

Climate Change, Individual Responsibilities and Cultural Frameworks

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*Abstract*²

Until recently the role of culture in mediating responses to global change has been little discussed. Since the failure of the Copenhagen Climate Summit (COP15) to agree to binding agreements on emission targets, however, the cultural dimensions, arguably, should increasingly become a focus of interest. On the assumption that, in the light of accelerating climate change, individuals have both ethical and prudential responsibilities, the limited advances in mitigation and adaptation of international institutions and national governments may pose significant obstacles for action. It is suggested that, for individuals to adequately address their responsibilities under these circumstances, requires taking note of the cultural frameworks of our societies. Two areas, in which cultural dimensions may play a particularly important role, are highlighted, namely the conceptual framing of environmental forces and the development of citizens-led governance.

Key words *Cultural frameworks, climate change, conceptual framing, governance, responsibilities*

Though climate change may seem to be something new, there has been significant climate variability at various points during historical periods (see e.g., Fagan, 2000). In prehistory, moreover, modern human beings not only lived through very significant climate variability, but also repeatedly went through periods of rather sudden climate change (see Burroughs, 2005). We also know that some groups of human beings weathered such periods of change better than others. This calls for reflection on the factors that are relevant for human wellbeing in times of changing climates.

We have very good reasons to believe that mitigation and adaptation are absolutely necessary in order to limit the extent of anthropogenically-led climate change and the harm that it is expected to cause human and non-human beings through consequent increases in the severity of droughts, storms, floods, and other highly disruptive events (IPCC, 2007). Therefore, it is all the more disappointing to witness

the failure to achieve binding agreements on emission reductions at the 2009 Copenhagen Climate Summit (COP15), and to realise that further negotiations aimed at such measures, as well as sufficient support for adaptation, are only barely moving forward.

Insofar as people as individuals face an imperative to act on climate change, both on ethical and prudential grounds, the very limited progress with regard to mitigation and adaptation at the level of international and national institutions poses significant obstacles, since little can ultimately be achieved with regard to these matters by individuals acting alone in piecemeal fashion. The question then becomes, what may enable citizens to act *despite* the present obstacles? The proposal here is to consider the role of some of the *cultural* dimensions of human responses to climate change.

In the following, I briefly discuss some of the reasons for taking both ethical or prudential responsibility with regard to climate change, and some of the circumstances that make it difficult for individuals to realistically face those responsibilities. Next, I draw attention to the role of cultural frameworks in the conception of, and stance toward, diverse disruptive, environmental forces, such as floods, volcanic eruptions and tsunamis, and the importance of such conceptualizations for effective adaptive behaviors. After this, I point out that broad cultural factors are relevant to the development of non-governmental governance. I conclude that one important way to address our responsibilities regarding climate change may be to consider the role of cultural frameworks in the conceptualization of the environment and the development of governance.

Responsibilities and the relevance of cultural frameworks

Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level. (IPCC, 2007, 30)

The last Assessment Report (AR4) of the IPCC (2007)

has strongly supported the view that climate change processes are accelerating, and that future as well as present generations are going to experience very significant increases in the severity of disastrous, and possibly catastrophic, environmental events, which will bring about significant harm to human and non-human beings. If quickly implemented across societies and geographical boundaries, mitigation could soften the impact of expected events (Weaver, 2009). By most lights, however, limiting temperature increases to below the benchmark of 2°C temperature rise above pre-industrial levels³ will require very drastic reductions in greenhouse gas emissions (Anderson and Bows, 2008). Adaptation, moreover, is urgently needed, though coordinated international adaptation strategies are only just beginning to emerge, and the extent to which such actions will be able to address the impacts of climate change remains highly uncertain (Parry et al. 2009).

Ethical and prudential responsibilities

One does not have to be a radical environmentalist to realise that this situation calls for a reflection on our personal aims, the wider goals of the societies in which we are embedded, and possibly our whole way of life — at least in the richer countries. It certainly calls for reflection on our responsibilities as members of nation states and as individuals. Aside from the deeper consideration that climate change calls for, various well-recognised ethical perspectives offer themselves as ready-made reasons for action. I will not review them here, though they range from the assumption that actors have responsibility for the harm that they produce (often discussed as the ‘polluter pays’ principle, see Gardiner, 2004; Garvey, 2008), to the view that those who are able to prevent considerable harm from occurring, ethically, ought to do so (cp. Singer, 1979).

Moreover, given the widespread, expected disruptive effects of climate change for most, if not all, human beings around the planet, which at the level of human responses also may likely include increased migratory flows and conflicts over resources, we can assume that a strong case can be made for responsibility from the perspective of *prudence*. Consequently, we may conclude that there are significant reasons to act both for moral and prudential reasons. It also means that our responsibility to act probably should reach deep into whichever roles we embody, be it as formal political representatives of society, as public servants, as decision-makers in private enterprise, or as ordinary members of civil society (for a related discussion, see Heyd, 2001).

Such responsibilities to act with regard to climate change can be understood in terms of prevention, mitigation and adaptation. It is too late now for outright prevention, which makes mitigation and adaptation absolutely necessary,

and given the pace at which climate is changing (Steffen, 2009), it means that the responsibility to act is *urgent*. In other words, on the assumptions outlined, it is quite clear that *climate change constitutes an urgent moral and prudential problem, such that the need for action to bring about mitigation and adaptation should be beyond reasonable doubt* — even if the distribution and source of responsibilities, or the assignment of benefits and costs, may be worth examining in considerably further detail (see Jamieson, 2001; Gardiner, 2004; Garvey, 2008).⁴

As noted, much seems to depend on the existence of concerted action at national and international levels. This raises the question whether one’s individual responsibility to act can be adequately shouldered, given present economic/social/political conditions. Famously, “ought implies can.” That is, if we cannot, we are not required to act. Consequently, we need to ask the question, can well-meaning individuals hope to be effective in their attempts to do their part in mitigating climate change and in preparing society through adaptation for the impacts that already are under way?

On the one hand, the answer seems to be a cautious yes. This is not the place to recount the various practical ways of transforming individual habits, such as changing over to renewable energy sources for one’s household use, buying locally produced goods, or using local ingredients whenever this lowers carbon footprints. Much depends, however, on the implementation of international and national measures for coordinated action on mitigation and adaptation. For example, without governmental support for adequate rapid transit options, ordinary citizens have trouble switching to low greenhouse gas emitting transportation options. Such supportive governmental policy, however, makes eminent sense, as several, very influential research reports, including the Review on the Economics of Climate Change by economist Nicholas Stern (carried out for the UK Government; Stern, 2006), and the recent Canadian analysis of regional impacts of climate change on employment and GDP (Pembina Institute/David Suzuki Foundation/Jaccard, 2009), have argued. In their view, significant mitigation and adaptation measures, taken on in short order, will prevent greater harm later and may even provide economic benefits now.⁵ In any case, even if there is debate on how far the less-industrialised, and the newly industrialising countries can or should be willing to go, the wealthy nations *do* have the material resources and know-how to immediately take on the first steps of the large-scale mitigation and adaptation measures that the situation requires.

On the other hand, the answer to the question seems to be *no*, at least not given the present, very limited international commitment to action, as represented by the Copenhagen Accord achieved at COP 15 in Copenhagen (in Dec. 2009).

The frustrating failure of national and international actors to take on mitigation and adaptation in a significant way is mediated by a number of factors, including the continuing effects of the economic crisis; the failure to find agreeable compromises among have-, have-not, and emerging, countries; the power of corporations and media outlets to subvert any meaningful debate on necessary, binding, and likely restrictive, measures; the widespread political lethargy of large majorities of educated citizens in democratic countries, such as Canada, and so on.

Strikingly, there has been awareness of global warming in North America since the 1930s, and, among physical scientists at least, it has been known since 1896 that increases in carbon dioxide could raise the level of the planet's average temperature (Weart/American Institute of Physics, 2003-2007). Since 1992 this awareness has generated some institutional action on climate change. The World Meteorological Organization (WMO), in conjunction with the United Nations Environment Programme (UNEP) created the Intergovernmental Panel on Climate Change (IPCC) already more than two decades ago (in 1988). This was followed by diverse efforts to develop international law, to mitigate global warming, including the Kyoto Protocol.

Globally, however, there has been very little action to mitigate and to adapt to climate change to date (Weaver, 2009). As the road from the Kyoto Protocol to the December 2009 Copenhagen Climate Summit, and to the subsequent December 2010, Cancún COP16 meeting, shows, progress has been very slow and mostly ineffectual in achieving goals set out for the UN climate agreement process. So, despite repeated flurries of public statements of good will regarding action on climate change throughout the last decade (2000-2010), there are reasons to be pessimistic about the readiness, and even the capacity, of decision-makers to implement the deep, and possibly drastic changes to business-as-usual and lifestyles needed to address climate change in an effective way.

In fact, as laid out in various international reports, including the Fourth Assessment Report (AR4) of the IPCC (2007), decreases in greenhouse emissions need to be much faster than leaders have been willing to acknowledge. In fact, they should reach *negative* levels within a short time (Zickfeld, 2009). John Schellnhuber, member of the German Advisory Council on Global Change, has even argued that the United States must cut emissions 100 percent by 2020 (Hertsgaard, 2009; also see WBGU, 2009). This, doubtless, would mean even more important changes in our ways of supplying needs and satisfying wants than commonly envisaged. Rapid decarbonisation of industry and individual lifestyles would not only mean to *exclusively* use energy from renewable sources, but also that people in the industrialised North use

less energy in absolute terms, so that the remaining energy generated can be shared more equitably. This would effectively mean serious economic contraction for the better off, while leaving some capacity to expand to less industrialised countries and requiring a large-scale injection of funds to generate low carbon development (see Anderson and Bows, 2008, regarding rapid reductions needed; see Attfield, this issue of *HER* for an argument for contraction and convergence).

Sadly, most national governments only give lip service to the notion that something needs to be urgently done about global warming, and, what *is* done, generally is too little too slowly. Consequently, if, for reasons of our present economic/social/political conditions, individuals reach the conclusion that they cannot effectively act on their responsibilities regarding climate change, it may seem to them that their responsibilities become *inoperable*, or even that they *disappear*. This train of thought may underlie some of the widespread defeatism and complacency with which climate change presently is being treated in many sectors of our society (regarding complacency, also see O'Brien *et al.*, 2006). There is reason, though, to believe that individual responsibilities do not really disappear.

In this context it is relevant to take note that standard approaches to mitigation and adaptation, reliant on the development and application of existing technical, managerial or scientific know-how, are not and will not be sufficient by themselves to address the realities of climate change. A lot seems to depend on the predominant cultural frameworks that guide people's thoughts and actions (also see O'Brien, 2009).

Relevance of cultural frameworks

Certainly, the notion of culture is a contested matter (see, e.g., Ingold, 1994). I will assume a rather standard definition that incorporates Boasian postulates, according to which it is "*The system of shared beliefs, values, customs, behaviours, and artifacts that the members of society use to cope with their world and with one another, and that are transmitted from generation to generation through learning.*" (Italics added; Bates and Plog, 1976, 7). We should not, however, think of cultures as neat, homogeneous, isolatable units that can be apportioned to discrete human groups, even if this idea corresponds to common English language usage today. It may be possible to describe certain cultural patterns as arising from within particular social-historical contexts, but these patterns have to be conceived as dynamic, subject to constant transformation and in regular interaction with those of people from other social-historical *milieux*.

This is especially true today, given the accelerating interaction of human populations in our increasingly globalizing world, subject to multiple migratory flows from the South

and expanding media influences from the North.⁶ The effect on behaviors of any cultural ensemble is mediated, moreover, by power relations, and not simply the result of adaptation to objective conditions of the natural environment. Nevertheless, particular cultural patterns may be among the key factors that distinguish populations from each other in terms of their respective collective abilities to cope with powerful natural events.⁷ Here I intend to limit myself to the consideration of the role played by cultural frameworks, insofar as they manifest themselves in the *ensemble of beliefs, values, priorities, practices, and material support* that characterise particular patterns of human thought, attitudes and behaviour.⁸

The importance of cultural frameworks with regard to the conceptualization of environmental phenomena is evident in various ways. For example, despite repeated warnings about increasing frequencies of high level floods, people continue moving into (and building conventional housing in) areas of Vancouver (such as Richmond and Delta) that, as a consequence of climate change, are likely going to be inundated by a combination of high levels on the Fraser River and sea level rise (see, e.g., Wood, 2006a; Wood, 2006b). In Spain, similarly, countless new, intensely water-demanding golf course developments are being planned, even though it is foreseeable that, as a result of climate change, the frequency and severity of recurring droughts in that country will increase and even put a great strain on water supplies for basic needs (drinking water supplies and irrigation agriculture). (See, e.g., Schouten, 2003) Such behaviour calls for explanations that go beyond mere appeals to short-term economic thinking.

The importance for adaptive behavioural patterns of the particular arrays of beliefs, values, priorities, practices, and material structures that make up people's cultural frameworks is evident, moreover, in relation to responses to natural disasters (Macnaghten and Jacobs, 1997). Even when a population is directly affected, suffering through such events, people all too often retain patterns that seem not well suited to the presence of significant hazards in their environment. A case in point is the rebuilding of towns and villages in Indonesia along shallow sea shores after the devastating Indian Ocean Tsunami in 2004. Many of these towns, notably, have been rebuilt in places where mangroves, which can constitute a sort of natural shield against storm surges and tsunamis, formerly grew. Another case in point is the disastrous flood damage endured by homes and businesses in Central Europe in 2006, which occurred in some of the same areas where similar floods happened just a few years before. It is noteworthy that, *even after such events*, people would choose to ignore the inherent risk of their location on flood plains and in the vicinity of river banks, on the assumption that such events are rare and can be ignored (see Kuhlicke *et al.*, forthcoming).

Certainly, the explanation for taking such risks may be sought in various factors, not usually attributable to self-conscious decisions under risk but to particular social, geographical or economic circumstances. Due to economic and social marginalization, imposition by authoritarian regimes, short term profit-driven motivations, or simply the need to maintain presence on property that they depend on, people may end up rebuilding in the same places and exposing themselves to the same risks as before such drastic events (Leroy, 2005). My proposal is that the failure to deploy appropriate adaptations (even by people in rich countries who have sufficient scientific information, technical expertise and managerial know-how to change course) points toward the important role of the whole set of beliefs, values, and so on, that make up people's cultural frameworks (also see Moser, 2009).

So, given the importance of cultural frameworks for decision-making in situations of increased risk, what stance should people take with regard to climate change if national governments and international institutions continue delaying serious action on emissions reductions and adaptation? How far should individuals go in changing their own lifestyles if society as a whole fails meaningfully to support the needed changes (e.g. with bike lanes, legislation facilitating the switch to renewable energies, and so on)? One response to these questions is that, even if it may seem difficult for individuals to take action on their responsibilities without broad institutional support, or if such action may seem relatively ineffectual, it may still be reasonable to act on one's responsibilities at a second order level, in particular, by promoting changes in society such that the issues in question *can* be effectively addressed.⁹ One way to address this issue may be by focussing on the cultural frameworks underpinning our actions and attitudes, in particular, the conceptual framing of environmental forces related to climate change, and the processes that facilitate or support citizen-led governance.¹⁰

Cultural frameworks and adaptation to environmental forces

As already noted, understanding cultural frameworks may be of crucial importance in order to address climate change, since these frameworks enable and constrain behavior, even if the notion of culture, and how to understand it, is itself debated. The impact of differences in culture with respect to adaptation may be illustrated even with an example from the relatively homogeneous Western context. We may consider, for instance, that Canada and Scandinavian countries, such as Sweden, probably have access to equivalent levels of expertise with regard to technologies that can facilitate carbon-neutrality, and enjoy similar types of democratic institutions and over-

all comparable levels of economic wellbeing (also see Burch and Robinson, 2007). Nonetheless, while situated in relatively similar climates, Scandinavian countries are moving ahead considerably faster than Canada in making their economies independent from oil and gas. Sweden, for example, has made a commitment, and taken a number of steps, toward achieving this goal by 2020 (see Giddens, 2006, 145).

These differences certainly can be explained in terms of availability of particular resources of high value on the world market (such as oil and gas in Canada) and historical-political or economic factors, but they likely are also rooted in more fundamental factors, such as diverse cultural traits. Such cultural traits may be exhibited through differences in habits of taking prudential, long-term oriented measures for society as a whole, along with the corresponding attitudes, values, belief systems and institutions.¹¹ These traits may, moreover, be connected to more collective approaches to managing society, which themselves may engender a practice of collective social responsibility, which compares with more individualistic approaches in North America and the U.K. (see, e.g., van den Pol, 2010, for a study comparing Germany with USA and the UK).

Differences in cultural frameworks, furthermore, may provide a plausible explanation for differences in precautionary measures taken by diverse groups of people after they suffer through natural environmental disasters. For some populations such events remain firmly anchored in their cultural memory, at least for the span of one lifetime, while for other populations, who have undergone similar experiences, this is not so. This has been observed, for example, with regard to awareness of the signs of impending tsunamis and volcanic eruptions among populations living in Papua New Guinea and the Solomon Islands (Davies, 2002). After a disaster, some of these populations will even be willing to relocate their villages permanently while others refuse to, or return after a short absence.

In some cultural contexts disastrous natural events will, moreover, lead to the invention of myths and the establishment of taboos about the avoidance of certain areas of the land, while in other societies this does not take place (Lowe *et al.*, 2002, 138). These differences may be explicable by differences in the conceptualization of such events (in combination with other factors, such as differing levels of social cohesion). In fact, some conceptions of disastrous events seem to demand taking personal and social responsibility, while others seem not to, leading to behavioral responses that considerably differ in terms of their degree of adaptiveness. In general, such cases suggest that cultural frameworks are fundamental factors in human responses to natural changes insofar as they mediate the understanding of, and adaptation to, such processes. Applied to our contemporary situation,

this has some interesting implications, which can only be sketched here, however.

The examples described suggest that it may be valuable to reflect on the cultural frameworks that predominate in our own societies, and the implications they have for readiness to confront potentially disastrous environmental events. Primarily this means considering how environmental processes are conceived of, as well as how those conceptions interact with the beliefs, values, practices, and material infrastructures that shape peoples' social and economic activities. Given that some of our present problems are the result of viewing disruptive environmental events as merely temporary or momentary obstacles, of which it is supposed that they eventually can be controlled through the application of technology and engineering, it may be interesting to consider alternatives, such as the idea that certain physical phenomena exhibit a kind of self-organization or agency that only may be controllable or predictable in a very limited way (see Heyd, 2005; Heyd, 2007; Homer-Dixon, 2006).

The practical consequence of such considerations may include the development of a willingness to give physical processes space and time for their 'expression'. This sort of idea has already been adopted by some environmental managers, as when they argue for the rehabilitation of deltas and polders as flood retention areas in the case of rivers, or the restoration of mangroves and forests in threatened coastal areas (Ledoux *et al.*, 2005). We may also want to think afresh about the way we conceptualise certain other potentially disruptive environmental phenomena, such as on shorelines, floodplains, steep hillsides, and so on. More fundamentally, of course, reflection of what we understand by 'weather', 'climate', and so on, is urgently called for, if we are to adequately address mitigation and adaptation with regard to climate change (for further discussion of these issues, see Heyd, 2009).

Cultural framing of governance

Cultural frameworks also seem to have a fundamental role in constraining and enabling attempts by people to coordinate action designed to cope with and adapt to environmental change such as may be provoked by climate change. So, the question arises whether in the light of the relatively limited international and national commitments to action, individuals could take an active part through their own governance initiatives. This raises some fundamental questions, such as, what is governance, and what conditions the effectiveness of non-governmental, citizen-led governance?

Governance and the tragedy of the commons

The literature on the definition and conception of governance is vast and spans various disciplines and cross-disci-

plinary areas, and cannot be summarised here, but suffice it to say that governance fundamentally concerns “the manifold ways in which humans regulate their affairs to reach common goals and react to a changing environment.” (Pattberg, 2007, 1) Governance, in general, has been distinguished from other forms of social coordination by its connection to the institutionalisation of rules and general norms (Pattberg, 2007, 14).

Governance, whether through formal institutions or otherwise, is no new invention, as it is entirely normal for human groups to develop ways of monitoring and controlling commonly valued and held resources in response to open access to commons (Moran, 2000, 328). Such regulation of access often is brought about through informal kinds of controls, which can be described as conventional norms and taboos, as well as through formal controls, exemplified in positive law.

Lately, however, conventional norms and taboos often have weakened or disappeared, due to increasing globalization, with the result that many vital commons of our world, including air, water, forests, seas and agricultural lands, are subject to serious degradation. Such a result was theorised as inevitable, and labelled as the “tragedy of the commons,” by Garrett Hardin (1968). The inevitability of such a tragedy has been a much debated topic, though. The renowned anthropologist Emilio Moran, for example, has argued that “a substantial body of empirical research has challenged the universal applicability of the extant theory” about the irresponsible overuse of the commons (Moran, 2000, 328).

Likely the destruction of common properties is a result of specific causal factors, such as the loosening of traditional community ownership ties to the corresponding spaces, and their replacement with competitive, monetized ownership relations, along with their insertion into world market systems. It is an open question, in any case, whether community regulation of the use of the environment may not be effective in countering the trend toward ‘tragedies’ of the commons. Elinor Ostrom, in fact, argues that, quite contrary to Hardin’s expectations, in many contexts, ‘tragedies of the commons’ are avoided because human groups over time normally develop the values of reciprocity and trust (Ostrom, 1998).¹² The connection of appropriate governance of commons with these values may partially explain why non-governmental governance, which in the light of the tragedy of the commons may seem futile, can, after all, be effective in its application to the environmental commons (see, e.g., Monbiot, 1994).

One may wonder, of course, if it is reasonable to suppose that governance may arise as a ‘natural’ way to protect the *global commons* threatened by climate change, when the forces at work are little understood by most people, beyond any individual’s (or any small group of individuals’) effective influence, and operating on time and spatial scales that are hard to grasp even for experts; when the actors involved are

multiply diverse, motivated by a great variety of interests, dispersed in time and geographical space; when the negatively affected ‘resources’ are multifarious, and sometimes not even properly identified (as in the case of the diminishment of diversity in biological species); when no direct link between local action and mitigation or adaptation at the global level can easily be established; and so on. As one of the anonymous reviewers of this contribution stated,

Historical governance structures that have evolved for natural resource management have generally emerged from a need to sustain very specific and easily identifiable (water, pasture, etc) resources on which the communities doing the governing depend. In contrast, governance of the global climate is much more problematic, as ‘global climate’ remains a rather abstract concept to most people. (Comments by anon. reviewer no. 2)

This kind of objection is well put since governance, normally, comes about through the efforts of particular groups, who are resident in one particular location over long periods of time, and in this way have the opportunity to develop principles of coordination that are adequate to the protection of particular, valued, local resources (see, e.g., Monbiot, 1994). As the reviewer states, “In contrast to groups that depend on a common, localized, easily identifiable resource (water, pasture, etc), for whom harm to one is harm to all, the impacts [of climate change] will be geographically differentiated, so [it] is not seen as a universal harm by all the relevant actors.”

This calls for reflection on the aims that one may reasonably have for governance of the kind that can be brought about by individuals and communities. Surely such governance may contribute to society-wide goals, where there are such goals. In the absence of such society-wide goals, non-governmental governance may *still* constitute an effective tool, however, if understood as a way of generating support for wider, formal, governance through its exemplary function. That is, by showing that, within a certain context, *some kind of governance is possible*, non-governmental governance may point toward the realizability of governance in a wider, and more formal, sense. More specifically, non-governmental governance may be effective either directly, through networks, organisations and agreements that take their place alongside state-sponsored control and regulation (Bulkeley and Mol, 2003, Pattberg, 2007), or indirectly, by compelling government to address issues of concern to the public (Sending and Neuman, 2006; Ridiger et al., 2005).¹³

Governance and cultural factors

Various studies have considered the factors that have led to the recent flourishing of governance as a tool to address

environmental agenda. They tend to focus on the political and social dimensions, related to the emergence of civil society as a player on the world stage of international treaty making as a result of the general frustration with the perceived ineffectiveness of various state-sponsored environmental protection initiatives (Pattberg, 2007; Rüdiger et al., 2005). We may also take into account, however, that the development of civil society, and the readiness (or lack thereof) of citizens to take governance issues in hand themselves, are expressions of their respective, particular cultural make-up, encompassing beliefs, values, common practices, and so on (see Macnaghten and Jacobs, 1997).

In fact, one may argue that the importance of governance regarding environmental matters arose out of a certain cultural *milieu* in the 1980s, which itself gained renewed vigour through the very success of these new forms of social coordination. As non-governmental governance (such as in the regulation of fair-trade, organic foods) succeeds in bringing about significant changes, it may lead to new (formal or informal) institutions (such as watchdogs for environmental friendliness of various household or yard products), which, through dissemination of information and opportunities for action, further enrich the resources which citizens have at their disposal to confront environmental concerns. This enriched cultural *milieu* facilitates the development of further capacities for action at various levels of society, such as through the creation of environmental research institutes, and reinforces citizen's confidence in their own capacity to act. These transformations may lead to still further proposals for enlarged environmental governance and institutions, as well as to impulses for government to address some of the citizens' concerns, thereby supporting the conditions for yet another stage of transformation of the cultural context (for a related analysis, see Ostrom, 1990/1995).

I see evidence that such processes, which can be described as virtuous cultural spirals, have taken place, for instance, in the micro-cosmos of the institution where I teach, the University of Victoria. Student-faculty coalitions promoting sustainability arose as a result of impatience with the impending loss of a small but symbolically important, stand of relatively old forest on campus, due to limited environmental regulation and lack of suitable initiatives at the institutional level. These coalitions took form in the University of Victoria Sustainability Project (UVSP)¹⁴ and provided the impulse for the University administration to undertake a review of the campus plan, which then led to formally adopted norms for all university-wide activities, such as limiting new buildings to existing parking lots and, in principle, disallowing construction on forested lands. These changes probably contributed to a climate that generated a further cultural shift among at least a portion of the student and professorial bod-

ies,¹⁵ which then facilitated the emergence of new campus networks, such as Common Energy¹⁶ (which promotes energy conservation), enhanced environmental journalism in the student newspaper, and the creation of the UVic Campus Community Gardens,¹⁷ among other things.

In summary, even a cursory review of the literature on non-governmental governance, as generated by individual members of civil society, shows that such endeavours may stimulate, or at least support, the subsequent kind of formal policy-making (at the hands of some level of government) that is needed to address climate change. It also shows that this kind of governance is dependent on suitable cultural frameworks that support its emergence and maintenance. The issue then becomes how such cultural frameworks come about. Possibly, environments that support the value of individual innovation may be more ready to support new governance initiatives. Or perhaps the crucial element is the values and practices that maintain social coherence. These are matters that deserve further research of their own. In any case, insofar as non-governmental, citizen-led governance may have an important role to play in generating the kinds of changes needed to address climate change, consideration of the elements in our societies' cultural frameworks that enable or constrain such initiatives may be of crucial importance.

Conclusion

I have assumed that there are good reasons for individuals to act, based on both ethical and prudential considerations, in order to limit the harms that climate change will likely bring to our societies. I have proposed, moreover, that, even if present socio-political conditions are such that individual action in support of mitigation and adaptation at first may seem futile, there is another level at which individuals may pursue their perceived responsibilities, namely, by promoting the changes needed so that individual action may eventually receive the required institutional support. I have suggested that such changes may importantly be furthered through consideration of the prevalent cultural frameworks.

Both the way that we conceive of physical, environmental phenomena, and the way that we conceive of our capacity to collectively govern our common goods, seem to be dependent on the cultural frameworks with which we approach the world. Consequently, effective action likely requires reflection on people's conceptualization of environmental forces as well as a clear understanding of the cultural conditions that make engagement in governance possible.

The anthropologist Julie Cruikshank encapsulates well the importance of the wider cultural dimension in her claim that "our human ability to come to terms with global environmental problems will depend as much on human values as on

scientific expertise...” (Cruikshank, 2001, 390) Such values are part of the enabling and constraining cultural framework through which we approach the world. I conclude that, despite the slow pace of commitment to action on climate change of national governments and international institutions, individuals may still address their responsibilities with regard to climate change by attending to, and possibly transforming, the cultural frameworks with which we engage our world.¹⁸

Endnotes

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- 2 This paper was read at the session on Human Dimensions of Climate Change, held at the Conference of the Society for Human Ecology, University of West Washington, Bellingham, WA, USA, September 2008. Author coordinates: Thomas Heydt, Ph.D., Department of Philosophy, University of Victoria, P.O. Box 3045, Victoria, BC, V8W 3P4, Canada. E-mail: heydt@uvic.ca.
- 3 Many take the 2°C benchmark as a way to demarcate the frontier to ‘dangerous anthropogenic climate change’, which members of the UNFCCC have committed to avoid, according to Article 2, though others already perceive this limit as an overshoot.
- 4 As such, this conclusion is not weakened just because there may be people who either do not accept the assumptions outlined, or simply do not believe that the conclusion follows, or do not believe that the problem is urgent enough to have implications for action, or fail to see that they — as individuals — may have responsibilities to act, and so on. These objections may certainly be worrisome because they imply that a number of people will not take on the responsibilities implied by the argument, and in this way impede their practical commitment, however. We may think of these difficulties in terms of ‘cognitive’ and psychological failures. They cannot be addressed here, but see, e.g., Gifford (2009), American Psychology Association (2009), and Garvey (2008).
- 5 Recent studies have questioned, however, whether measures can be implemented fast enough, and would in any case be sufficient, to deliver reductions in line with requirements to prevent ‘dangerous anthropogenic climate change’ (see Anderson and Bows, 2008). One may also wonder if ‘greening the economy’, while maintaining present economic aims and structures, ultimately may lead to the necessary reductions envisaged as necessary.
- 6 As one of the anonymous reviewers points out, in a period of change and disruption there may be “cultural fragmentation and retrenchment” to traditional values. This may well be true even while increasing integration of populations, through work migration and advertising, may lead to increased homogenization of accepted worldviews and values. These are matters that certainly are worthy of further consideration, in any case.
- 7 See, e.g., van den Pol (2010), who applies the idea of particular cultural paterings to explain differences in climate change policies among three nation-states (Germany, U.K. and U.S.A.).
- 8 While I realize that culture may sometimes be understood in contrast with socio-economic and political paterings, as well as in contradistinction from formal institutions, I do not enter into these dis-

tinctions here. Suffice it to say that culture constitutes the background condition through which we act, feel, and think. On this account, human behavior, thought and institutions are not simply based on genetic conditioning, society-independent maturation, or ‘objective’ conditions of the world around us, but are always also molded by paterings that are generated and transmitted by society exo-genetically.

- 9 This can be conceived somewhat on the pattern discussed by Harry Frankfurt (1971) for second order desires: just as we may have second order volitions to bring about certain first order volitions, we may perceive certain second order responsibilities to bring about the conditions for exercising our first order responsibilities.
- 10 The following sections include discussion of material also developed in Heydt and Brooks (2009).
- 11 The cultural differences may be of an even more fundamental sort, of course, perhaps affecting the most basic ways in which individuals construct their identity in relation to society and of natural phenomena, as anthropology has amply demonstrated.
- 12 According to Ostrom, a renewed rational choice theory, revised on the basis of such values, would explain where the notion of the tragedy of the commons goes wrong.
- 13 Regarding the effect that supra-national government, such as the European Union, on governance, see e.g. Vogler (2005).
- 14 The UVSP came into existence in 1999. It began as an university sustainability audit, proposed after the 1999 Sustainable Campuses Conference, itself an initiative of the Sierra Youth Coalition and the Sustainable Campuses Project (see Scahill, 2002; University Leaders for a Sustainable Future, 2002).
- 15 Also see M’Gonigle (2006) regarding the possibilities of modeling sustainability on university campuses. M’Gonigle teaches at the University of Victoria and actively supported the student-faculty coalitions mentioned in the text.
- 16 Common Energy, created in 2006, is a direct spin-off of the UVSP. http://uvic.commonenergy.org/wiki/Welcome_to_uvic.commonenergy.org.
- 17 They are run by students, are intended to demonstrate the possibilities of urban organic farming, and provide the campus with fresh produce during most of the year.
- 18 I would like to acknowledge the very helpful suggestions for improvement of this paper, provided to me by Nick Brooks, as well as by two anonymous reviewers of Human Ecology Review.

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