclusion

The problem of the plurality of prescriptive responses to climate change, the relevance of ethics, and the related problem of determining an ethic that would be sensitive to the complexity of climate change, have at least been partly addressed by the proposed values analysis approach. A general stakeholder concern for community, identity, heritage, when viewed in the context of economic concern, indicates that, at some level of analysis, different stakeholder groups have similar value profiles that are articulated in accordance with a common ethic. The three Leibnizian principles used to articulate the way in which people seem to want to protect their values certainly need not be considered exhaustive, but they are indicative of a highly generalizable ethic. Given that Leibniz himself came to identify these principles through empirical research, there is at least good reason to pursue further research into the possibility that these principles, among others are in fact universally held (or, that they are fundamental to living in human community).

If my confidence in the process of value analysis and dialogue, as capable of resulting in agreement over fundamental values and moral principles, is well placed, then the work of the ethicist on climate change is in no danger of becoming irrelevant, but is arguably central to the analysis of stakeholder vulnerability and adaptive capacity to climate change. But to accept this approach implies that ethicists cannot simply pronounce on rights and responsibilities, or make moral

judgments about what must be done. We will need to accept the role, in Habermasian terms, of stand-in interpreters (Habermas, 1990, p. 4), by helping communities identify, categorize and evaluate their values in a process of coming to understand and articulate what moral principles they in fact accept and how these principles can be formulated to achieve cross-cultural understanding and agreement. But how we perform this function will require engagement and a willingness to make an empirical turn.

Endnotes

1.   brucem@athabascau.ca.
2.   This paper is a companion to two working papers written for the project, Institutional Adaptations to Climate Change: "Value and Ethical Analysis in Vulnerability to Climate Change: Establishing an Analytic Framework for Identifying, Classifying and Evaluating Vulnerability Issues," for the SSHRC-MCRI research project, Adaptation to Climate Change - Comparative Study of Dry Land River Basins Canada and Chile http://www.parc.ca/mcri/pdfs/Morito.pdf; "Values Analysis and Institutional Adaptation to Climate Change" for the SSHRC-MCRI climate Change research team http://www.parc.ca/mcri/papers.php.
3.   See http://www.ipcc.ch/ipccreports/ar4-wg2.htm, (accessed, March 6, 2009) for example.
4.   This term is used in the social sciences to refer to the system of values and norms which tend to be overlooked by economists and others who focus on more quantitative approaches to explaining human behavior. See (Adger, 1999; Scott, 1976; Thompson, 1971)
5.   This research team has been funded by the Social Sciences and Humanities Research Council under the Major Collaborative Research Initiative program (2004-2009). We have been studying institutional adaptive capacity to climate change in two regions: the South Saskatchewan River Basin in Canada and the Elqui River Basin in Chile. See website: http://www.parc.ca/mcri/index.php.

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