

Justice forward: Tribes, climate adaptation and responsibility

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Abstract

Federally-recognized tribes must adapt to many ecological challenges arising from climate change, from the effects of glacier retreat on the habitats of culturally significant species to how sea level rise forces human communities to relocate. The governmental and social institutions supporting tribes in adapting to climate change are often constrained by political obstructions, raising concerns about justice. Beyond typical uses of justice, which call attention to violations of formal rights or to considerations about the degree to which some populations may have caused anthropogenic climate change, a justice framework should guide how leaders, scientists and professionals of all heritages and who work with or for federally-recognized tribes understand what actions are morally essential for supporting tribes' adaptation efforts. This paper motivates a shift to a forward-looking framework of justice. The framework situates justice within the systems of responsibilities that matter to tribes and many others, which range from webs of inter-species relationships to government-to-government partnerships. Justice is achieved when these systems of responsibilities operate in ways that support the continued flourishing of tribal communities.

1. Introduction

Concern for justice should guide how leaders, scientists and professionals who work with or for federally-recognized tribes approach climate adaptation. This diverse body of actors, which includes persons of all heritages, can affect the institutions that tribes must rely on for adaptation, from tribal natural resources departments to federal climate change programs to treaty councils. There is a tendency to invoke justice to call attention to formal wrongs against tribes, like human rights violations, or retrospective considerations, like the fact that tribes bear the hardships of anthropogenic climate change despite their relatively minimal contributions to factors like industrial burning of fossil fuels. Yet justice also represents a crucial framework for guiding leaders, scientists and professionals in their understanding of what actions are morally essential for supporting the institutions that tribes must rely on to adapt. This paper motivates a shift from a formal and retrospective conception of justice to a forward-looking framework of justice that can begin to provide such guidance for adaptation. The framework situates justice within the systems of responsibilities that matter to tribes and many other communities. These systems range from webs of interspecies relationships to government-to-government partnerships. Justice is achieved when these systems of responsibilities operate in ways that support the continued flourishing of tribal communities. An important function of institutions like tribal natural resources departments, federal programs and treaty councils is to shelter and amend these systems in response to ecological challenges like increased frequencies of extreme weather events and changing habitats of culturally significant species.

To make this shift in how one thinks about justice, institutions and tribal adaptation, this paper lays out in Section 2 a formal and retrospective conception of justice that focuses on the constraints faced by institutions that tribes must rely on to adapt. Section 3 makes the shift to a forward-looking framework that situates justice within key systems of responsibilities.

Section 4 clarifies for leaders, scientists and professionals how four policies in particular should actually be understood as systems of responsibilities that institutions can shelter and amend. They are the government-to-government relationship, the trust responsibility, the inclusion of multiple knowledge sources in climate research and the advancement of multiparty governance.

2. Formal and retrospective justice

2.1 Climate change and collective continuance

Climate change presents serious ecological challenges for tribes, which range from shifts in populations of culturally significant species to extreme weather events that may force entire human communities to relocate (Figueroa 2011; Lynn et al. 2011; Shearer 2011; Voggeser 2013; Wildcat 2009). Current research in this Special Issue paints vivid pictures of the varieties and severities of the challenges tribes face (Cochran et al. 2013; Dittmer 2013; Gautam et al. 2013; Grah and Beaulieu 2013; Voggeser et al. 2013; Lynn et al. 2013; Maldonado et al. 2013). These challenges lead many tribes to remain concerned with what I call collective continuance. Collective continuance is a community's capacity to be adaptive in ways sufficient for the livelihoods of its members to flourish into the future. Adaptation refers to "adjustments that populations take in response to current or predicted change" (Nelson et al. 2007, 397). The flourishing of livelihoods refers to both tribal conceptions of (1) how to contest colonial hardships, like cultural discrimination and disrespect for treaty rights, and (2) how to pursue comprehensive aims at robust living, like building cohesive societies, vibrant cultures, strong subsistence and commercial economies, and peaceful relations with a range of non-tribal neighbors, from small towns to nation states to the United Nations (UN) [1]. Given (1) and (2), tribal collective continuance can be seen as a community's aptitude for making adjustments to current or predicted change in ways that contest colonial hardships and embolden comprehensive aims at robust living [2].

Ecological challenges stemming from climate change may cause tribes to be concerned with the relationships that constitute collective continuance. Collective continuance is composed of and oriented around the many relationships within single communities and amid neighboring communities. The capacity to contest colonial hardships, for example, may require relationships of solidarity among community members (LaDuke 1999; Ortiz and Chino 1980) and relationships that facilitate healing and ignite spiritual awakening (Alfred 1999; Tinker 2004). It may also require building trusted networks of relationships across tribal communities who face similar hardships (Grossman 2008; Maldonado et al. 2013). The capacity to build cohesive societies, vibrant cultures and subsistence economies may require close-knit family, social and political relationships, such as elders' roles in the lives of youth, customs of child rearing and viable regimes of property rights and land use incentives (Alessa et al. 2008; Mercurieff 2007; Trosper 2009). Relationships across species and with features of the land (like rivers or mountains) and ecosystems may also be required. For example, community members may uphold important relations with species like black ash tree, wild rice and sturgeon (Runstrom et al. 2002; Vennum 1988; Willow 2011). These relationships may be integral to the maintaining of multiple family, social and political relationships within the community; some species may even be the basis of clans and other important social groupings. Commercial economies require relationships that generate feasible, culturally appropriate opportunities and relationships that regulate economic production (Ranco et al. 2011; Trosper 2007). Peaceful relations with neighbors require relationships that respect the differences of each community in terms of

culture, relative power, needs and capacities to exercise agency (Davis 2010; Holmes et al. 2002; Ross et al. 2010).

These types of relationships are realized through the responsibilities incumbent on the parties to the relationships. That is, to be in a relationship is to have responsibilities toward the others in the relationship. Responsibilities refer to the reciprocal (though not necessarily equal) attitudes and patterns of behavior that are expected by and of various parties by virtue of the different roles that each may be understood to play in a relationship. Elders may have responsibilities to mentor youth through passing on wisdom; younger generations are, in turn, responsible for learning actively from their elders. A community may have a responsibility to care for sturgeon habitat; sturgeon, in turn, may provide food and may even be expected to protect wild rice and the fishery itself. Community members may be responsible for kindling spirituality by not evaluating their fellow community members according to colonial stereotypes about Indigenous persons. Such is the mutual responsibility of honor and respect among community members. International bodies, like the UN, may have responsibilities to respect emerging norms that acknowledge the sovereignty of Indigenous peoples (Anaya 2004). These, and other similar responsibilities, are among the building blocks of collective continuance because they enable contesting colonial hardships and pursuing robust living. Tribal concern with collective continuance, then, is a concern with maintaining the capacity to be adaptive with respect to relational responsibilities, or all those relationships and their corresponding responsibilities that facilitate the future flourishing of tribal livelihood [3]. I refer to relational responsibilities as responsibilities in the rest of the paper.

The brief examples of responsibilities provided above can be considered as belonging to larger systems of responsibilities. Systems of responsibilities are the actual schemes of roles and relationships that serve as the background against which particular responsibilities stand out as meaningful and binding. For example, a responsibility to maintain species habitat is part of a more comprehensive web of interspecies responsibilities that are tied to a community's worldview. Systems of responsibilities have intrinsic value (value for its own sake) and instrumental value (utilitarian, value for something else) for communities. For example, in Wabanaki culture berry plants have intrinsic value because they play integral roles in customs and rituals, establish the cultural status and rites of passage among Wabanaki women and are used to express relations of love (Lynn et al. 2013). Thus, an entire system of responsibilities is embedded in and permeates everything just described. The system has intrinsic value because it is essential for framing certain dimensions of Wabanaki existence. The berry plants have instrumental value because they are superfoods, according to nutritionists, having health benefits like cardiovascular protection. They also serve as cultural indicators of ecosystem services. Even systems of responsibilities amid communities have both kinds of value. For example, the government-to-government relation between the U.S. and tribes has intrinsic value because it can honor, in part, tribes' senses of nationhood. It also has instrumental value because respecting tribal sovereignty is considered to be part of effective policy formulation, implementation, and assessment.

The ecological challenges of climate change threaten collective continuance by changing the contexts in which systems of responsibilities are meaningful. Changes in landscapes may engender less opportunities for elders to teach youth in practical situations. Glacier retreat may affect the survival of salmon or start to affect the range, quality and quantity of berry resources, making it more difficult or even impossible for tribal members to exercise their responsibilities toward those species (Campbell and De Melker 2012; Lynn et al. 2013). Multiple, diverse and

complex tribal needs for climate change adaptation can lead federal agencies to throw their hands in the air due to the lack of funds and personnel and lessen their efforts at honoring the government-to-government relationship. Such ecological challenges, then, put stress on the ability to perform the systems of responsibilities that are constitutive of collective continuance. Such stress threatens the intrinsic and instrumental values held by many tribes.

2.2 Institutions and collective continuance

One way that tribes have responded to the challenge of realizing and maintaining collective continuance is through the creation of or engagement with social institutions, or institutions. Institutions “are constellations of rules, decision-making procedures, and programs that define social practices, assign roles to the participants in such practices, and govern the interactions among the occupants of those roles” (Young et al.1999, 3). They can range from “formal governmental institutions” and “large-scale interest-driven organizations” to various widely held beliefs, practices and norms (e.g., norms about property rights in a society) (Shockley 2012). Many kinds of institutions are in the position to affect tribes’ collective continuance when faced with the ecological challenges of climate change. Such positions include, but are not limited to:

- Internal integrative adaptation planning: where tribal programs facilitate adaptation planning across multiple tribal agencies or departments, from natural resources to internal services (Mears 2012);
- External integrative adaptation planning: where such programs facilitate adaptation plans between tribal and federal partners, like the Northwest Forest Plan (Harris 2011);
- Fostering inclusive research: where such institutions participate in research processes that encompass tribal and non-tribal sciences, like the Natural Resources Conservation Service’s guide on Indigenous stewardship method (Leonetti 2010);
- Funding adaptation: where tribes can apply for grant programs that support research and education on climate change, such as the U.S. Department of Agriculture’s “Agriculture and Natural Resources Science for Climate Variability and Change” challenge area;
- Networking: where cross-tribal collaboration upholds treaty areas (ceded territories), pools tribal resources or offers needed services to a range of tribes, like the Great Lakes Indian Fish and Wildlife Commission, National Congress of American Indians, National Tribal Environmental Council and the Institute of Tribal Environmental Professionals;
- Intergovernmental negotiation: where agreements with states and other subnational units are created and maintained, like the 2007 Inland Consent Decree in Michigan between a set of tribes and the state.

Institutions that are in these positions serve as resources for tribal adaptation to the ecological challenges of climate change and the pursuit of collective continuance. A tribal natural resources department, through a sturgeon or wild rice restoration program, can protect or reestablish systems of responsibilities, such as webs of interspecies relationships. A federal funding program can give tribes the support they need to engage in adaptation planning that addresses how to

maintain certain systems of responsibilities when facing certain kinds of ecological challenges. A national organization or treaty council can uphold government-to-government relations with the U.S. and provide technical support for habitat monitoring. The success of these institutions has a direct impact on tribal collective continuance. Institutional success, then, can be understood as the degree to which such institutions advance tribes' collective continuance.

2.3 Coupled political obstructions and ecological challenges

The institutions that tribes must rely on to adapt to climate change are often mired in international, national and local political orders that significantly obstruct their potential for success. In this way, the ecological challenges of climate change are entangled, or coupled, with political obstructions. Political orders are the different circumstances of institutional interplay that can be seen as engendering opportunities and constraints on the success of particular institutions. Here, interplay refers to the field of interactions and connections among institutions. For example, U.S. politics can be seen as a national political order that involves opportunities and constraints created by the connections and interactions among institutions like laws, agency rules, judicial processes and records, available funds and spending decisions, relationships among leaders, bureaucrats and constituencies, democratic decision-making procedures and agency/departmental cultures, among many other active institutions. An institution, like a tribal natural resources department, has to navigate the landscape of these institutions to maintain legitimacy, funding and the capacity to partner meaningfully with federal agencies. In light of this understanding, a political order can either facilitate or obstruct an institution's ability to support collective continuance. It is obstructive when institutional interplay within that political order tends to create more constraints than opportunities for the success of certain kinds of institutions. The reverse, then, is also true. A political order supports collective continuance when institutional interplay within it tends to enable opportunities for success for certain kinds of institutions.

Obstruction and support are coupled with climate change impacts when institutions that respond to climate change are involved. Federal funding programs for adaptation may be difficult for tribes to integrate across the range of tribal departments affected by climate change (Mears 2012). Tribes may be excluded from funding streams that are available to states or agencies through federal programs and/or federal budgets may be too low for tribes to engage in adaptation planning and implementation in the first place (Pardilla 2011; Suagee 2009). Tribes may also face dilemmas about whether to use bureaucratic structures (e.g., co-management and treatment as state status) acceptable to the U.S. instead of structures that flow from their own conceptions of how to govern adaptation efforts (Ranco et al. 2011). In addition, federal and state agencies may not have mature working relations with tribes conducive for climate adaptation planning and management (Shearer 2012). There may not be agencies organized to address certain kinds of problems, like relocation (Maldonado et al. 2013). States may ignore treaties and create political obstacles for tribal self-government (Nesper 2002; Silvern 1999). Different kinds of obstructions result from international climate change policies that are promulgated without Indigenous peoples like tribes having an adequate political platform from which to impact their design and evaluation (Tsosie 2010), which creates the possibility of such policies being out of sync with local circumstances and hard to implement on the ground. Though this paper focuses on federally-recognized tribes, it is important to note that state- and non-recognized tribes have access to less resources than federally-recognized tribes (hence face additional obstructions). These examples, which do not represent an exhaustive list, are obstructions because there is a

burden of constraints placed on institutions that tribes rely on to assure collective continuance in response to climate change. Such constraints impose tradeoffs on tribes because they have to make harsh choices about what efforts to focus on when budgets are low, respect for tribal rights and cultures is lacking, and suitable bureaucratic channels do not exist.

These obstructions exist simultaneously at the local, national and international levels and, at times, are conjoined, making it difficult to locate an origin of a given set of obstructions. It may be tempting, for some, to think that the sheer complexity of these obstructions is an extremely unfortunate state of affairs for which no one is really responsible. In the next subsection, I resist this sort of thinking by arguing why obstructive political orders should be seen as part of formal and retrospective injustice against tribal collective continuance.

2.4 Injustice and responsibility

The coupled political obstructions and ecological challenges of adaptation pose significant injustice. The institutions that tribes must rely on cannot do the work of advancing collective continuance because they face more constraints than opportunities for success. In many cases, the obstructions violate tribes' social, economic and cultural human rights, as defined by the UN's International Covenant on Economic, Social and Cultural Rights (Maldonado et al. 2013), treaty rights (Dittmer 2013), subsistence rights to traditional foods (Lynn et al. 2013), as well as other rights codified by the UN Declaration on the Rights of Indigenous Peoples. These violations exemplify formal injustice because they infringe on or neglect recognized (formal) schedules of rights intended to protect Indigenous peoples.

Two forms of retrospective injustice intensify the severity of the formal injustice. First, tribes did not contribute to the creation of the obstructive political orders and have not benefited from them. The obstructions arise from colonial policies originally intended to weaken tribal resistance to the expansion of U.S. and state political institutions, private companies and private citizens over tribal territories (Wilkinson 2005). Second, while tribes have contributed to anthropogenic climate change through their farming practices that change the soil carbon content and their current uses of electricity, cars, and manufactured goods, their contributions have been relatively minimal, yet they must nonetheless shoulder the impacts via institutions embedded in obstructive political orders. These points are retrospective in considering wrongs perpetrated by past generations of people, as well as circumstances engendered unintentionally by past generations that now serve to motivate wrongs in the present.

The issue of adaptation, then, represents several formal and retrospective layers of injustice against tribes: the institutions tribes must depend on are obstructed in their capacity to uphold tribes' rights; these institutions are needed to address ecological challenges stemming from actions in which tribes participate(d) rather minimally. Yet tribes have no choice but to navigate coupled political obstructions and ecological challenges because their collective continuance is at stake. What makes this set of circumstances exemplary of injustice follows from the "double bind" (Frye 1983) such a situation presents. Tribes cannot escape having to deal with problems they largely did not bring about and there are no obvious institutional options that avoid substantial tradeoffs.

Formal and retrospective injustices should matter to people of all heritages who work with or for federally-recognized tribes. This body of actors includes researchers, planners, administrators, policy specialists, tribal liaisons, lawyers and environmental/natural resources managers in federal, state and tribal agencies and departments. It also includes policy-makers in state, federal and tribal governments, cooperative extension agents and scientists in private,

public and tribal colleges and universities. Some have years of experience partnering with or working for tribes, while others have just begun such work. These leaders, scientists and professionals are also situated differently with respect to the injustices just described. Some may be the beneficiaries of colonial and industrial policies that contributed to weakening tribes and hastening climate change impacts. Others may be situated on the opposite end of this spectrum.

This body of actors cannot dismiss the injustice affecting tribes. While no one individual or agency can eliminate the injustice in question, responsibility nonetheless remains. Insofar as these leaders, scientists and professionals work with or for tribes, they are responsible to do what is in their power to address the coupled political obstructions and ecological challenges of adaptation. They are responsible because they do have some capacity to make changes in institutions and political orders, even if these changes must start at scales that are initially local or quite broad (such as a policy mandate that is slow to be implemented).

A problem immediately becomes clear, however, when attempting to identify exactly what this body of actors can do to better cope with formal and retrospective injustice. Recognizing injustice in tribal adaptation contexts does not aid in deciphering the range of morally essential actions that are indeed within one's power to take. A formal and retrospective account of injustice is too broad to furnish guidance, even though it often proves to be a motivation to act. As a result, simply being able to recognize that tribal adaptation contexts are rife with injustice does not furnish enough guidance for thinking about how to exercise one's responsibility to change the institutions that one can affect. It only posits how collective continuance is in peril and that something must be done, but remains silent on exactly what one should look for institutions to do now and in the future in relation to collective continuance. To understand how to fulfill one's responsibility for action, there also needs to be a forward-looking account of how institutions can serve collective continuance that centers on the interaction between institutions and the systems of responsibilities that constitute collective continuance. Such an account would provide a better idea of how to structure institutions to cope with the coupled ecological challenges and political obstructions of adaptation.

3. Justice and systems of responsibilities

3.1 Justice and institutions

Coming to understand how one's actions should affect coupled ecological challenges and political obstructions requires a more specific understanding of what institutions ought to aim for in the first place. More specific actions would seem to include advocating for transformation of certain aspects of the political order, like doing what one can to ensure that tribes are treated as governments, or changing the structure of an institution to better fit the linked social, technological and natural systems that it must govern (Ebbin2009), like taking action to strengthen an institution's jurisdiction beyond a reservation for a culturally significant species' habitat. I argue in this section for a framework of justice that explains why it is morally essential for leaders, scientists and professionals to take part in these actions. This framework of justice is not formal or retrospective, but rooted in the systems of responsibilities that constitute collective continuance.

Again, systems of responsibilities are the actual schemes of roles and relationships within and amid communities. The intrinsic and instrumental values of these systems, as held by tribes, are put in peril by climate change impacts, which compromises tribal collective continuance. The forward-looking framework sees justice as being achieved when these systems of responsibilities

operate appropriately in response to the ecological challenges of climate change. There are three reasons supporting this view of justice. First, systems of responsibilities are sources of values that ought to be continued as such. Second, certain systems of responsibilities already have notions of justice built into them. For example, in the Anishinaabe worldview, “all beings of Creation have spirit, with duties and responsibilities to each other to ensure the continuation of Creation. Environmental justice in this context is much broader than ‘impacts’ on people. There are responsibilities beyond those of people that also must be fulfilled to ensure the processes of Creation will continue” (McGregor 2009, 28). Third, systems of responsibilities amid communities, such as the federal trust responsibility to tribes, should aim to realize just relations, like making sure that all affected parties participate early in the conception of key policy decisions. For these three reasons, justice, in many possible senses, can be achieved when systems of responsibilities are able to operate appropriately in response to the ecological challenges of climate change. This framework, then, puts systems of responsibilities at the forefront of how one thinks of justice. One’s actions should be guided by goals to support appropriately operating systems of responsibilities.

While more can be said about systems of responsibilities than can be covered here, some distinctions are necessary to show how such a framework can offer guidance to leaders, scientists and professionals. Systems of responsibilities may be persisting or emerging. A system of responsibilities might be like McGregor’s expression of the Anishinaabe worldview, replete with multiple responsibilities across Creation. Another example is the Wabanaki system of responsibilities as viewed from the vantage point of berry plants. These are persisting systems of responsibilities because they are ones that communities have traditionally relied on and seek to extend into the future as sources of intrinsic and instrumental values. Other systems of responsibility are emerging in the sense that they are adaptations to metascale forces, such as globalization, colonialism and climate change. Communities who must relocate, such as Kivalina in Alaska, are having to engender new relationships with federal and state agencies and private companies (like contractors) who are not equipped or structured to deal with climate change-motivated relocation (Maldonado et al. 2013). The need for a system of adequate responsibilities among these parties is desperately needed. Such a system would involve restructuring federal agencies, even designating a lead federal agency for relocation, creating mechanisms for Kivalina to exercise its right to self-determination in where and how it relocates, and fostering international schedules of rights specifically for communities who are displaced or who must migrate frequently in response to climate change (Maldonado et al. 2013). Thus, emerging systems of responsibilities include the new relationships that are needed for communities to relocate because of environmental change, as well as accommodate new species in their territories, cope with losses and begin to use science and other technical support as part of their collective knowledge systems [4], among other possibilities.

The framework includes justice as connoting appropriately operating persisting and emerging systems of responsibilities within and amid communities. Notably, persisting and emerging systems of responsibilities are always subject to reform and transformation. For example, persisting systems of responsibilities may turn out to be harmful to the environment, or no longer safe to practice because of increased environmental hazards. Or emerging systems of responsibilities may be initially too reactionary or unreflective. Justice is situated within persisting and emerging systems of responsibilities that can also be amended. This idea is the basis of the framework that should guide leaders, scientists and professionals in their actions. Key to this framework is understanding how institutions fit within it, which I turn to now.

3.2 The function of institutions

Institutions have an important function regarding justice. Institutions should shelter and even amend the persisting and emerging systems of responsibilities that constitute collective continuance. Here, one must go beyond considering the position of institutions discussed in 2.2. When deciphering whether an institution encourages justice one must consider its function instead. The position of institutions is determined by the kind of activities they actually perform, whereas the function refers to what those activities should work to accomplish. For example, while the position of institutions suggests a range of activities from integrative planning to general partnerships (see 2.2), the function of these institutions is, as has been indicated, to support collective continuance. This means that institutions should shelter and amend the systems of responsibilities that constitute collective continuance.

Leaders, scientists and professionals are responsible for taking actions that can be shown specifically to shelter and amend these systems. Sheltering and amending are two sides of the function of institutions. Sheltering involves protecting systems from disruptions, such as coupled ecological challenges and political obstructions (2.3). Amending involves actions that improve and reform the systems themselves. Crucially, amending involves reflecting on the appropriateness of certain aspects of a system of responsibilities in light of how the environment is changing, new learning from greater experience, and new lessons from interactions with other societies. Sheltering and amending are terms that can be used to suggest more particular guidance for leaders, scientists and professionals. The justice framework described here directs this body of actors to always assess whether the actions that are in their power to perform are contributing to institutional sheltering and amending of the systems of responsibilities that constitute tribal collective continuance.

4. Interpreting four policies as systems of responsibilities

4.1 Beyond compliance

Important contexts already exist in which leaders, scientists and professionals can help to shelter and amend systems of responsibilities. The contexts exist in policies that this body of actors is required to abide by, including the government-to-government relation; the federal trust responsibility; the integration of multiple knowledge sources in climate change research; and the advancement of multiparty governance. I refer to these as policies because they mandate certain kinds of action. Each of the policies has been acknowledged in U.S. laws, agency rules, treaties, reports, court decisions, guidance documents and best practices manuals; they are often part of international law and policy as well. Sometimes these policies are simply seen as legal, bureaucratic or research requirements. But each policy can be interpreted in relation to systems of responsibilities. Leaders, scientists and professionals can affect the institutions they work within to better shelter and amend these systems. These policies fit squarely within this paper's justice framework. By actively engaging with these policies, leaders, scientists and professionals can see how actions they are situated to perform can support tribal collective continuance.

4.2 Government-to-government relationship

The government-to-government relation refers to a persisting system of responsibilities amid different communities. This relation is persisting due to its origins in some of the initial encounters and agreements between Indigenous North Americans and the U.S. It is based on the

idea that tribes are sovereigns—not stakeholders—alongside the sovereign U.S. government. The operation of the government-to-government relationship is intrinsically valuable insofar as it can reflect tribal national identity and instrumentally valuable because tribal governments are often in a better position to respond to climate change impacts at the local scale than any other sovereign. A major issue with this policy is that some climate change impacts may occur so rapidly that federal agencies will sidestep their responsibilities to consult tribes as sovereigns—hence threatening the values of the government-to-government relationship. Sidestepping sovereignty offsets any progress made toward a balance of power among federal and tribal sovereigns who have very different attributes (e.g., the U.S. is among the most populous and wealthiest countries in the world; most tribes have tiny populations and economies). This persisting system of responsibilities must be strong enough to withstand the abrupt and permanent impacts of climate change. Climate change impacts should not be an excuse for weakening progress toward adequate government-to-government relations. Any institution that tribes rely on for adaptation must shelter the government-to-government relationship, which means not compromising it.

4.3 Trust responsibility

The federal government has a trust responsibility to tribes. In *Seminole Nation v. United States*, it was claimed that “[The federal government] has charged itself with moral obligations of the highest responsibility and trust. Its conduct...should therefore be judged by the most exacting fiduciary standards” (1941, 296–297). The trust responsibility now serves as another persisting system of responsibilities amid communities, despite its paternalistic origins. It is based on the idea that tribes are inevitably tied to the forces of globalization that bind their destinies with those of other sovereigns. Its intrinsic value stems from its being a fiduciary compact; its instrumental value stems from its importance for protecting tribes against larger global forces and powers. While tribes aspire to exercise greater self-determination, they cannot pursue it without active collaboration with the federal government. Moreover, the federal government cannot fully protect all U.S. citizens and engage in cooperative federalism without genuine coordination with tribal sovereigns. The federal government has responsibilities to collaborate with tribes in their efforts to work with or resist corporations and private citizens, expand their political authority off-reservation, and pursue ecological outcomes favored by both sovereigns. Tribes are responsible for being accountable local partners. There is an inevitable interdependence of tribes and the federal government, at least in the short-term. Institutions that do not shelter the exercise of the responsibilities leave tribes in positions of greater vulnerability vis-à-vis climate change impacts that require adequate coordination with a large, cross-regional government like the U.S. federal government.

4.4 Integrating tribal and non-tribal sciences

Many policy documents in the U.S. call for the integration of traditional ecological knowledge (TEK) with science in climate change or other environmental or natural resources research. It is sometimes assumed that TEK is only instrumentally valuable to climate science because it is observational knowledge collected over generations. However, TEK best refers to a persisting system of responsibilities. McGregor, for example, defines TEK as the relations among “knowledge, people, and all Creation (the ‘natural’ world as well as the spiritual)...[it is the] process of participating (a verb) fully and responsibly in such relationships, rather than specifically as the knowledge gained from such experiences. For Aboriginal people, TEK is not

just about understanding relationships, it is the relationship with Creation. TEK is something one does” (McGregor 2008, 145). TEK actually refers to entire systems of responsibilities that are intrinsically valuable insofar as the systems are at the very heart of communities’ worldviews and lifeways. The inclusion of TEK in adaptation, management and stewardship strategies is actually about respecting systems of responsibilities. It means creating inclusive research practices that are not only about sharing stores of knowledge, but about sharing understanding of a host of responsibilities that should play integral roles in adaptation, management and stewardship strategies. Institutions that govern or fund research can shelter TEK systems of responsibilities by doing what it takes to ensure their robust participation well beyond the provision of accumulated observations of some landscape. More importantly, TEK concerns tribal strategies for adaptation that are based on tribal systems of responsibilities and the worldviews/cosmologies such systems flow from. Collaboration across science and TEK systems must involve conversations about how different groups of people understand the nature of reality and responsibility.

4.5 Multiparty governance

Multiparty governance refers to the policy, called for sometimes by laws or sometimes for the exercise of treaties, for greater partnership, cooperative and network institutions to address the cross-boundary, regional dimensions of climate change. They include intertribal cooperatives, conferences (summits, symposia), alliances, treaty councils, collaborations, non-governmental organizations and confederations, among others. Examples are the Columbia River Inter-tribal Fish Commission (CRITFC), The Great Lakes Tribal Climate Change Summit (2011), organized by the Menominee Nation Institute for Sustainable Development, the United League of Indigenous Nations and The First Stewards Symposium on climate change and coastal peoples (2012). These multiparty institutions support persisting and emerging systems of responsibilities amid different tribal and non-tribal communities. Organizations like CRITFC support persisting systems of responsibilities among tribes, the federal government and states that were initially generated by treaties. Summits and symposia gather tribal and non-tribal communities together to develop new systems of responsibilities for cooperative adaptation. The intrinsic value of partnership and networking concerns the significance of strong relationships with those from different communities, from solidarity to the acknowledgment of similar spiritual grounding across communities. There is intrinsic value in developing and respecting a shared vision. The instrumental value concerns how networking and partnership provide greater political representation before state and federal governments, the collection and management of scientific data, transferable technical support and increased communication and sharing. Leaders, scientists and professionals should see specific institutions that embody this policy as sheltering persisting and emerging systems of responsibilities (of partnership and networks) amid communities.

5. Conclusion

Leaders, scientists and professionals are in the position to take justice-based action for tribes who must adapt to climate change. They are responsible for doing what is in their power to affect institutions through actions that can be shown to shelter or amend persisting and emerging systems of responsibilities. These systems of responsibilities constitute tribal collective continuance. This framework of justice offers guidance that can capture what makes certain actions morally essential for tribal adaptation. The research in this Special Issue, for example, is

vital because it provides data that can contribute to sheltering systems of responsibilities involved in webs of interspecies relationships and government-to-government partnerships. The framework of justice can also be seen in work spanning from the Swinomish Climate Change Initiative to the Institute of Tribal Environmental Professionals to the Tribal Climate Change Project to the American Indian and Alaska Native Climate Change Working Group, among many other projects generated by tribes or in partnership with others that are too numerous to name here. Shifting one's thinking to seeing justice as situated within systems of responsibilities is among the key transitions that needs to occur for the sake of supporting tribal adaptation to climate change.

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Footnotes

1. For a rich articulation of collective continuance as “environmental heritage,” see (Figuroa 2001).
2. Collective continuance is a concern to all communities, though this paper focuses on tribes. See Schlosberg and Carruthers (2010) for an account of Indigenous peoples and capabilities theories of justice.
3. See Cuomo 2011 for an important, and related, account of climate justice and responsibility.
4. See Tuana 2013 for a related conversation and key insights into gender and climate science.

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